



Preliminary Ignition Investigation Report

Ignition Database Index:	20241029
Electric Incident Investigation (EII) Number:	N/A
Incident Name:	Horse – 26 Jul 2024
PG&E Facility Ignition?	Yes
CPUC Reportable Ignition?	Yes
Date & Time of Incident:	July 26, 2024, at approximately 1240 hours
Street Address:	3167 Horseshoe Bend Road
City:	Somerset
County:	El Dorado
Latitude/Longitude:	38.61025, -120.714634
State Responsibility Area (SRA) / Local Responsibility Area (LRA) / Federal Responsibility Area (FRA)	State Responsibility Area (SRA)
PG&E Division:	Sierra
High Fire Threat District (HFTD):	Tier 2
High Fire Risk Area (HFRA):	Yes
EPSS Buffer:	N/A
Fire Index Area (FIA):	340
Fire Potential Index (FPI) Rating: FIA	R4
Fire Potential Index (FPI) Rating: Circuit	R5
Was there a PSPS event at the time of ignition?	No
Suspected Initiating Event:	Vegetation
Failure Driver:	Contact from object
Failure Sub-driver:	Contact – Vegetation
Circuit:	Apple Hill 2102
Circuit Protection Zone:	Apple Hill 2102186912
Nominal Voltage:	21kV
Pole SAP Equipment ID:	103036752
Subject to PRC 4292 Veg Pole Clearance:	Yes
PG&E Equipment associated with ignition:	Conductor - Primary
EPSS enabled at time of ignition?	Yes
Fault Type:	Force Out
Wire Down (Primary)?	No
Lead Agency/Agency Having Jurisdiction:	El Dorado County Fire Protection District
Fire Size:	3 meters - 0.25 acres
FAS Field Remarks:	“tree fell on line.”
HAWC Summary:	“Report of a vegetation fire in the area of 3167 Horseshoe Bend Road. Per first unit on scene, the

	fire is approximately 1/2 of an acre burning in grassy oak fuels with a moderate rate of spread. Units on scene are actively engaging the fire now. There are currently no reported outages and no known threat to assets. The nearest asset is the EPSS Enabled Apple Hill 2102 located in the area as reported. Light smoke showing on the Mt Aukum 1 camera. This will be the Horse Incident. Continuing to monitor for additional details.”	
Injuries / Fatalities / Property Damage / Media Attention:	None	
Weather Conditions:	The following weather conditions were observed at 1400 hours near the incident location: ¹ <ul style="list-style-type: none"> • Temperature: 94.0 °F • Relative Humidity: 14% • Wind Speed: 4.9 mph out of the southwest • Wind Gust: 11.7 mph 	
Red Flag Warning (RFW) / High Wind Warning (HWW):	None	
911 Standby Relief Time:	N/A	
OIS #:	2527659, 2527670	
ILIS #:	24-0092509	
FAS #:	0004276303	
TOTL #:	N/A	
Assigned Attorney:	N/A	
Ignition Investigator & Phone:	██████████ ██████████████████ ██████████	██████████ ██████████ ██████████

¹ Per Weather Observation Site 403PG, located approximately two miles southwest of the incident location.

Executive Summary

On July 26, 2024, at approximately 1255 hours, PG&E's Hazard Awareness and Warning Center ("HAWC") identified a vegetation fire in the vicinity of the EPSS-enabled, two-phase Apple Hill 2102 21kV Overhead Distribution Circuit near 3167 Horseshoe Bend Road in Somerset, California ("Incident Location," Figure 1).² Also around this time, the Watch Duty application alerted a local PG&E Restoration Supervisor of the subject vegetation fire. There was no outage on the Apple Hill 2102 in the vicinity of the fire, and the HAWC reported that the fire was 0.5 acres in size³ and burning in grassy oak fuels when it was first identified. The Incident Location was within HFTD Tier 2 and HFRA.

At approximately 1300 hours, the local restoration supervisor notified PG&E Dispatch that he was enroute to the Incident Location and requested additional troubleshooter support. At 1310 hours, PG&E dispatched a troubleshooter to the Incident Location who later requested assistance from a second troubleshooter. By 1337 hours,⁴ the restoration supervisor had arrived to the Incident Location and observed CAL FIRE, the United States Forest Service, and the El Dorado County Fire Protection District ("EDCFPD") suppressing the vegetation fire and a tree canopy ("Incident Tree") leaning on the east phase of a two-phase, north-south-oriented tap span⁵ of the Apple Hill 2102 ("Incident Span," Figure 2). The restoration supervisor requested CAL FIRE and EDCFPD to move away from the Incident Tree and a nearby fence since the conductors were still energized and may have energized the tree. The restoration supervisor also advised them to relocate their hose line away from the Incident Tree and fence.

By 1345 hours, the restoration supervisor requested the first responding troubleshooter ("Troubleshooter #1") open the cutouts at Fuse 21149 (Figure 3) to deenergize equipment at the Incident Location; however, due to traffic and road construction, Troubleshooter #1 was unable to access Fuse 21149, and instead requested that DCC open an upstream device via SCADA. At 1355 hours, the DCC opened Switch (SW) 52195, resulting in an outage for 685 customers and deenergizing the Incident Span.

At 1402 hours, Troubleshooter #1 arrived at the Incident Span. The Incident Tree did not appear to bridge the two phases, and the restoration supervisor and two troubleshooters used a pole saw, hot stick, and rubber gloves to remove the tree from the line. By 1450 hours the PG&E restoration personnel on site had removed the Incident Tree from the line. Troubleshooter #1 did not observe any conductor damage after the tree was removed, and, as such, did not make any repairs nor issue any electric corrective (EC) notifications and informed DCC the Incident Span was safe to re-energize (see Figure 2).⁶ At 1505 hours, DCC closed SW 52195, re-energizing 685 customers.

On July 30, 2024, the PG&E Vegetation Management (VM) visited the Incident Location (Figure 4), evaluated the Incident Tree, and performed an Extent of Condition assessment of trees in the general vicinity of the Incident Location. VM identified the Incident Tree as a Live Oak and determined it was last inspected on March 13, 2024

² According to HAWC, the initial source of information regarding the fire was through Broadcastify, and IRWIN first reported the fire at 1241 hours.

³ Subsequent observations and photographs of the burned area by PG&E's Vegetation Management team indicate the fire size was actually between 3 meters and 0.25 acres.

⁴ Based on "Date Taken" metadata associated with the restoration supervisor's photographs.

⁵ The Incident Span was between the wood poles with SAP ID Nos. 103036752 and 101394067.

⁶ In the right photograph of Figure 2, first responders appear to be working near the tree after it was removed.

and last worked on March 9, 2021 when side pruning was performed. The tree contact location was more than ten feet from the nearest pole (SAP ID No. 103036752), and that pole was not subject to PRC 4292 pole clearing requirements.⁷ VM observed that the tree had multiple stems, and that bark inclusions observed at the break point (Figure 5) likely contributed to the observed splitting at the base of one stem. VM also reported that the Incident Tree had no external indications of damage that would have motivated prior VM inspectors to identify it for removal. The VM Extent of Conditions patrol identified five additional Live Oak trees near the Incident Span that were damaged by heat and fire exposure, four of which were identified for removal, and one of which was identified for radial pruning.

The Apple Hill 2102 21kV circuit was EPSS-enabled at the Incident Location at the time of the incident, and PG&E's Distribution Protection Engineering team determined that contact between the tree and the east phase caused a high impedance fault condition that was not sufficient to cause upstream devices to trip.

System Protection Analysis

Despite having Sensitive Ground Fault (SGF) and Downed Conductor Detection (DCD) settings enabled,⁸ the first two upstream line reclosers (LR 186912 and LR 1532) (Figure 6) did not trip. At approximately 1215 hours, the SGF element on LR 1532 picked up a fault event with a magnitude of 1A and a duration of 70 milliseconds, well below the minimum threshold for SGF and the phase minimum to trip setting.⁹ There is insufficient information to associate this prior fault event with the subject ignition incident. LR 186912 did not record any oscillography events prior to the incident, and no SmartMeter™ partial voltage alarms occurred downstream of the Incident Location.

Ignition Impact

Contact between the Incident Tree and Incident Span caused a high impedance fault condition that ignited ground vegetation, and the ensuing fire burned an area less than 0.25 acres and damaged a fence. The fire was extinguished by the El Dorado County Fire Protection District. Restoration activities caused a sustained outage affecting 685 customers for approximately two hours. The incident did not cause any injuries, fatalities, media reports, or property damage.

Sequence of Events

July 26, 2024

- 1216 hours – Upstream LR 1532 picks up a 1A fault with a duration of 0.07 seconds on the SGF element.
- 1241 hours – Fire is first reported on IRWIN.
- 1242 hours – EDCFPD receives fire alarm for Incident Location¹⁰
- 1246 hours – EDCFPD arrives at Incident Location¹¹
- 1255 hours – HAWC identifies fire via Broadcastify.

⁷ H-type jumper connectors at the top of the pole are exempt equipment.

⁸ SGF settings for LR 186912 and LR 1532 were 15A minimum to trip, with an 18 and 21 second delay, respectively. Only LR 1532 had DCD capabilities.

⁹ 340A with an 80 millisecond delay.

¹⁰ EDCFPD Fire Report #09012

¹¹ Ibid.

- 1300 hours – Restoration Supervisor notifies dispatch that he is enroute to the Incident Location and requests troubleshooter support.¹²
- 1310 hours – Troubleshooter #1 is dispatched to the Incident Location.¹³
- 1345 hours – At the direction of the Restoration Supervisor on-site, Troubleshooter #1 requests and receives advanced DCC authorization to open cutouts at Fuse 21149 due to anticipated communication issues at the fuse location.¹⁴
- 1350 hours – Troubleshooter #1 reports difficulty reaching Fuse 21149 due to traffic and requests Rocklin DCC open upstream device via SCADA instead.¹⁵
- 1355 hours – DCC opens SW 52195 via SCADA, deenergizing 685 customers.
- 1450 hours – Troubleshooter #1 reports to DCC that the Incident Tree was removed and that the line is safe to re-energize.¹⁶
- 1505 hours – DCC closes SW 52195, re-energizing 685 customers.
- 1520 hours – Troubleshooter #1 reports to DCC that the fire was approximately 0.5 acres and only damaged a fence.^{3,17}

Corrective Notification Associated with Ignition

PG&E personnel who responded to the fire reported that the tree did not damage the conductors or equipment on supporting poles, and, as such, did not issue any EC notifications.

Pending Work

Type	Number	Description	Priority	Date Identified	Due Date
EC Notification	N/A	-	-	-	-
COE Notification	N/A	-	-	-	-
LC Notification	N/A	-	-	-	-
Veg Work Order	N/A	-	-	-	-

Please note this may not include pending major program or project work at the Incident Location.

Asset Info & Most Recent Inspections and Tests

Source Side Structure	103036752	
Info / Inspection	Most Recent Date	Findings
Install Date:	1985	45 Foot Wood Pole

¹² NICE Recorder Call ID 6114771.

¹³ Per FAS 0004276303.

¹⁴ NICE Recorder Call ID 2802977.

¹⁵ NICE Recorder Call ID 2803010.

¹⁶ NICE Recorder Call ID 2803243.

¹⁷ NICE Recorder Call ID 2803304.

Inspection:	June 12, 2021	<p>“No vegetation issues or compelling abnormal conditions to report for the EC in accordance with GO165, GO95, PRC 4292, and PRC 4293.”</p> <p>“High sign missing, broken, or illegible (backwards/upside down)”¹⁸</p> <p>“Third party utility infraction at this location”¹⁹</p>
Patrol:	-	-
Corrective History:	-	-
Aerial Inspection Records:	July 22, 2024	<p>“POLE IS SHOWING SIGNS OF DECAY HAS WOODPECKER DAMAGE HARDWARE IS SINKING INTO POLE AND TOP IS SPLITTING”</p> <p>“HIGH VOLTAGE SIGNS NEED REPLACED”</p>
VM Inspection:	March 13, 2024 March 3, 2021	No work prescribed. Prescribed side trimming work (performed on March 9, 2021).
EVM Inspection:	-	-
Equipment Test:	-	-
Pole Intrusive Test:	September 1, 2022	<p>“Shell Rot/Decay”</p> <p>“Calculated Strength 93.98%”</p> <p>“Inspection Result Fail: Reinforce”</p>
WSIP Inspection:	-	-

Load Side Structure	101394067	
Info / Inspection	Most Recent Date	Findings
Install Date:	1985	45 Foot Wood Pole
Inspection:	June 12, 2021	“No vegetation issues or compelling abnormal conditions to report for the EC in accordance with GO165, GO95, PRC 4292, and PRC 4293.”
Patrol:	-	-
Corrective History:	-	-
Aerial Inspection Records:	August 6, 2024	<p>“WOODPECKER DAMAGE AND DECAY”</p> <p>“REPLACE CUTOOTS AND LIQUID FUSES”²⁰</p>
VM Inspection:	-	-
EVM Inspection:	-	-
Equipment Test:	-	-

¹⁸ An EC notification was issued and completed to correct this condition.

¹⁹ A third party notification was issued for a missing third-party guy wire marker and is still pending completion.

²⁰ An EC notification was issued for this condition (the notification is pending but the inspection occurred after the incident).

Pole Intrusive Test:	September 10, 2022	"Shell Rot/Decay" "Calculated Strength 97.86%" "Inspection Result Fail: Reinforce"
WSIP Inspection:	May 3, 2019	"There were no Compelling abnormal conditions for the Pole, equipment, and its associated spans."

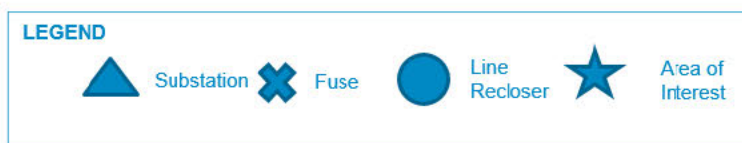
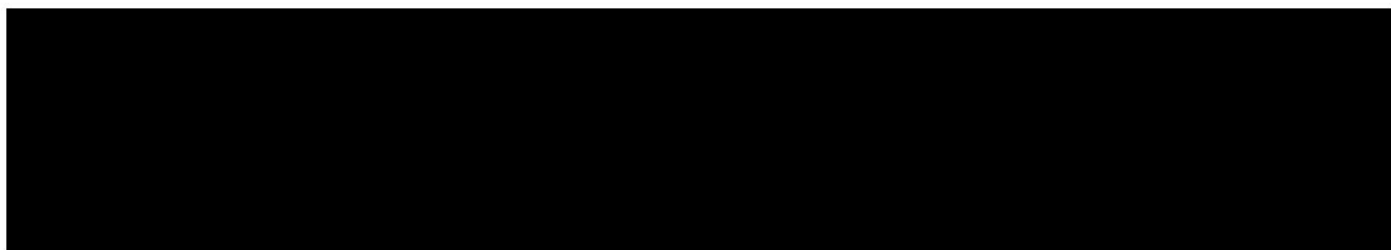
Hazard Barrier Analysis:

Hazard	Vegetation Contact	Sub-Hazard	Fallen Tree
Target	Tree contact with primary overhead conductors in a Tier 2 HFTD and HFRA leading to 0.25-acre ignition.		
Barrier	Expected vs. Observed Performance	Why did the barrier not prevent the ignition event? (See ICF Codes)	Opportunity
Barriers that were Assessed as Opportunities			
Covered Conductor on Primary Conductors Document 015195, TD-9100B-009	Expected Performance: Lower risk of ignition due to tree contact. Observed Performance: Barrier did not exist	A4B2C1D2 – Program limited to certain conductors	Use of covered conductor may have reduced ignition potential when branch contacted line.
Gridscope	Expected Performance: Detect tree on line using acoustic sensors. Observed Performance: Barrier did not exist	A4B2C1D2 – Program limited to certain conductors	System may have identified tree contact and enabled faster response and may have limited the ignition.

Potential Next Steps / Associated CAP Items:

No next steps were identified as a result of this investigation.

Single Line Diagram



Photos and Diagrams of Events

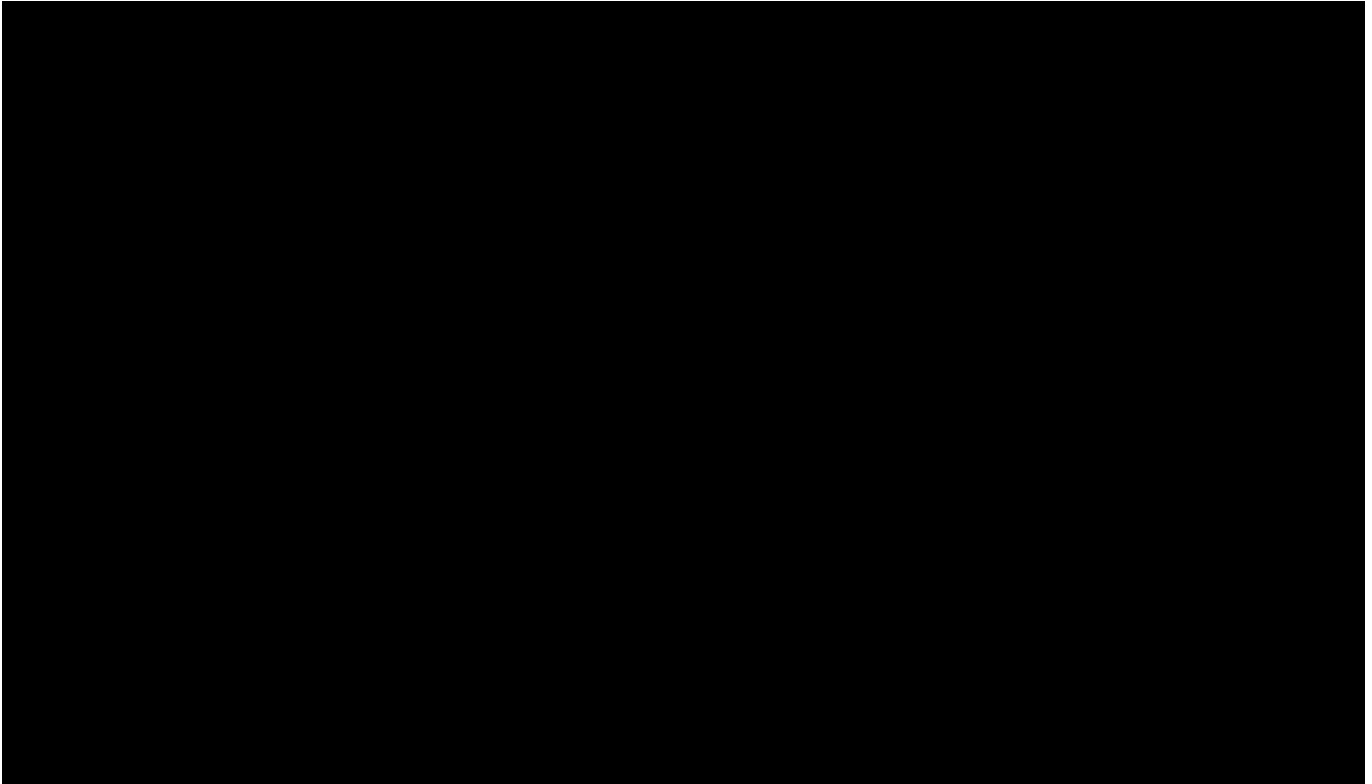


Figure 1. Incident Location (indicated by yellow pin) and nearby PG&E poles supporting the Apple Hill 2102 circuit.



Figure 2. Photograph taken at approximately 1340 hours depicting the Incident Tree branch in contact with the east phase (left, indicated, looking east), and photograph taken at approximately 1505 hours after the Incident Tree (right, looking north) had been removed by the troubleshooter.

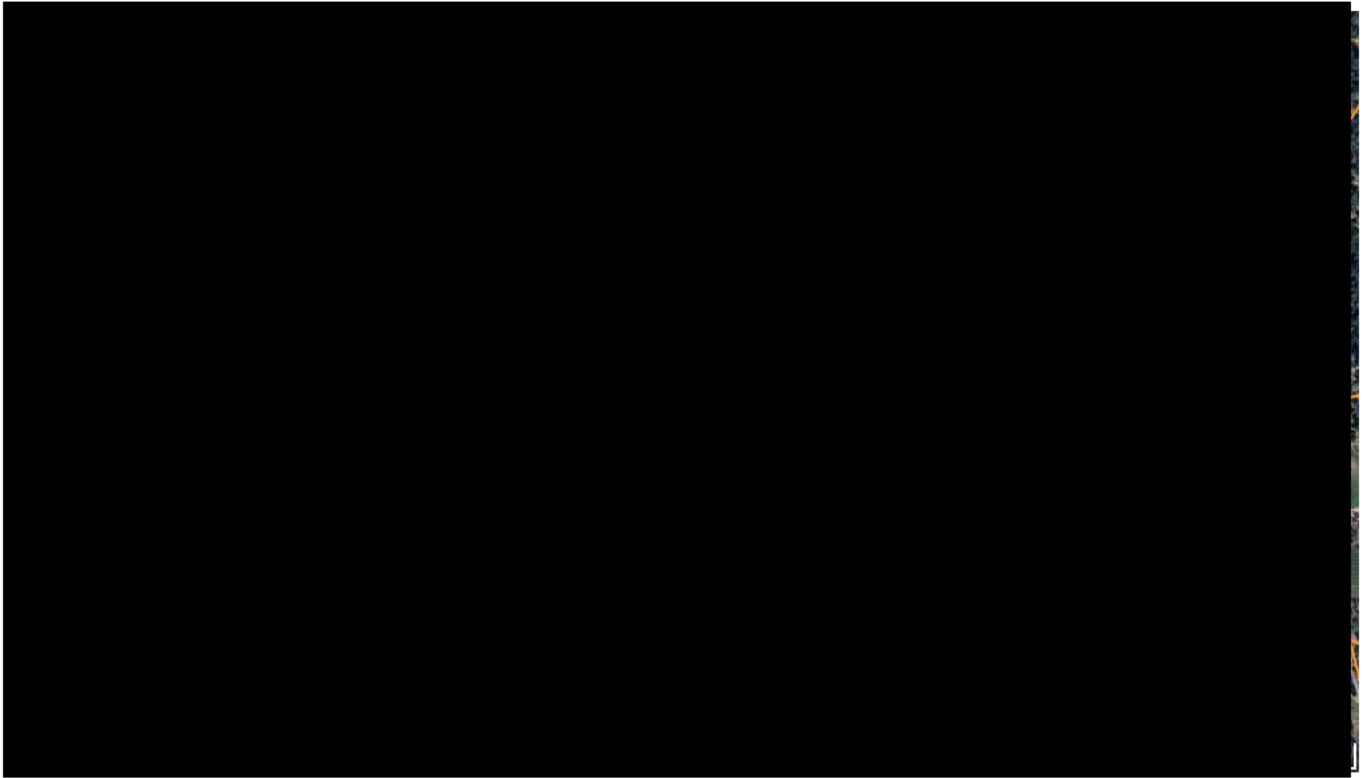


Figure 3. Locations of Fuse 21149 and Switch 52195 (indicated by pins) relative to the Incident Location.



Figure 4. VM photograph of the Incident Tree (indicated, red arrow) relative to the circuit, taken on July 30, 2024, looking south.



Figure 5. VM photograph of bark inclusions at the split stem.

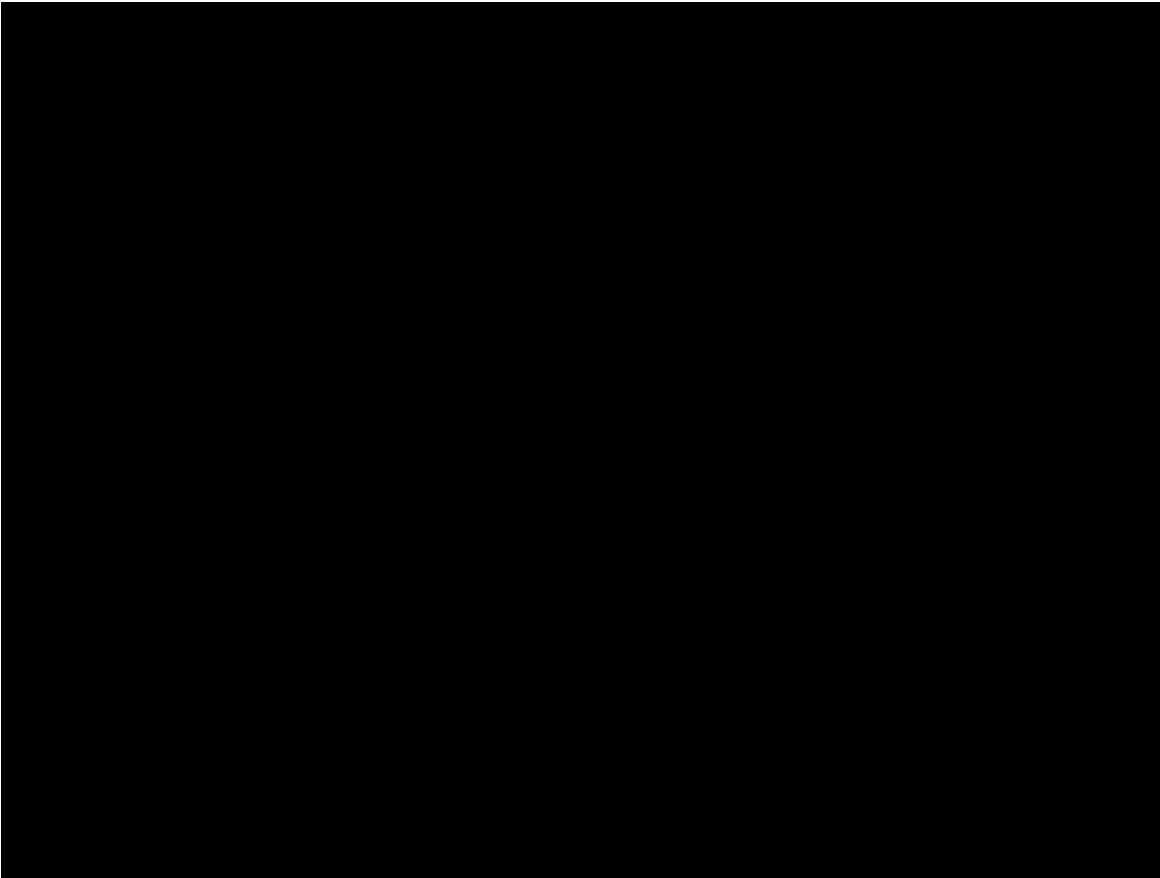


Figure 6. Locations of LR 186912 and LR 5132 (indicated by pins) relative to the Incident Location (Note that the Apple Hill 2102 circuit is indicated by yellow lines).

Attachments

The ESA folder below contains attachments and references related to this incident:

[Redacted]
[Redacted]

-----END of REPORT-----