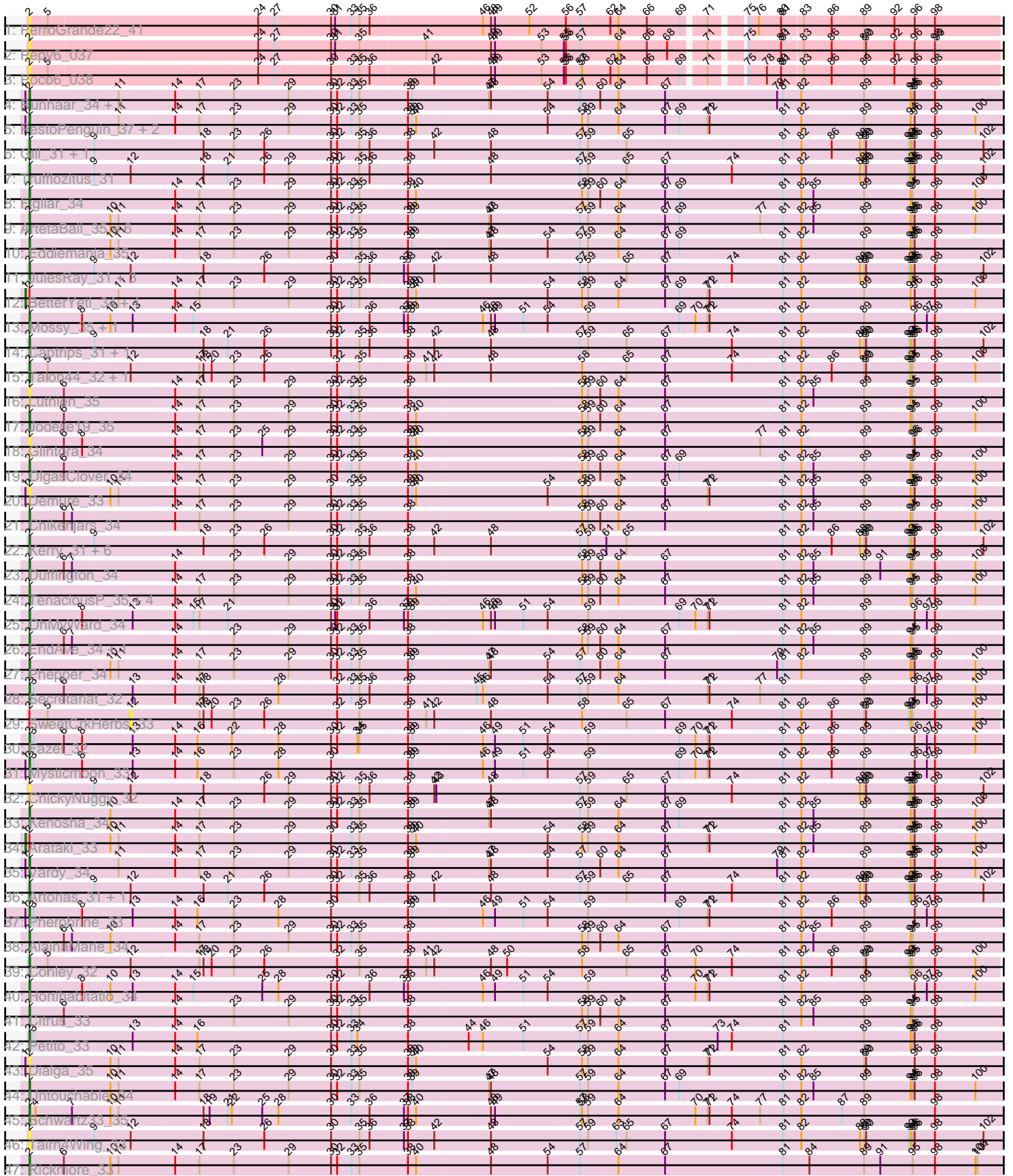


Pham 303320



Note: Tracks are now grouped by subcluster and scaled. Switching in subcluster is indicated by changes in track color. Track scale is now set by default to display the region 30 bp upstream of start 1 to 30 bp downstream of the last possible start. If this default region is judged to be packed too tightly with annotated starts, the track will be further scaled to only show that region of the ORF with annotated starts. This action will be indicated by adding "Zoomed" to the title. For starts, yellow indicates the location of called starts comprised solely of Glimmer/GeneMark auto-annotations, green indicates the location of called starts with at least 1 manual gene annotation.

## Pham 303320 Report

This analysis was run 06/08/26 on database version 649.

Pham number 303320 has 76 members, 18 are drafts.

Phages represented in each track:

- Track 1 : PerroGrande22\_41
- Track 2 : Pepy6\_037
- Track 3 : Poco6\_038
- Track 4 : Runhaar\_34, Burley\_34
- Track 5 : PestoPenguin\_37, Aloe25\_37, Gusicorn\_34
- Track 6 : Gill\_31, Roney\_31
- Track 7 : Trufflozitus\_31
- Track 8 : Figliar\_34
- Track 9 : ArtetaBall\_35, Madvan\_34, Crocheter\_34, Hydrus\_35, CWormy\_34, Nadmeg\_35, Zeph\_35
- Track 10 : Eddiemania\_35
- Track 11 : JulesRay\_31, Dancer\_31, Bugg\_32, Football\_32
- Track 12 : BetterYeti\_34, ShaggyRogers\_34
- Track 13 : Mossy\_35, Blanky\_34
- Track 14 : Captrips\_31, Avazak\_31
- Track 15 : Talon44\_32, Perkunas\_33
- Track 16 : Luthien\_35
- Track 17 : Jodelie19\_35
- Track 18 : Glintora\_34
- Track 19 : OlgasClover\_34
- Track 20 : Demure\_33
- Track 21 : Chikenjars\_34
- Track 22 : Kerry\_31, Capybara\_31, NoPickles\_31, Gravy\_31, Tanis\_31, Magel\_32, Odesza\_31
- Track 23 : Duffington\_34
- Track 24 : TenaciousP\_35, Tonaltzin\_36, BluerMoon\_34, Aflac\_34, MajinBuu\_34
- Track 25 : OhMyWard\_34
- Track 26 : EndAve\_34, Nithya\_34
- Track 27 : Phepper\_34
- Track 28 : Secretariat\_32
- Track 29 : SweetCrkHerbs\_33
- Track 30 : Fazel\_32
- Track 31 : Mysticmoon\_33
- Track 32 : ChickyNuggy\_32
- Track 33 : Kenosha\_34
- Track 34 : Arataki\_33
- Track 35 : Vardy\_34

- Track 36 : Artorias\_31, FortCran\_31
- Track 37 : Pherobrine\_33
- Track 38 : AlainaMarie\_34
- Track 39 : Conley\_32
- Track 40 : Hortihabitatio\_34
- Track 41 : Citrus\_33
- Track 42 : Petite\_33
- Track 43 : Dialga\_35
- Track 44 : Untouchable\_34
- Track 45 : Schwartz33\_35
- Track 46 : Tairn4Wing\_33
- Track 47 : Rickmore\_33

**Summary of Final Annotations (See graph section above for start numbers):**

The start number called the most often in the published annotations is 2, it was called in 55 of the 58 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Aflac\_34, AlainaMarie\_34, Aloe25\_37, ArtetaBall\_35, Artorias\_31, Avazak\_31, Blanky\_34, BluerMoon\_34, Bugg\_32, Burley\_34, CWormy\_34, Captrips\_31, Copybara\_31, ChickyNuggy\_32, Chikenjars\_34, Citrus\_33, Conley\_32, Crocheter\_34, Dancer\_31, Demure\_33, Dialga\_35, Duffington\_34, Eddiemania\_35, EndAve\_34, Fazel\_32, Figliar\_34, Football\_32, FortCran\_31, Gill\_31, Glintora\_34, Gravy\_31, Gusicorn\_34, Hortihabitatio\_34, Hydrus\_35, Jodelie19\_35, JulesRay\_31, Kenosha\_34, Kerry\_31, Luthien\_35, Madvan\_34, Magel\_32, MajinBuu\_34, Mossy\_35, Mysticmoon\_33, Nadmeg\_35, Nithya\_34, NoPickles\_31, Odesza\_31, OhMyWard\_34, OlgasClover\_34, Pepy6\_037, Perkunas\_33, PerroGrande22\_41, PestoPenguin\_37, Petite\_33, Phepper\_34, Pherobrine\_33, Poco6\_038, Rickmore\_33, Roney\_31, Runhaar\_34, Schwartz33\_35, Secretariat\_32, Tairn4Wing\_33, Talon44\_32, Tanis\_31, TenaciousP\_35, Tonaltzin\_36, Trufflozitus\_31, Untouchable\_34, Vardy\_34, Zeph\_35,

Genes that have the "Most Annotated" start but do not call it:

- Arataki\_33, BetterYeti\_34, ShaggyRogers\_34, SweetCrkHerbs\_33,

Genes that do not have the "Most Annotated" start:

- 

**Summary by start number:**

Start 1:

- Found in 13 of 76 ( 17.1% ) of genes in pham
- Manual Annotations of this start: 3 of 58
- Called 23.1% of time when present
- Phage (with cluster) where this start called: Arataki\_33 (DJ), BetterYeti\_34 (DJ), ShaggyRogers\_34 (DJ),

Start 2:

- Found in 76 of 76 ( 100.0% ) of genes in pham

- Manual Annotations of this start: 55 of 58
- Called 94.7% of time when present
- Phage (with cluster) where this start called: Aflac\_34 (DJ), AlainaMarie\_34 (DJ), Aloe25\_37 (DJ), ArtetaBall\_35 (DJ), Artorias\_31 (DJ), Avazak\_31 (DJ), Blanky\_34 (DJ), BluerMoon\_34 (DJ), Bugg\_32 (DJ), Burley\_34 (DJ), CWormy\_34 (DJ), Captrips\_31 (DJ), Copybara\_31 (DJ), ChickyNuggy\_32 (DJ), Chikenjars\_34 (DJ), Citrus\_33 (DJ), Conley\_32 (DJ), Crocheter\_34 (DJ), Dancer\_31 (DJ), Demure\_33 (DJ), Dialga\_35 (DJ), Duffington\_34 (DJ), Eddiemania\_35 (DJ), EndAve\_34 (DJ), Fazel\_32 (DJ), Figliar\_34 (DJ), Football\_32 (DJ), FortCran\_31 (DJ), Gill\_31 (DJ), Glintora\_34 (DJ), Gravy\_31 (DJ), Gusicorn\_34 (DJ), Hortihabitatio\_34 (DJ), Hydrus\_35 (DJ), Jodelie19\_35 (DJ), JulesRay\_31 (DJ), Kenosha\_34 (DJ), Kerry\_31 (DJ), Luthien\_35 (DJ), Madvan\_34 (DJ), Magel\_32 (DJ), MajinBuu\_34 (DJ), Mossy\_35 (DJ), Mysticmoon\_33 (DJ), Nadmeg\_35 (DJ), Nithya\_34 (DJ), NoPickles\_31 (DJ), Odesza\_31 (DJ), OhMyWard\_34 (DJ), OlgasClover\_34 (DJ), Pepy6\_037 (CC), Perkunas\_33 (DJ), PerroGrande22\_41 (CC), PestoPenguin\_37 (DJ), Petite\_33 (DJ), Phepper\_34 (DJ), Pherobrine\_33 (DJ), Poco6\_038 (CC), Rickmore\_33 (DJ), Roney\_31 (DJ), Runhaar\_34 (DJ), Schwartz33\_35 (DJ), Secretariat\_32 (DJ), Tairn4Wing\_33 (DJ), Talon44\_32 (DJ), Tanis\_31 (DJ), TenaciousP\_35 (DJ), Tonaltzin\_36 (DJ), Trufflozitus\_31 (DJ), Untouchable\_34 (DJ), Vardy\_34 (DJ), Zeph\_35 (DJ),

Start 12:

- Found in 13 of 76 ( 17.1% ) of genes in pham
- No Manual Annotations of this start.
- Called 7.7% of time when present
- Phage (with cluster) where this start called: SweetCrkHerbs\_33 (DJ),

### Summary by clusters:

There are 2 clusters represented in this pham: CC, DJ,

Info for manual annotations of cluster DJ:

- Start number 1 was manually annotated 3 times for cluster DJ.
- Start number 2 was manually annotated 55 times for cluster DJ.

### Gene Information:

Gene: Aflac\_34 Start: 29477, Stop: 30910, Start Num: 2

Candidate Starts for Aflac\_34:

(Start: 2 @29477 has 55 MA's), (14, 29687), (17, 29723), (23, 29774), (29, 29855), (30, 29918), (32, 29927), (33, 29948), (35, 29960), (38, 30032), (40, 30044), (58, 30284), (59, 30293), (60, 30311), (64, 30335), (67, 30404), (81, 30578), (82, 30605), (85, 30623), (89, 30698), (94, 30767), (95, 30770), (98, 30803), (100, 30863),

Gene: AlainaMarie\_34 Start: 29461, Stop: 30894, Start Num: 2

Candidate Starts for AlainaMarie\_34:

(Start: 2 @29461 has 55 MA's), (6, 29512), (7, 29524), (10, 29578), (14, 29671), (17, 29707), (23, 29758), (29, 29839), (30, 29902), (32, 29911), (33, 29932), (35, 29944), (38, 30016), (58, 30268), (59, 30277), (60, 30295), (64, 30319), (67, 30388), (81, 30562), (82, 30589), (85, 30607), (89, 30682), (94, 30751), (95, 30754), (98, 30787),

Gene: Aloe25\_37 Start: 29251, Stop: 30684, Start Num: 2

Candidate Starts for Aloe25\_37:

(Start: 1 @29245 has 3 MA's), (Start: 2 @29251 has 55 MA's), (11, 29380), (14, 29461), (17, 29497), (23, 29548), (29, 29629), (30, 29692), (32, 29701), (33, 29722), (35, 29734), (38, 29806), (39, 29812), (40, 29818), (54, 30010), (58, 30058), (59, 30067), (64, 30109), (67, 30178), (69, 30199), (71, 30241), (72, 30244), (81, 30352), (82, 30379), (89, 30472), (94, 30541), (96, 30547), (98, 30577), (100, 30637),

Gene: Arataki\_33 Start: 28564, Stop: 30003, Start Num: 1

Candidate Starts for Arataki\_33:

(Start: 1 @28564 has 3 MA's), (Start: 2 @28570 has 55 MA's), (10, 28687), (11, 28699), (14, 28780), (17, 28816), (23, 28867), (29, 28948), (30, 29011), (33, 29041), (35, 29053), (38, 29125), (39, 29131), (40, 29137), (54, 29329), (58, 29377), (59, 29386), (64, 29428), (67, 29497), (71, 29560), (72, 29563), (81, 29671), (82, 29698), (85, 29716), (89, 29791), (94, 29860), (95, 29863), (96, 29866), (98, 29896), (100, 29956),

Gene: ArtetaBall\_35 Start: 29604, Stop: 31037, Start Num: 2

Candidate Starts for ArtetaBall\_35:

(Start: 2 @29604 has 55 MA's), (10, 29721), (11, 29733), (14, 29814), (17, 29850), (23, 29901), (29, 29982), (30, 30045), (32, 30054), (33, 30075), (35, 30087), (38, 30159), (39, 30165), (47, 30276), (48, 30279), (57, 30408), (59, 30420), (64, 30462), (67, 30531), (69, 30552), (77, 30672), (81, 30705), (82, 30732), (85, 30750), (89, 30825), (94, 30894), (95, 30897), (96, 30900), (98, 30930), (100, 30990),

Gene: Artorias\_31 Start: 26462, Stop: 27889, Start Num: 2

Candidate Starts for Artorias\_31:

(Start: 2 @26462 has 55 MA's), (9, 26555), (12, 26609), (18, 26714), (21, 26750), (26, 26804), (30, 26903), (32, 26912), (35, 26945), (36, 26960), (38, 27017), (42, 27056), (48, 27140), (57, 27269), (59, 27281), (65, 27335), (67, 27392), (74, 27491), (81, 27566), (82, 27593), (88, 27680), (89, 27686), (90, 27689), (93, 27752), (94, 27755), (95, 27758), (96, 27761), (98, 27791), (102, 27863),

Gene: Avazak\_31 Start: 26469, Stop: 27896, Start Num: 2

Candidate Starts for Avazak\_31:

(Start: 2 @26469 has 55 MA's), (9, 26562), (18, 26721), (21, 26757), (26, 26811), (30, 26910), (32, 26919), (35, 26952), (36, 26967), (38, 27024), (42, 27063), (48, 27147), (57, 27276), (59, 27288), (65, 27342), (67, 27399), (74, 27498), (81, 27573), (82, 27600), (88, 27687), (89, 27693), (90, 27696), (93, 27759), (94, 27762), (95, 27765), (96, 27768), (98, 27798), (102, 27870),

Gene: BetterYeti\_34 Start: 29245, Stop: 30684, Start Num: 1

Candidate Starts for BetterYeti\_34:

(Start: 1 @29245 has 3 MA's), (Start: 2 @29251 has 55 MA's), (11, 29380), (14, 29461), (17, 29497), (23, 29548), (29, 29629), (30, 29692), (32, 29701), (33, 29722), (35, 29734), (38, 29806), (39, 29812), (40, 29818), (54, 30010), (58, 30058), (59, 30067), (64, 30109), (67, 30178), (69, 30199), (71, 30241), (72, 30244), (81, 30352), (82, 30379), (89, 30472), (94, 30541), (96, 30547), (98, 30577), (100, 30637),

Gene: Blanky\_34 Start: 30444, Stop: 31883, Start Num: 2

Candidate Starts for Blanky\_34:

(Start: 2 @30444 has 55 MA's), (8, 30522), (10, 30561), (13, 30594), (14, 30654), (15, 30681), (30, 30885), (32, 30894), (36, 30942), (37, 30993), (38, 30999), (39, 31005), (46, 31107), (48, 31119), (49, 31125), (51, 31167), (54, 31203), (59, 31260), (69, 31392), (70, 31416), (71, 31434), (72, 31437), (81, 31545), (82, 31572), (89, 31665), (96, 31740), (97, 31758), (98, 31770),

Gene: BluerMoon\_34 Start: 29474, Stop: 30907, Start Num: 2

Candidate Starts for BluerMoon\_34:

(Start: 2 @29474 has 55 MA's), (14, 29684), (17, 29720), (23, 29771), (29, 29852), (30, 29915), (32, 29924), (33, 29945), (35, 29957), (38, 30029), (40, 30041), (58, 30281), (59, 30290), (60, 30308), (64, 30332), (67, 30401), (81, 30575), (82, 30602), (85, 30620), (89, 30695), (94, 30764), (95, 30767), (98, 30800), (100, 30860),

Gene: Bugg\_32 Start: 26505, Stop: 27932, Start Num: 2

Candidate Starts for Bugg\_32:

(Start: 2 @26505 has 55 MA's), (9, 26598), (12, 26652), (18, 26757), (26, 26847), (30, 26946), (35, 26988), (36, 27003), (37, 27054), (38, 27060), (42, 27099), (48, 27183), (57, 27312), (59, 27324), (65, 27378), (67, 27435), (74, 27534), (81, 27609), (82, 27636), (88, 27723), (89, 27729), (90, 27732), (93, 27795), (94, 27798), (95, 27801), (96, 27804), (98, 27834), (102, 27906),

Gene: Burley\_34 Start: 29212, Stop: 30645, Start Num: 2

Candidate Starts for Burley\_34:

(Start: 1 @29206 has 3 MA's), (Start: 2 @29212 has 55 MA's), (11, 29341), (14, 29422), (17, 29458), (23, 29509), (29, 29590), (30, 29653), (32, 29662), (33, 29683), (35, 29695), (38, 29767), (39, 29773), (47, 29884), (48, 29887), (54, 29971), (57, 30016), (60, 30046), (64, 30070), (67, 30139), (79, 30304), (81, 30313), (82, 30340), (89, 30433), (94, 30502), (95, 30505), (96, 30508), (98, 30538),

Gene: CWormy\_34 Start: 28912, Stop: 30345, Start Num: 2

Candidate Starts for CWormy\_34:

(Start: 2 @28912 has 55 MA's), (10, 29029), (11, 29041), (14, 29122), (17, 29158), (23, 29209), (29, 29290), (30, 29353), (32, 29362), (33, 29383), (35, 29395), (38, 29467), (39, 29473), (47, 29584), (48, 29587), (57, 29716), (59, 29728), (64, 29770), (67, 29839), (69, 29860), (77, 29980), (81, 30013), (82, 30040), (85, 30058), (89, 30133), (94, 30202), (95, 30205), (96, 30208), (98, 30238), (100, 30298),

Gene: Captrips\_31 Start: 26498, Stop: 27925, Start Num: 2

Candidate Starts for Captrips\_31:

(Start: 2 @26498 has 55 MA's), (9, 26591), (18, 26750), (21, 26786), (26, 26840), (30, 26939), (32, 26948), (35, 26981), (36, 26996), (38, 27053), (42, 27092), (48, 27176), (57, 27305), (59, 27317), (65, 27371), (67, 27428), (74, 27527), (81, 27602), (82, 27629), (88, 27716), (89, 27722), (90, 27725), (93, 27788), (94, 27791), (95, 27794), (96, 27797), (98, 27827), (102, 27899),

Gene: Capybara\_31 Start: 26573, Stop: 28000, Start Num: 2

Candidate Starts for Capybara\_31:

(Start: 2 @26573 has 55 MA's), (9, 26666), (18, 26825), (23, 26870), (26, 26915), (30, 27014), (32, 27023), (35, 27056), (36, 27071), (38, 27128), (42, 27167), (48, 27251), (57, 27380), (59, 27392), (61, 27416), (65, 27446), (81, 27677), (82, 27704), (86, 27749), (88, 27791), (89, 27797), (90, 27800), (93, 27863), (94, 27866), (95, 27869), (96, 27872), (98, 27902), (102, 27974),

Gene: ChickyNuggy\_32 Start: 26210, Stop: 27637, Start Num: 2

Candidate Starts for ChickyNuggy\_32:

(Start: 2 @26210 has 55 MA's), (9, 26303), (12, 26357), (18, 26462), (26, 26552), (29, 26588), (30, 26651), (32, 26660), (35, 26693), (36, 26708), (38, 26765), (42, 26804), (43, 26807), (48, 26888), (57, 27017), (59, 27029), (65, 27083), (67, 27140), (74, 27239), (81, 27314), (82, 27341), (88, 27428), (89, 27434), (90, 27437), (93, 27500), (94, 27503), (95, 27506), (96, 27509), (98, 27539), (102, 27611),

Gene: Chikenjars\_34 Start: 29464, Stop: 30897, Start Num: 2

Candidate Starts for Chikenjars\_34:

(Start: 2 @29464 has 55 MA's), (6, 29515), (7, 29527), (14, 29674), (17, 29710), (23, 29761), (29, 29842), (30, 29905), (32, 29914), (33, 29935), (35, 29947), (38, 30019), (58, 30271), (59, 30280), (60, 30298), (64, 30322), (67, 30391), (81, 30565), (82, 30592), (85, 30610), (89, 30685), (94, 30754), (95, 30757), (98, 30790), (100, 30850),

Gene: Citrus\_33 Start: 29468, Stop: 30901, Start Num: 2

Candidate Starts for Citrus\_33:

(Start: 2 @29468 has 55 MA's), (6, 29519), (14, 29678), (23, 29765), (29, 29846), (30, 29909), (32, 29918), (33, 29939), (35, 29951), (38, 30023), (58, 30275), (59, 30284), (60, 30302), (64, 30326), (67, 30395), (81, 30569), (82, 30596), (85, 30614), (89, 30689), (94, 30758), (95, 30761), (98, 30794),

Gene: Conley\_32 Start: 27539, Stop: 28963, Start Num: 2

Candidate Starts for Conley\_32:

(Start: 2 @27539 has 55 MA's), (5, 27566), (12, 27686), (17, 27785), (18, 27791), (20, 27803), (23, 27836), (26, 27881), (32, 27989), (35, 28022), (38, 28094), (41, 28121), (42, 28133), (48, 28217), (50, 28241), (58, 28349), (65, 28412), (67, 28469), (70, 28514), (74, 28568), (81, 28643), (82, 28670), (86, 28715), (89, 28763), (90, 28766), (93, 28829), (94, 28832), (95, 28835), (98, 28868), (100, 28928),

Gene: Crocheter\_34 Start: 29604, Stop: 31037, Start Num: 2

Candidate Starts for Crocheter\_34:

(Start: 2 @29604 has 55 MA's), (10, 29721), (11, 29733), (14, 29814), (17, 29850), (23, 29901), (29, 29982), (30, 30045), (32, 30054), (33, 30075), (35, 30087), (38, 30159), (39, 30165), (47, 30276), (48, 30279), (57, 30408), (59, 30420), (64, 30462), (67, 30531), (69, 30552), (77, 30672), (81, 30705), (82, 30732), (85, 30750), (89, 30825), (94, 30894), (95, 30897), (96, 30900), (98, 30930), (100, 30990),

Gene: Dancer\_31 Start: 26198, Stop: 27625, Start Num: 2

Candidate Starts for Dancer\_31:

(Start: 2 @26198 has 55 MA's), (9, 26291), (12, 26345), (18, 26450), (26, 26540), (30, 26639), (35, 26681), (36, 26696), (37, 26747), (38, 26753), (42, 26792), (48, 26876), (57, 27005), (59, 27017), (65, 27071), (67, 27128), (74, 27227), (81, 27302), (82, 27329), (88, 27416), (89, 27422), (90, 27425), (93, 27488), (94, 27491), (95, 27494), (96, 27497), (98, 27527), (102, 27599),

Gene: Demure\_33 Start: 28570, Stop: 30003, Start Num: 2

Candidate Starts for Demure\_33:

(Start: 1 @28564 has 3 MA's), (Start: 2 @28570 has 55 MA's), (10, 28687), (11, 28699), (14, 28780), (17, 28816), (23, 28867), (29, 28948), (30, 29011), (33, 29041), (35, 29053), (38, 29125), (39, 29131), (40, 29137), (54, 29329), (58, 29377), (59, 29386), (64, 29428), (67, 29497), (71, 29560), (72, 29563), (81, 29671), (82, 29698), (85, 29716), (89, 29791), (94, 29860), (95, 29863), (96, 29866), (98, 29896), (100, 29956),

Gene: Dialga\_35 Start: 29626, Stop: 31059, Start Num: 2

Candidate Starts for Dialga\_35:

(Start: 1 @29620 has 3 MA's), (Start: 2 @29626 has 55 MA's), (10, 29743), (11, 29755), (14, 29836), (17, 29872), (23, 29923), (29, 30004), (30, 30067), (33, 30097), (35, 30109), (38, 30181), (39, 30187), (40, 30193), (54, 30385), (58, 30433), (59, 30442), (64, 30484), (67, 30553), (71, 30616), (72, 30619), (81, 30727), (82, 30754), (89, 30847), (90, 30850), (96, 30922), (98, 30952),

Gene: Duffington\_34 Start: 29452, Stop: 30885, Start Num: 2

Candidate Starts for Duffington\_34:

(Start: 2 @29452 has 55 MA's), (6, 29503), (7, 29515), (14, 29662), (23, 29749), (29, 29830), (30, 29893), (32, 29902), (33, 29923), (35, 29935), (38, 30007), (58, 30259), (59, 30268), (60, 30286), (64, 30310), (67, 30379), (81, 30553), (82, 30580), (85, 30598), (89, 30673), (91, 30697), (94, 30742), (95, 30745), (98, 30778), (100, 30838),

Gene: Eddiemania\_35 Start: 30113, Stop: 31546, Start Num: 2

Candidate Starts for Eddiemania\_35:

(Start: 2 @30113 has 55 MA's), (10, 30230), (11, 30242), (14, 30323), (17, 30359), (23, 30410), (29, 30491), (30, 30554), (32, 30563), (33, 30584), (35, 30596), (38, 30668), (39, 30674), (47, 30785), (48, 30788), (54, 30872), (57, 30917), (59, 30929), (64, 30971), (67, 31040), (69, 31061), (81, 31214), (82, 31241), (89, 31334), (94, 31403), (95, 31406), (96, 31409), (98, 31439),

Gene: EndAve\_34 Start: 29464, Stop: 30897, Start Num: 2

Candidate Starts for EndAve\_34:

(Start: 2 @29464 has 55 MA's), (6, 29515), (7, 29527), (14, 29674), (23, 29761), (29, 29842), (30, 29905), (32, 29914), (33, 29935), (35, 29947), (38, 30019), (58, 30271), (59, 30280), (60, 30298), (64, 30322), (67, 30391), (81, 30565), (82, 30592), (85, 30610), (89, 30685), (94, 30754), (95, 30757), (98, 30790),

Gene: Fazel\_32 Start: 28489, Stop: 29928, Start Num: 2

Candidate Starts for Fazel\_32:

(Start: 2 @28489 has 55 MA's), (3, 28495), (6, 28540), (8, 28567), (13, 28639), (14, 28699), (16, 28732), (22, 28783), (28, 28852), (30, 28930), (32, 28939), (34, 28969), (35, 28972), (38, 29044), (39, 29050), (46, 29152), (49, 29170), (51, 29212), (54, 29248), (59, 29305), (69, 29437), (70, 29461), (71, 29479), (72, 29482), (81, 29590), (82, 29617), (86, 29662), (89, 29710), (96, 29785), (97, 29803), (98, 29815), (100, 29875),

Gene: Figliar\_34 Start: 29462, Stop: 30895, Start Num: 2

Candidate Starts for Figliar\_34:

(Start: 2 @29462 has 55 MA's), (14, 29672), (17, 29708), (23, 29759), (29, 29840), (30, 29903), (32, 29912), (33, 29933), (35, 29945), (38, 30017), (40, 30029), (58, 30269), (59, 30278), (60, 30296), (64, 30320), (67, 30389), (69, 30410), (81, 30563), (82, 30590), (85, 30608), (89, 30683), (94, 30752), (95, 30755), (98, 30788), (100, 30848),

Gene: Football\_32 Start: 26210, Stop: 27637, Start Num: 2

Candidate Starts for Football\_32:

(Start: 2 @26210 has 55 MA's), (9, 26303), (12, 26357), (18, 26462), (26, 26552), (30, 26651), (35, 26693), (36, 26708), (37, 26759), (38, 26765), (42, 26804), (48, 26888), (57, 27017), (59, 27029), (65, 27083), (67, 27140), (74, 27239), (81, 27314), (82, 27341), (88, 27428), (89, 27434), (90, 27437), (93, 27500), (94, 27503), (95, 27506), (96, 27509), (98, 27539), (102, 27611),

Gene: FortCran\_31 Start: 26462, Stop: 27889, Start Num: 2

Candidate Starts for FortCran\_31:

(Start: 2 @26462 has 55 MA's), (9, 26555), (12, 26609), (18, 26714), (21, 26750), (26, 26804), (30, 26903), (32, 26912), (35, 26945), (36, 26960), (38, 27017), (42, 27056), (48, 27140), (57, 27269), (59, 27281), (65, 27335), (67, 27392), (74, 27491), (81, 27566), (82, 27593), (88, 27680), (89, 27686), (90, 27689), (93, 27752), (94, 27755), (95, 27758), (96, 27761), (98, 27791), (102, 27863),

Gene: Gill\_31 Start: 26585, Stop: 28012, Start Num: 2

Candidate Starts for Gill\_31:

(Start: 2 @26585 has 55 MA's), (9, 26678), (18, 26837), (23, 26882), (26, 26927), (30, 27026), (32, 27035), (35, 27068), (36, 27083), (38, 27140), (42, 27179), (48, 27263), (57, 27392), (59, 27404), (65, 27458), (81, 27689), (82, 27716), (86, 27761), (88, 27803), (89, 27809), (90, 27812), (93, 27875), (94, 27878), (95, 27881), (96, 27884), (98, 27914), (102, 27986),

Gene: Glintora\_34 Start: 29411, Stop: 30847, Start Num: 2

Candidate Starts for Glintora\_34:

(Start: 2 @29411 has 55 MA's), (6, 29462), (8, 29489), (14, 29621), (17, 29657), (23, 29708), (25, 29750), (29, 29789), (30, 29852), (32, 29861), (33, 29882), (35, 29894), (38, 29966), (39, 29972), (40, 29978), (58, 30218), (59, 30227), (64, 30269), (67, 30338), (77, 30479), (81, 30512), (82, 30539), (89,

30632), (95, 30704), (96, 30707), (98, 30737),

Gene: Gravy\_31 Start: 26585, Stop: 28012, Start Num: 2

Candidate Starts for Gravy\_31:

(Start: 2 @26585 has 55 MA's), (9, 26678), (18, 26837), (23, 26882), (26, 26927), (30, 27026), (32, 27035), (35, 27068), (36, 27083), (38, 27140), (42, 27179), (48, 27263), (57, 27392), (59, 27404), (61, 27428), (65, 27458), (81, 27689), (82, 27716), (86, 27761), (88, 27803), (89, 27809), (90, 27812), (93, 27875), (94, 27878), (95, 27881), (96, 27884), (98, 27914), (102, 27986),

Gene: Gusicorn\_34 Start: 29251, Stop: 30684, Start Num: 2

Candidate Starts for Gusicorn\_34:

(Start: 1 @29245 has 3 MA's), (Start: 2 @29251 has 55 MA's), (11, 29380), (14, 29461), (17, 29497), (23, 29548), (29, 29629), (30, 29692), (32, 29701), (33, 29722), (35, 29734), (38, 29806), (39, 29812), (40, 29818), (54, 30010), (58, 30058), (59, 30067), (64, 30109), (67, 30178), (69, 30199), (71, 30241), (72, 30244), (81, 30352), (82, 30379), (89, 30472), (94, 30541), (96, 30547), (98, 30577), (100, 30637),

Gene: Hortihabitatio\_34 Start: 28881, Stop: 30320, Start Num: 2

Candidate Starts for Hortihabitatio\_34:

(Start: 2 @28881 has 55 MA's), (8, 28959), (10, 28998), (13, 29031), (14, 29091), (15, 29118), (25, 29220), (28, 29244), (30, 29322), (32, 29331), (36, 29379), (37, 29430), (38, 29436), (46, 29544), (49, 29562), (51, 29604), (54, 29640), (59, 29697), (67, 29808), (70, 29853), (71, 29871), (72, 29874), (81, 29982), (82, 30009), (89, 30102), (96, 30177), (97, 30195), (98, 30207), (100, 30267),

Gene: Hydrus\_35 Start: 29979, Stop: 31412, Start Num: 2

Candidate Starts for Hydrus\_35:

(Start: 2 @29979 has 55 MA's), (10, 30096), (11, 30108), (14, 30189), (17, 30225), (23, 30276), (29, 30357), (30, 30420), (32, 30429), (33, 30450), (35, 30462), (38, 30534), (39, 30540), (47, 30651), (48, 30654), (57, 30783), (59, 30795), (64, 30837), (67, 30906), (69, 30927), (77, 31047), (81, 31080), (82, 31107), (85, 31125), (89, 31200), (94, 31269), (95, 31272), (96, 31275), (98, 31305), (100, 31365),

Gene: Jodelie19\_35 Start: 30901, Stop: 32334, Start Num: 2

Candidate Starts for Jodelie19\_35:

(Start: 2 @30901 has 55 MA's), (6, 30952), (14, 31111), (17, 31147), (23, 31198), (29, 31279), (30, 31342), (32, 31351), (33, 31372), (35, 31384), (38, 31456), (40, 31468), (58, 31708), (59, 31717), (60, 31735), (64, 31759), (67, 31828), (81, 32002), (82, 32029), (89, 32122), (94, 32191), (95, 32194), (98, 32227), (100, 32287),

Gene: JulesRay\_31 Start: 26492, Stop: 27919, Start Num: 2

Candidate Starts for JulesRay\_31:

(Start: 2 @26492 has 55 MA's), (9, 26585), (12, 26639), (18, 26744), (26, 26834), (30, 26933), (35, 26975), (36, 26990), (37, 27041), (38, 27047), (42, 27086), (48, 27170), (57, 27299), (59, 27311), (65, 27365), (67, 27422), (74, 27521), (81, 27596), (82, 27623), (88, 27710), (89, 27716), (90, 27719), (93, 27782), (94, 27785), (95, 27788), (96, 27791), (98, 27821), (102, 27893),

Gene: Kenosha\_34 Start: 30014, Stop: 31447, Start Num: 2

Candidate Starts for Kenosha\_34:

(Start: 2 @30014 has 55 MA's), (10, 30131), (14, 30224), (17, 30260), (23, 30311), (29, 30392), (30, 30455), (32, 30464), (33, 30485), (35, 30497), (38, 30569), (39, 30575), (47, 30686), (48, 30689), (57, 30818), (59, 30830), (64, 30872), (67, 30941), (69, 30962), (81, 31115), (82, 31142), (85, 31160), (89, 31235), (94, 31304), (95, 31307), (96, 31310), (98, 31340), (100, 31400),

Gene: Kerry\_31 Start: 26585, Stop: 28012, Start Num: 2

Candidate Starts for Kerry\_31:

(Start: 2 @26585 has 55 MA's), (9, 26678), (18, 26837), (23, 26882), (26, 26927), (30, 27026), (32, 27035), (35, 27068), (36, 27083), (38, 27140), (42, 27179), (48, 27263), (57, 27392), (59, 27404), (61, 27428), (65, 27458), (81, 27689), (82, 27716), (86, 27761), (88, 27803), (89, 27809), (90, 27812), (93, 27875), (94, 27878), (95, 27881), (96, 27884), (98, 27914), (102, 27986),

Gene: Luthien\_35 Start: 29462, Stop: 30895, Start Num: 2

Candidate Starts for Luthien\_35:

(Start: 2 @29462 has 55 MA's), (6, 29513), (14, 29672), (17, 29708), (23, 29759), (29, 29840), (30, 29903), (32, 29912), (33, 29933), (35, 29945), (38, 30017), (58, 30269), (59, 30278), (60, 30296), (64, 30320), (67, 30389), (81, 30563), (82, 30590), (85, 30608), (89, 30683), (94, 30752), (95, 30755), (98, 30788),

Gene: Madvan\_34 Start: 29246, Stop: 30679, Start Num: 2

Candidate Starts for Madvan\_34:

(Start: 2 @29246 has 55 MA's), (10, 29363), (11, 29375), (14, 29456), (17, 29492), (23, 29543), (29, 29624), (30, 29687), (32, 29696), (33, 29717), (35, 29729), (38, 29801), (39, 29807), (47, 29918), (48, 29921), (57, 30050), (59, 30062), (64, 30104), (67, 30173), (69, 30194), (77, 30314), (81, 30347), (82, 30374), (85, 30392), (89, 30467), (94, 30536), (95, 30539), (96, 30542), (98, 30572), (100, 30632),

Gene: Magel\_32 Start: 26493, Stop: 27920, Start Num: 2

Candidate Starts for Magel\_32:

(Start: 2 @26493 has 55 MA's), (9, 26586), (18, 26745), (23, 26790), (26, 26835), (30, 26934), (32, 26943), (35, 26976), (36, 26991), (38, 27048), (42, 27087), (48, 27171), (57, 27300), (59, 27312), (61, 27336), (65, 27366), (81, 27597), (82, 27624), (86, 27669), (88, 27711), (89, 27717), (90, 27720), (93, 27783), (94, 27786), (95, 27789), (96, 27792), (98, 27822), (102, 27894),

Gene: MajinBuu\_34 Start: 29472, Stop: 30905, Start Num: 2

Candidate Starts for MajinBuu\_34:

(Start: 2 @29472 has 55 MA's), (14, 29682), (17, 29718), (23, 29769), (29, 29850), (30, 29913), (32, 29922), (33, 29943), (35, 29955), (38, 30027), (40, 30039), (58, 30279), (59, 30288), (60, 30306), (64, 30330), (67, 30399), (81, 30573), (82, 30600), (85, 30618), (89, 30693), (94, 30762), (95, 30765), (98, 30798), (100, 30858),

Gene: Mossy\_35 Start: 30659, Stop: 32098, Start Num: 2

Candidate Starts for Mossy\_35:

(Start: 2 @30659 has 55 MA's), (8, 30737), (10, 30776), (13, 30809), (14, 30869), (15, 30896), (30, 31100), (32, 31109), (36, 31157), (37, 31208), (38, 31214), (39, 31220), (46, 31322), (48, 31334), (49, 31340), (51, 31382), (54, 31418), (59, 31475), (69, 31607), (70, 31631), (71, 31649), (72, 31652), (81, 31760), (82, 31787), (89, 31880), (96, 31955), (97, 31973), (98, 31985),

Gene: Mysticmoon\_33 Start: 29280, Stop: 30719, Start Num: 2

Candidate Starts for Mysticmoon\_33:

(Start: 1 @29274 has 3 MA's), (Start: 2 @29280 has 55 MA's), (3, 29286), (8, 29358), (13, 29430), (14, 29490), (16, 29523), (23, 29577), (28, 29643), (30, 29721), (38, 29835), (39, 29841), (46, 29943), (49, 29961), (51, 30003), (54, 30039), (59, 30096), (69, 30228), (70, 30252), (71, 30270), (72, 30273), (81, 30381), (82, 30408), (86, 30453), (89, 30501), (96, 30576), (97, 30594), (98, 30606),

Gene: Nadmeg\_35 Start: 30677, Stop: 32110, Start Num: 2

Candidate Starts for Nadmeg\_35:

(Start: 2 @30677 has 55 MA's), (10, 30794), (11, 30806), (14, 30887), (17, 30923), (23, 30974), (29, 31055), (30, 31118), (32, 31127), (33, 31148), (35, 31160), (38, 31232), (39, 31238), (47, 31349), (48, 31352), (57, 31481), (59, 31493), (64, 31535), (67, 31604), (69, 31625), (77, 31745), (81, 31778), (82, 31805), (85, 31823), (89, 31898), (94, 31967), (95, 31970), (96, 31973), (98, 32003), (100, 32063),

Gene: Nithya\_34 Start: 29461, Stop: 30894, Start Num: 2

Candidate Starts for Nithya\_34:

(Start: 2 @29461 has 55 MA's), (6, 29512), (7, 29524), (14, 29671), (23, 29758), (29, 29839), (30, 29902), (32, 29911), (33, 29932), (35, 29944), (38, 30016), (58, 30268), (59, 30277), (60, 30295), (64, 30319), (67, 30388), (81, 30562), (82, 30589), (85, 30607), (89, 30682), (94, 30751), (95, 30754), (98, 30787),

Gene: NoPickles\_31 Start: 26217, Stop: 27644, Start Num: 2

Candidate Starts for NoPickles\_31:

(Start: 2 @26217 has 55 MA's), (9, 26310), (18, 26469), (23, 26514), (26, 26559), (30, 26658), (32, 26667), (35, 26700), (36, 26715), (38, 26772), (42, 26811), (48, 26895), (57, 27024), (59, 27036), (61, 27060), (65, 27090), (81, 27321), (82, 27348), (86, 27393), (88, 27435), (89, 27441), (90, 27444), (93, 27507), (94, 27510), (95, 27513), (96, 27516), (98, 27546), (102, 27618),

Gene: Odesza\_31 Start: 26585, Stop: 28012, Start Num: 2

Candidate Starts for Odesza\_31:

(Start: 2 @26585 has 55 MA's), (9, 26678), (18, 26837), (23, 26882), (26, 26927), (30, 27026), (32, 27035), (35, 27068), (36, 27083), (38, 27140), (42, 27179), (48, 27263), (57, 27392), (59, 27404), (61, 27428), (65, 27458), (81, 27689), (82, 27716), (86, 27761), (88, 27803), (89, 27809), (90, 27812), (93, 27875), (94, 27878), (95, 27881), (96, 27884), (98, 27914), (102, 27986),

Gene: OhMyWard\_34 Start: 29999, Stop: 31438, Start Num: 2

Candidate Starts for OhMyWard\_34:

(Start: 2 @29999 has 55 MA's), (8, 30077), (13, 30149), (14, 30209), (15, 30236), (17, 30245), (21, 30287), (30, 30440), (31, 30446), (32, 30449), (36, 30497), (37, 30548), (38, 30554), (39, 30560), (46, 30662), (48, 30674), (49, 30680), (51, 30722), (54, 30758), (59, 30815), (69, 30947), (70, 30971), (71, 30989), (72, 30992), (81, 31100), (82, 31127), (89, 31220), (96, 31295), (97, 31313), (98, 31325),

Gene: OlgasClover\_34 Start: 30185, Stop: 31618, Start Num: 2

Candidate Starts for OlgasClover\_34:

(Start: 2 @30185 has 55 MA's), (6, 30236), (14, 30395), (17, 30431), (23, 30482), (29, 30563), (30, 30626), (32, 30635), (33, 30656), (35, 30668), (38, 30740), (40, 30752), (58, 30992), (59, 31001), (60, 31019), (64, 31043), (67, 31112), (69, 31133), (81, 31286), (82, 31313), (85, 31331), (89, 31406), (94, 31475), (95, 31478), (98, 31511), (100, 31571),

Gene: Pepy6\_037 Start: 36697, Stop: 38091, Start Num: 2

Candidate Starts for Pepy6\_037:

(Start: 2 @36697 has 55 MA's), (24, 37033), (27, 37057), (30, 37141), (31, 37147), (35, 37183), (41, 37279), (48, 37375), (49, 37381), (53, 37450), (55, 37483), (56, 37486), (57, 37507), (64, 37564), (66, 37606), (68, 37636), (71, 37684), (75, 37726), (80, 37774), (81, 37777), (83, 37804), (86, 37843), (89, 37891), (90, 37894), (92, 37936), (96, 37966), (98, 37996), (99, 37999),

Gene: Perkunas\_33 Start: 26981, Stop: 28405, Start Num: 2

Candidate Starts for Perkunas\_33:

(Start: 2 @26981 has 55 MA's), (5, 27008), (12, 27128), (17, 27227), (18, 27233), (20, 27245), (23, 27278), (26, 27323), (32, 27431), (35, 27464), (38, 27536), (41, 27563), (42, 27575), (48, 27659), (58, 27791), (65, 27854), (67, 27911), (74, 28010), (81, 28085), (82, 28112), (86, 28157), (89, 28205), (90, 28208), (93, 28271), (94, 28274), (95, 28277), (98, 28310), (100, 28370),

Gene: PerroGrande22\_41 Start: 38050, Stop: 39444, Start Num: 2

Candidate Starts for PerroGrande22\_41:

(Start: 2 @38050 has 55 MA's), (5, 38077), (24, 38386), (27, 38410), (30, 38494), (31, 38500), (33, 38524), (35, 38536), (36, 38551), (46, 38716), (48, 38728), (49, 38734), (52, 38785), (56, 38839), (57, 38860), (62, 38905), (64, 38917), (66, 38959), (69, 39007), (71, 39037), (75, 39079), (76, 39094), (80, 39127), (81, 39130), (83, 39157), (86, 39196), (89, 39244), (92, 39289), (96, 39319), (98, 39349),

Gene: PestoPenguin\_37 Start: 29251, Stop: 30684, Start Num: 2

Candidate Starts for PestoPenguin\_37:

(Start: 1 @29245 has 3 MA's), (Start: 2 @29251 has 55 MA's), (11, 29380), (14, 29461), (17, 29497), (23, 29548), (29, 29629), (30, 29692), (32, 29701), (33, 29722), (35, 29734), (38, 29806), (39, 29812), (40, 29818), (54, 30010), (58, 30058), (59, 30067), (64, 30109), (67, 30178), (69, 30199), (71, 30241), (72, 30244), (81, 30352), (82, 30379), (89, 30472), (94, 30541), (96, 30547), (98, 30577), (100, 30637),

Gene: Petito\_33 Start: 27745, Stop: 29172, Start Num: 2

Candidate Starts for Petito\_33:

(Start: 2 @27745 has 55 MA's), (3, 27751), (13, 27895), (14, 27955), (16, 27988), (30, 28186), (32, 28195), (33, 28216), (34, 28225), (38, 28300), (44, 28387), (46, 28408), (51, 28468), (57, 28549), (59, 28561), (64, 28603), (67, 28672), (73, 28750), (74, 28771), (81, 28846), (89, 28966), (94, 29035), (95, 29038), (96, 29041), (98, 29071),

Gene: Phepper\_34 Start: 29244, Stop: 30677, Start Num: 2

Candidate Starts for Phepper\_34:

(Start: 2 @29244 has 55 MA's), (10, 29361), (11, 29373), (14, 29454), (17, 29490), (23, 29541), (29, 29622), (30, 29685), (32, 29694), (33, 29715), (35, 29727), (38, 29799), (39, 29805), (47, 29916), (48, 29919), (54, 30003), (57, 30048), (60, 30078), (64, 30102), (67, 30171), (79, 30336), (81, 30345), (82, 30372), (89, 30465), (94, 30534), (95, 30537), (96, 30540), (98, 30570), (100, 30630),

Gene: Pherobrine\_33 Start: 29278, Stop: 30717, Start Num: 2

Candidate Starts for Pherobrine\_33:

(Start: 1 @29272 has 3 MA's), (Start: 2 @29278 has 55 MA's), (3, 29284), (8, 29356), (13, 29428), (14, 29488), (16, 29521), (23, 29575), (28, 29641), (30, 29719), (38, 29833), (39, 29839), (46, 29941), (49, 29959), (51, 30001), (54, 30037), (59, 30094), (69, 30226), (71, 30268), (72, 30271), (81, 30379), (82, 30406), (86, 30451), (89, 30499), (96, 30574), (97, 30592), (98, 30604),

Gene: Poco6\_038 Start: 38719, Stop: 40113, Start Num: 2

Candidate Starts for Poco6\_038:

(Start: 2 @38719 has 55 MA's), (5, 38746), (24, 39055), (27, 39079), (30, 39163), (33, 39193), (35, 39205), (36, 39220), (42, 39313), (48, 39397), (49, 39403), (53, 39472), (55, 39505), (56, 39508), (57, 39529), (58, 39532), (62, 39574), (64, 39586), (66, 39628), (69, 39676), (71, 39706), (75, 39748), (78, 39775), (80, 39796), (81, 39799), (83, 39826), (86, 39865), (89, 39913), (92, 39958), (96, 39988), (98, 40018),

Gene: Rickmore\_33 Start: 27895, Stop: 29328, Start Num: 2

Candidate Starts for Rickmore\_33:

(Start: 2 @27895 has 55 MA's), (6, 27946), (10, 28012), (11, 28024), (14, 28105), (17, 28141), (23, 28192), (29, 28273), (30, 28336), (32, 28345), (33, 28366), (35, 28378), (38, 28450), (40, 28462), (48, 28570), (54, 28654), (57, 28699), (64, 28753), (67, 28822), (81, 28996), (84, 29035), (89, 29116), (91, 29140), (95, 29188), (98, 29221), (100, 29281), (101, 29284),

Gene: Roney\_31 Start: 26585, Stop: 28012, Start Num: 2

Candidate Starts for Roney\_31:

(Start: 2 @26585 has 55 MA's), (9, 26678), (18, 26837), (23, 26882), (26, 26927), (30, 27026), (32, 27035), (35, 27068), (36, 27083), (38, 27140), (42, 27179), (48, 27263), (57, 27392), (59, 27404), (65, 27458), (81, 27689), (82, 27716), (86, 27761), (88, 27803), (89, 27809), (90, 27812), (93, 27875), (94,

27878), (95, 27881), (96, 27884), (98, 27914), (102, 27986),

Gene: Runhaar\_34 Start: 29247, Stop: 30680, Start Num: 2

Candidate Starts for Runhaar\_34:

(Start: 1 @29241 has 3 MA's), (Start: 2 @29247 has 55 MA's), (11, 29376), (14, 29457), (17, 29493), (23, 29544), (29, 29625), (30, 29688), (32, 29697), (33, 29718), (35, 29730), (38, 29802), (39, 29808), (47, 29919), (48, 29922), (54, 30006), (57, 30051), (60, 30081), (64, 30105), (67, 30174), (79, 30339), (81, 30348), (82, 30375), (89, 30468), (94, 30537), (95, 30540), (96, 30543), (98, 30573),

Gene: Schwartz33\_35 Start: 29578, Stop: 31017, Start Num: 2

Candidate Starts for Schwartz33\_35:

(Start: 2 @29578 has 55 MA's), (4, 29587), (7, 29641), (10, 29695), (11, 29707), (18, 29830), (19, 29839), (21, 29866), (22, 29872), (25, 29917), (28, 29941), (30, 30019), (33, 30049), (36, 30076), (37, 30127), (38, 30133), (40, 30145), (48, 30253), (49, 30259), (57, 30382), (58, 30385), (59, 30394), (64, 30436), (70, 30550), (71, 30568), (72, 30571), (74, 30604), (77, 30646), (81, 30679), (82, 30706), (87, 30766), (89, 30799), (98, 30904),

Gene: Secretariat\_32 Start: 28312, Stop: 29748, Start Num: 2

Candidate Starts for Secretariat\_32:

(Start: 2 @28312 has 55 MA's), (3, 28318), (6, 28363), (13, 28462), (14, 28522), (17, 28558), (18, 28564), (28, 28675), (32, 28762), (33, 28783), (35, 28795), (36, 28810), (38, 28867), (45, 28966), (46, 28975), (54, 29071), (57, 29116), (59, 29128), (64, 29170), (71, 29302), (72, 29305), (77, 29380), (81, 29413), (89, 29533), (96, 29608), (97, 29626), (98, 29638), (100, 29698),

Gene: ShaggyRogers\_34 Start: 29244, Stop: 30683, Start Num: 1

Candidate Starts for ShaggyRogers\_34:

(Start: 1 @29244 has 3 MA's), (Start: 2 @29250 has 55 MA's), (11, 29379), (14, 29460), (17, 29496), (23, 29547), (29, 29628), (30, 29691), (32, 29700), (33, 29721), (35, 29733), (38, 29805), (39, 29811), (40, 29817), (54, 30009), (58, 30057), (59, 30066), (64, 30108), (67, 30177), (69, 30198), (71, 30240), (72, 30243), (81, 30351), (82, 30378), (89, 30471), (94, 30540), (96, 30546), (98, 30576), (100, 30636),

Gene: SweetCrkHerbs\_33 Start: 26801, Stop: 28078, Start Num: 12

Candidate Starts for SweetCrkHerbs\_33:

(Start: 2 @26654 has 55 MA's), (5, 26681), (12, 26801), (17, 26900), (18, 26906), (20, 26918), (23, 26951), (26, 26996), (32, 27104), (35, 27137), (38, 27209), (41, 27236), (42, 27248), (48, 27332), (58, 27464), (65, 27527), (67, 27584), (74, 27683), (81, 27758), (82, 27785), (86, 27830), (89, 27878), (90, 27881), (93, 27944), (94, 27947), (95, 27950), (98, 27983), (100, 28043),

Gene: Tairn4Wing\_33 Start: 26490, Stop: 27917, Start Num: 2

Candidate Starts for Tairn4Wing\_33:

(Start: 2 @26490 has 55 MA's), (9, 26583), (12, 26637), (18, 26742), (26, 26832), (30, 26931), (35, 26973), (36, 26988), (37, 27039), (38, 27045), (42, 27084), (48, 27168), (57, 27297), (59, 27309), (63, 27348), (65, 27363), (67, 27420), (74, 27519), (81, 27594), (82, 27621), (88, 27708), (89, 27714), (90, 27717), (93, 27780), (94, 27783), (95, 27786), (96, 27789), (98, 27819), (102, 27891),

Gene: Talon44\_32 Start: 26654, Stop: 28078, Start Num: 2

Candidate Starts for Talon44\_32:

(Start: 2 @26654 has 55 MA's), (5, 26681), (12, 26801), (17, 26900), (18, 26906), (20, 26918), (23, 26951), (26, 26996), (32, 27104), (35, 27137), (38, 27209), (41, 27236), (42, 27248), (48, 27332), (58, 27464), (65, 27527), (67, 27584), (74, 27683), (81, 27758), (82, 27785), (86, 27830), (89, 27878), (90, 27881), (93, 27944), (94, 27947), (95, 27950), (98, 27983), (100, 28043),

Gene: Tanis\_31 Start: 26435, Stop: 27862, Start Num: 2

Candidate Starts for Tanis\_31:

(Start: 2 @26435 has 55 MA's), (9, 26528), (18, 26687), (23, 26732), (26, 26777), (30, 26876), (32, 26885), (35, 26918), (36, 26933), (38, 26990), (42, 27029), (48, 27113), (57, 27242), (59, 27254), (61, 27278), (65, 27308), (81, 27539), (82, 27566), (86, 27611), (88, 27653), (89, 27659), (90, 27662), (93, 27725), (94, 27728), (95, 27731), (96, 27734), (98, 27764), (102, 27836),

Gene: TenaciousP\_35 Start: 30901, Stop: 32334, Start Num: 2

Candidate Starts for TenaciousP\_35:

(Start: 2 @30901 has 55 MA's), (14, 31111), (17, 31147), (23, 31198), (29, 31279), (30, 31342), (32, 31351), (33, 31372), (35, 31384), (38, 31456), (40, 31468), (58, 31708), (59, 31717), (60, 31735), (64, 31759), (67, 31828), (81, 32002), (82, 32029), (85, 32047), (89, 32122), (94, 32191), (95, 32194), (98, 32227), (100, 32287),

Gene: Tonaltzin\_36 Start: 29471, Stop: 30904, Start Num: 2

Candidate Starts for Tonaltzin\_36:

(Start: 2 @29471 has 55 MA's), (14, 29681), (17, 29717), (23, 29768), (29, 29849), (30, 29912), (32, 29921), (33, 29942), (35, 29954), (38, 30026), (40, 30038), (58, 30278), (59, 30287), (60, 30305), (64, 30329), (67, 30398), (81, 30572), (82, 30599), (85, 30617), (89, 30692), (94, 30761), (95, 30764), (98, 30797), (100, 30857),

Gene: Trufflozitus\_31 Start: 26491, Stop: 27918, Start Num: 2

Candidate Starts for Trufflozitus\_31:

(Start: 2 @26491 has 55 MA's), (9, 26584), (12, 26638), (18, 26743), (21, 26779), (26, 26833), (29, 26869), (30, 26932), (32, 26941), (35, 26974), (36, 26989), (38, 27046), (48, 27169), (57, 27298), (59, 27310), (65, 27364), (67, 27421), (74, 27520), (81, 27595), (82, 27622), (88, 27709), (89, 27715), (90, 27718), (93, 27781), (94, 27784), (95, 27787), (96, 27790), (98, 27820), (102, 27892),

Gene: Untouchable\_34 Start: 29603, Stop: 31036, Start Num: 2

Candidate Starts for Untouchable\_34:

(Start: 2 @29603 has 55 MA's), (10, 29720), (11, 29732), (14, 29813), (17, 29849), (23, 29900), (29, 29981), (30, 30044), (32, 30053), (33, 30074), (35, 30086), (38, 30158), (39, 30164), (47, 30275), (48, 30278), (57, 30407), (59, 30419), (64, 30461), (67, 30530), (69, 30551), (81, 30704), (82, 30731), (85, 30749), (89, 30824), (94, 30893), (95, 30896), (96, 30899), (98, 30929), (100, 30989),

Gene: Vardy\_34 Start: 29212, Stop: 30645, Start Num: 2

Candidate Starts for Vardy\_34:

(Start: 1 @29206 has 3 MA's), (Start: 2 @29212 has 55 MA's), (11, 29341), (14, 29422), (17, 29458), (23, 29509), (29, 29590), (30, 29653), (32, 29662), (33, 29683), (35, 29695), (38, 29767), (39, 29773), (47, 29884), (48, 29887), (54, 29971), (57, 30016), (60, 30046), (64, 30070), (67, 30139), (79, 30304), (81, 30313), (82, 30340), (89, 30433), (94, 30502), (95, 30505), (96, 30508), (98, 30538), (100, 30598),

Gene: Zeph\_35 Start: 29961, Stop: 31394, Start Num: 2

Candidate Starts for Zeph\_35:

(Start: 2 @29961 has 55 MA's), (10, 30078), (11, 30090), (14, 30171), (17, 30207), (23, 30258), (29, 30339), (30, 30402), (32, 30411), (33, 30432), (35, 30444), (38, 30516), (39, 30522), (47, 30633), (48, 30636), (57, 30765), (59, 30777), (64, 30819), (67, 30888), (69, 30909), (77, 31029), (81, 31062), (82, 31089), (85, 31107), (89, 31182), (94, 31251), (95, 31254), (96, 31257), (98, 31287), (100, 31347),