

BUREAU OF INDIAN AFFAIRS

WILDLAND FIRE ORIGIN AND CAUSE

INVESTIGATION HANDBOOK

90 IAM 6-H



Bureau of Indian Affairs
Office of Trust Services
Division of Forestry and Wildland Fire Management
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FOREWORD

This handbook establishes the standards, requirements, and procedures required to implement Indian Affairs' (IA) policy on wildland fire origin and cause investigations on Indian lands, as documented in 90 IAM 6: Wildfire Investigation. This handbook supersedes 90 IAM 1.4 C (10)-H: National Wildfire Investigations Handbook, issued 9/28/2012, and all policies and procedures related to IA wildfire investigations that may have been created and/or distributed throughout IA previously.

Although this handbook is intended primarily for forestry and wildland fire professionals and managers who administer the forestry and wildland fire programs, it may also be informative for IA employees and Tribes.



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Director, Bureau of Indian Affairs

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Date

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Chapter 1: Overview

Wildfire investigations in Indian Country range from simple brush fires to very destructive fires involving significant issues, including loss of life, homes and other property, and cultural and natural resources, as well as trespass and complex civil or criminal litigation. Every fire scene must be considered a possible crime scene until clear proof is found that the cause was either accidental or natural.

A wildland fire origin and cause investigation is based on a systematic approach and a standard methodology. This approach and methodology facilitate the documentation of unbiased facts through interaction with people, assessment of physical objects, and the competent use of science and technical skill, along with professional preparation in meeting strict administrative and/or legal mandates. A wildland fire origin and cause investigation must also be a team effort; it is a blend of fire service and law enforcement personnel. Without close cooperation, investigative success is impossible.

The reasons for wildland fire origin and cause investigations include:

- determining the origin and cause of wildfires;
- identifying responsible parties;
- documenting ownership responsibility for the wildfire;
- documenting causes for statistical reporting and analysis;
- determining whether there is evidence that a crime has been committed;
- providing supporting documentation when litigation is necessary (25 CFR §163.1 and §166.8); and
- improving prevention program planning.

Identifying the correct cause category and specific cause of a wildfire is an important task that should never be taken lightly. This information is used both statistically and strategically by the wildland fire management organization and by the prevention program to design mitigation strategies for the local unit.

1.1 Purpose

This handbook establishes the standards, requirements, and procedures to implement the policy on wildland fire origin and cause investigations on Indian lands as documented in 90 IAM 6: Wildfire Investigation. Specifically, it addresses the complicated jurisdictional issues in Indian Country associated with wildfires, the investigation process as it relates to wildfire trespass, and the importance of coordination with law enforcement agencies. It also establishes national Bureau of Indian Affairs (BIA) wildfire investigation documentation requirements from the initial response through the litigation process, and the guidance and qualifications information required to support the credibility of a Wildland Fire Origin and Cause Investigator (INVF) when called to testify as an “expert witness”.

As a source of technical guidance, it is important that this handbook maintain some of the scientific, technical, and legal terms that have specific meaning to the intended readers. An effort has been made to reduce the number of these terms; however, it is important to the credibility of the handbook to use the correct term when it is widely used by wildland fire management and law enforcement professionals.

The information contained herein is not all-inclusive, but it provides guidance based on the knowledge and many years of experience of both the BIA Branch of Wildland Fire Management (BWFM) and the BIA Office of Justice Services (OJS) personnel. In this handbook, the term “wildland fire origin and cause investigation” is used interchangeably with “wildfire investigation” for the sake of flow and clarity.

The following documents are incorporated by reference in this handbook. For convenience and consistency, these documents are located online at:

<https://www.bia.gov/bia/ots/dfwfm/bwfm/wildfire-prevention-and-education/prevention-resource-library>

- BIA Wildfire Investigator Code of Conduct Agreement
- Wildfire Investigation Field Report Template
- Evidence Log Template
- Voluntary Statement Template
- Photo Log Cover Sheet
- Photo Log Template
- Wildland Fire Origin and Cause Determination Report Template
- Wildfire Investigation Team Closeout Report Template
- Delegation of Authority Template

Chapter 2: Wildfire Investigation Standards and Procedures

BIA policy requires a determination of origin and cause for all wildfires occurring on jurisdictional lands. The wildland fire origin and cause investigations conducted in Indian Country will follow the standards, operational procedures, and guidance set forth in this chapter. These standards, procedures, and guidance are based on the National Wildfire Coordinating Group (NWCG) Wildland Fire Origin and Cause Determinations (FI-210) course, the NWCG Guide to Wildland Fire Origin & Cause Determination, Publication Management System (PMS) 412, April 2016 (referred to as the NWCG PMS 412), and the Federal Bureau of Investigation (FBI) Handbook of Forensic Service, 2013 edition. Any of these sources should be referred to for specifics not covered in this handbook. The National Fire Protection Association (NFPA) 921 Guide for Fire Investigations may also be used for additional guidance.

2.1 Scene Protection and Preservation Standard

The standard is for the first responders to identify, preserve, and protect the general origin area (GOA) at the incident scene to the extent possible. A key to success in any wildfire investigation is the level of protection and preservation of the scene by the first responders. Since INVFs do not normally arrive on scene with the first responders, preservation and protection of the GOA becomes their responsibility.

2.1.1 Scene Protection

Proper investigative procedure begins with the first units arriving at the scene. First responders, both fire and law enforcement, play an important role in protecting evidence, so it is important for all first responders to receive training in identifying and protecting the GOA of the fire. The NWCG course, FI-110, Wildfire Observations and Origin Scene Protection for First Responders, should be a priority for all first responders.

It is important that first responders understand how their actions, both during and following suppression, enable the INVf to accurately determine the origin and cause. The first responders must exercise a high level of precaution and awareness to identify, protect, and secure the GOA, including:

- Documenting the fire perimeter upon arrival.
- Protecting the GOA with flagging or rope.
- Minimizing suppression activities in the GOA.
- Parking vehicles in another area to prevent evidence destruction.
- Allowing only authorized personnel into the GOA.
- Preservation of any tire or foot impressions.
- Taking photographs of the fire upon arrival.
- Leaving all potential evidence undisturbed.
- Requesting law enforcement support as needed.

First responders must protect and maintain the integrity of the scene until law enforcement or the INVf arrives in order to maintain the chain of custody. In extreme situations where there is a lack of personnel or law enforcement available, evidence may be collected and maintained by first responders. Documentation of these actions is required.

2.2 First Responder Observations Standard

The standard is for first responders to document their observations upon arrival at the fire scene. This includes but is not limited to:

- Witness identification
- Weather observations
- Fire behavior
- Individuals/vehicles leaving the area

2.3 Wildland Fire Origin and Cause Investigation Procedural Standards

This section establishes national standards and procedures for wildland fire origin and cause investigations in Indian Country, and is based on guidance contained in the NWCG PMS 412, Chapter 2. These standards and procedures assist the INVf in making rational and defensible decisions about authority, responsibility, scene processing, and case handling. The intent is to guide the INVf and the Law Enforcement Officer (LEO) in sorting out the appropriate actions to take in various ownership situations. Local units may supplement these requirements with additional procedures and policies.

The standards for all wildland fire origin and cause investigations on Indian lands are as follows: investigations are to be conducted using a *systematic approach*, applying the *scientific method*, and using a *standard methodology*. The investigation includes the documentation of unbiased facts through the competent use of science, technical skill, and experience to determine the origin and cause of the wildfire. It may also include interaction with people and assessing physical objects within the wildfire scene. Failure to adhere to professional standards in preparing and documenting the findings of the origin and cause investigation may subject the INVf's methods, competence, and qualifications to attack by a defense attorney, which could result in loss of credibility, exclusion of testimony, and other adverse legal consequences.

2.3.1 Systematic Approach

Using a *systematic approach* ensures that all of the steps in the scientific method are followed. According to the NWCG PMS 412, a systematic approach includes the orderly, thorough, methodical, and regular (systematic) application of practices, procedures, and techniques (methods) specific to the investigation of wildland fires. There exists more than one systematic approach to fire investigation.

Following the procedures in the NWCG PMS 412 will improve the probability of reaching sound conclusions. All wildfire investigations will be conducted in a manner that adapts the

investigation to fit the circumstances. Deviations from these procedures are not necessarily wrong or inferior, but they do need to be justified. The systematic approach recommended by the NWCG is the application of the *scientific method*.

2.3.2 The Scientific Method

The *scientific method* was not designed specifically for the investigation of wildland fires, or for that matter, the investigation of any crime or violation. Therefore, it may not be a perfect fit for all types of investigations but provides a framework for problem solving to which appropriate methods can be applied. The scientific method does not exclude the use of methods regularly used and accepted in law enforcement investigations.

According to the NWCG PMS 412, the steps from the scientific method that apply to a wildland fire origin and cause investigation are:

1. **Recognize the need:** In this case, a wildland fire has occurred and the cause must be determined and documented to identify potential responsible parties and focus future prevention efforts.
2. **Define the problem:** Having determined that a wildland fire has occurred, the wildland fire investigator should define how the problem can be solved. In order to determine cause, an origin investigation must be conducted first. Then the cause can be identified.
3. **Collect data:** Facts (empirical data) about the fire are collected. This does not include rumor, conjecture, or speculation. This includes an examination and processing of the scene, consideration of the fire behavior context, interviewing witnesses or other knowledgeable persons, collection of physical evidence, and the results of scientific research. Data collection starts upon dispatch. Data collection and analysis often take place at nearly the same time and at all stages of the investigation.
4. **Analyze the data:** Prior to using the collected data to form a hypothesis, an analysis for reliability should take place to assure that it is factual and verifiable (empirical data). Data collection may continue during this process, leading to the need for further analysis. The process of empirical data analysis continues as new data is received, validated, and compared to existing working hypotheses. The analysis portion of the systematic process assists the wildland fire investigator in forming working hypotheses by avoiding speculation and conjecture.
5. **Develop working hypotheses:** Based on the data analysis, the wildland fire investigator produces one or more working hypotheses that explain all of the known data regarding the origin and cause of the fire. These working hypotheses should be based solely on the empirical data that the wildland fire investigator has collected. If more than one working hypothesis can fit all the data, it may be an indication that further data should be sought in an effort to come to a final single hypothesis.

6. **Test the hypothesis:** For a hypothesis to be valid, it has to be able to be tested and to withstand such tests without it being rejected. A hypothesis developed without supporting empirical data is not a valid hypothesis. Testing is conducted by comparing all of the empirical data (facts) and applicable scientific research in an effort to see if any of the hypotheses can be rejected. If any hypothesis cannot withstand this examination, it should be discarded, and a new hypothesis should be developed and tested. This development and testing may include the collection of new data or the re-analysis of existing data. All feasible hypotheses should be tested in this manner. If no hypothesis withstands the testing process, the cause should be considered “undetermined” at that time.
7. **Select the final hypothesis:** If only one hypothesis withstands testing, typically that hypothesis becomes the final hypothesis. When two or more hypotheses withstand testing, the wildland fire investigator must determine if the facts support one hypothesis to be probable, over others that are just reasonably possible. There are two levels of certainty, Possible and Probable:

Possible: Hypothesis is feasible but not to the level of Probable.

Probable: The likelihood the hypothesis is true is greater than 50%.

If two or more hypotheses are equally likely, then the level of certainty must be *Possible* for both.

2.3.3 Standard Methodology

A *standard methodology* is needed to implement the systematic approach. Although each wildfire investigation is unique, following a standard methodology ensures that all steps in the investigative process are at least considered. It is recognized that not every step of this process may be needed for every investigation; however, each step will need to be considered. In some investigations, additional steps may be needed. Following this standard methodology ensures that the *scientific method* is being followed and a *systematic approach* to wildfire investigations has been applied.

This standard methodology is based on the process taught in the NWCG FI-210 Wildland Fire Origin and Cause Determination training course, and works with the Fire Investigation Field Notes. Refer to the NWCG PMS-412 for additional technical details and discussions for each step.

A. Before the Dispatch

1. The investigation kit should be stocked, tools cleaned, and any electronic devices should be charged. The kit should be sealed to avoid tampering.
2. Ensure the memory storage unit for digital cameras is clean. Check the date and time stamps on the cameras and reset the numbering sequence.

B. Upon Dispatch

1. Record the name and title of the person assigning the dispatch.
2. Record the date and time of the dispatch.
3. Record the name of the fire, FireCode (if available), Incident Number, and the location of the fire.
4. Record the name and contact information for the Initial Attack Incident Commander (IAIC) or other official (for cold case investigations).
5. Record the radio frequency, if not pre-assigned.
6. Obtain and record any additional information the dispatching office has about the fire, such as:
 - a. Method by which the fire was reported.
 - b. Name and contact information of person reporting the fire.
 - c. Contact information for the jurisdictional law enforcement agency.
 - d. Any known special safety concerns, unique circumstances or events.
 - e. If needed, obtain a copy of a resource order.
7. Provide the dispatch office with an estimated time of departure and arrival at the scene.
8. Start the Wildfire Investigation Field Notes for the investigation.

C. En Route to the Fire

1. Observe any smoke columns. Record the direction and rough angle of the column. Record its color and any changes to the smoke column as you approach the scene.
2. As you near the scene, observe any vehicles departing. Attempt to obtain their license tag numbers. If license tag numbers are obscured or otherwise difficult to observe, record the make, model, color, and approximate year of the vehicle. Record a description of the driver and any passengers. Record an estimate of the relative speed and direction of their departure.
3. Observe any witnesses or possible witnesses as you approach the fire. Attempt to obtain license tag numbers or good descriptions of vehicles, occupants, and any persons standing in the area. Consider photographing any bystanders and vehicles in the vicinity of the suspected origin.

D. Upon Arrival at the Fire

1. Record the date and time of arrival.

2. Check in with the IC or other assigned personnel. Ask:
 - a. How to contact the “first on scene”.
 - b. If weather observations were taken by first responders (if not taken by first responders, take weather readings as soon as possible).
 - c. The location of the GOA, if identified, and if it has been protected.
3. Locate the GOA and secure it.
4. Create and photograph the Photo Log Cover Sheet and start the Photo Log.
5. Record the names and roles of any firefighters present around the GOA. Interview the “first on scene”.
6. Interview any witnesses present at the scene, or have them fill out a voluntary witness statement, or collect their witness information for law enforcement follow-up.
7. Record information about the wildfire environment on the Wildfire Investigation Field Notes.
8. Verify the ownership of the GOA.
9. Photograph the GOA from at least two directions and begin the photograph log.
10. Size up the GOA by walking around its perimeter at least twice, once in each direction. Identify indicators of spread in the GOA, and any physical evidence outside the GOA.
11. Flag, log, and photograph any physical evidence. Ensure it is protected and contact law enforcement to collect the evidence. If law enforcement is not available, properly collect and preserve the evidence until it can be transferred to law enforcement. When evidence is found, begin the evidence log. When evidence is collected, begin the chain of custody form.
12. Enter the GOA in the advancing fire spread lane with the general direction of spread to your back. Work from left to right and right to left, from the area of more intense burning to the area of less intense burning. Use the transition zones for lateral spread as boundaries to turn from. Flag and photograph important spread indicators as you work towards the specific origin area (SOA). Use red pin flags for advancing fire indicators, yellow pin flags for lateral fire indicators, blue flags for backing fire indicators, and white flags for evidence.
13. Once the SOA is identified, secure it, photograph it, and establish a lane search pattern and reference points. Work into the direction of spread. Photograph search lanes before and following each search. Visually inspect each lane using a magnifying lens. Run a magnet through each search lane after it is visually inspected. Continue to flag and photograph evidence and fire spread indicators.

14. Once the Ignition Area is reached, protect it, photograph it, and flag its corners or perimeter with lime green pin flags. Search it visually under magnification for any evidence present. Run a magnet lightly over the area. If evidence is found, flag it, photograph it, and protect it until law enforcement can collect it.
15. Continue to search the SOA for a minimum of two lanes beyond the Ignition Area. Flag and photograph spread indicators and any additional evidence found in these lanes.
16. Develop a working hypothesis.
17. Test the hypothesis by methodically eliminating each possible cause category, based on the findings of the field examination, until one category is left. If possible, establish the final hypothesis; if that's not possible, then reexamine the scene, witness statements, and evidence. If there remains more than one hypothesis, determine what additional data is needed at the scene or from other sources.
18. Establish the latitude and longitude of the Ignition Area using a Global Positioning Satellite (GPS) Receiver.
19. Establish a baseline; then, using the right angle transect method, measure the distances and directions to the indicators, evidence, and Ignition Area. Record these measurements using the gridded sheet in the Wildfire Investigation Field Notes set, to create a sketch map of the scene.
20. Photograph selected indicators and the overall scene after the field investigation with pin flags in place. Photograph enough fire pattern indicators to document the investigation. The recommendation is to photograph at least one representative indicator for each category of fire pattern indicators used. Complete the photo log.

E. Prior to Departure

1. Complete the Wildfire Investigation Field Notes and recheck to verify all of the needed information has been recorded. Be sure to record the date and time of departure.
2. Remove the pin flags and other flagging used. Collect all of the investigation tools. Clean them and restock the investigation kit.
3. Secure the Wildfire Investigation Field Notes in a large envelope with the name of the fire and the date of the investigation.
4. If the investigation indicates criminal activity, discuss the timeline and disposition of the final report with law enforcement, if present. If not present, get in touch with the jurisdictional law enforcement agency as soon as possible following the investigation.
5. Consider posting "reward" posters if the general cause is incendiary and the responsible party is unknown.

F. Upon Departure

1. Check out with the Incident Commander (IC) or other appointed official.
2. Report back to dispatch that you are departing the scene.
3. Proceed back to the station or to the next investigation.

G. Upon Return to Station

1. Check in with dispatch.
2. Gather dispatch records.
3. Complete the Wildland Fire Origin and Cause Investigation Report. Make a copy for law enforcement or provide the original to the Line Officer as indicated.
4. Coordinate with the IC or Fire Management Officer (FMO) to correctly record the origin, cause category, specific cause, and dispatch information. This is a critical step. The IC or FMO typically generates the Wildland Fire Report, which is an official record. It is critical that the Wildland Fire Report and the Wildland Fire Origin and Cause Investigation Report both contain the same information about the wildfire in order for the prosecution of any wildfire investigation to be successful. Further, prevention and mitigation strategies are also dependent on reliable origin and cause data.
5. Check the contents of the investigation kit, clean it, and re-supply it.
6. Recharge digital devices and prepare them for the next investigation.

Any activities beyond this, such as suspect interviewing/interrogation, surveillance of persons of interest, search warrants, arrest warrants, collection of evidence beyond the fire scene, and so forth are exclusively the responsibility of an LEO. The INVF is **not authorized** to participate in these activities and **must not** do so. Additionally, the INVF must recognize that their role ends with the filing of the Wildland Fire Origin and Cause Investigation Report with the jurisdictional authority (or Line Officer for trespass). The decisions to press charges, issue warrants or citations, or pursue damages are the responsibility of law enforcement and/or the Line Officer.

2.4. Authority to Investigate and Jurisdictional Priorities

BIA and/or Tribal INVFs have the authority to investigate the origin and cause of those wildfires that originate on Indian lands under the jurisdiction of their BIA Agency or Tribe. Wildfires that originate on non-Indian lands and burn on to Indian lands may be investigated with the permission of the jurisdictional authority and landowner. Cooperative agreements may also provide the INVF the authority to operate on lands outside the jurisdiction of the BIA. INVFs must become familiar with all agreements that exist within the area where they are working and establish solid working relationships with all cooperators.

When multiple fires occur in an area, the INVF may be faced with deciding which ones have priority. The standard for priorities for all BIA and/or Tribal wildfire investigations, based solely on jurisdiction established by ownership at the origin, are in the following order:

1. Wildfires originating on Indian land.
2. Wildfires originating on non-Indian land that burn onto Indian land.
3. All other wildfires. (Note: Wildfire investigations on non-Indian lands must be authorized through a cooperative agreement with the jurisdictional authority or in response to a resource order placed by the jurisdictional authority.)

2.4.1 Delegations of Authority

The standard is for INVFs to have a delegation of authority when they are not working within their region's chain of command. The INVF must obtain a formal delegation of authority, outlining the requirements, limitations, and objectives of the activation. This delegation of authority should also contain clear instructions on any safety precautions, work schedule expectations, closeout reports, disposition of case files, and storage of evidence for the assignment. It should be signed by someone having the authority to delegate. When the INVF is working in a different BIA region, the Regional Director or a Deputy has that authority. When assisting a cooperator or responding to a resource order, the requesting entity will need to decide who has the authority.

It is a regional determination as to whether or not a delegation of authority is needed for INVFs working off of their BIA Agency or Tribal jurisdiction, but still within the region. A delegation of authority template has been provided on the Investigation Resources page: (<https://www.bia.gov/bia/ots/dfwfm/bwfm/wildfire-prevention-and-education/prevention-resource-library>).

2.5 Origin and Cause Determination

An origin and cause *determination* will be conducted on every wildfire occurring on Indian lands either by initial attack resources or by an INVF. Upon arrival at the fire scene, the IAIC has the responsibility to secure the GOA, and make the origin and cause determination if an INVF is not present. This type of determination of origin and cause is based on the IAIC's or FMO's experience and the circumstantial evidence.

An origin and cause determination made by an INVF is based on an investigation. It has a higher degree of confidence and reliability than the IAIC or FMO's determination; therefore, it supersedes their determination as the *official* origin and cause determination. An INVF's determination is required for all wildfires that meet at least one of the criteria below:

- Damage to or destruction of real property (structures and other improvements);
- Trespass damages to natural or agricultural resources;
- Loss of, or serious injury to, domestic livestock;

- Personal injury requiring medical treatment or fatality;
- Vehicular loss, damage, or accident;
- Potential for litigation;
- Juvenile fire setting is apparent;
- A history of serial arson is present on the unit or is suspected; or
- Criminal activity is involved.

The BIA Agency Superintendent, BIA Agency, Tribal, or Regional FMO may also require that any wildfire be investigated for origin and cause, regardless of the IAIC's decision.

If an INVF has been requested, the IAIC will establish a chain of custody to protect and secure the GOA, as well as any potential or suspected evidence, until it can be transferred to the INVF or the LEO.

2.6 Wildland Fire Origin and Cause Investigation Report Standard

The standard for the Wildfire Origin and Cause Investigation Report (Report) is to effectively communicate the findings, observations, methodologies, analyses, and the final wildland fire origin and cause determination. An INVF (or trainee) must complete this report for all wildland fire origin and cause investigations.

In wildfire incidents where criminal activity or wildfire trespass is identified, the Report will become a supplemental report to the law enforcement case or trespass report. The decision to release a Report must be made by law enforcement or the Line Officer. The INVF does not have the authority to release a copy of the Report other than at law enforcement or the Line Officer's direction.

INVFs must treat the Report as a sensitive and confidential law enforcement document as it may contain information such as suspect and witness personal data. Both Freedom of Information Act (FOIA) and Privacy Act requirements must be met prior to the distribution of any information regarding these incidents. As a safeguard, Line Officers should consult with law enforcement and the FOIA Coordinator and/or Privacy Officer prior to releasing information contained in the Report.

2.6.1 Wildland Fire Origin and Cause Investigation Report Contents

The Report's content needs to be as concise as possible while providing enough information to support the findings. At a minimum, the report must contain the following:

- **Confidential Cover Page** – A standard report cover with a statement about the confidentiality of the contents.
- **Wildfire Investigation Information Page** – This is basic information about the circumstances of the fire (time, date, fire name, location, and author).

- **Investigation Summary** – A narrative that describes the investigation chronologically from beginning to conclusion. It should be detailed enough that a reader can understand how the investigation unfolded and how the conclusion was reached. The narrative section of the report can be organized in the following format to aid in the chronological documentation of the complete investigation:
 1. Call and Response.
 2. Arrival on Scene.
 3. Methodology/Data Collection.
 4. Data Analysis and Application.
 5. Working Hypotheses Development.
 6. Hypotheses Testing.
 7. Conclusion/Selection of Final Hypothesis.

The NWCG PMS 412 provides an excellent description of what goes in this section beginning on page 187.

- **Conclusion** – A statement about the “Final Hypothesis” for the origin and cause of the wildfire. The conclusion section describes the ignition source, material first ignited, and the ignition sequence. Some INVF’s include a disclaimer along the lines of” *I reserve the right to change my opinion or conclusions based on any additional data received.*”
- **Description of Evidence Collected** – This is a narrative description of any evidence collected, how it was collected, who collected it, and who has custody of it. It is not the evidence log.
- **INVF Contact Information** – The contact information for the INVF.
- **Copies of Report Distributed to** – A statement documenting who was given a copy of the report.
- **List of Attachments** – A list of the Attachments.
- **Attachments** – A wildfire investigation may result in several attachments and supplemental documents that need to be referenced in the Report. These include but are not limited to:
 - Photographs & logs (photographs collected by other than INVF)
 - Wildfire Investigation Field Notes
 - Lightning detection data (if applicable)
 - Dispatch records and information
 - Physical site measurements converted to a diagram (when required)
 - List of contacts and information (investigators, first responders, law enforcement personnel, witnesses)
 - Weather data at the time of ignition

- Incident Command System (ICS) Unit Log, ICS-214
- Canine report (if applicable)
- Reports from law enforcement agencies (if applicable)
- Reports of interviews
- Typed or hand written interviews

2.6.2 Disposition of Case Files Standard

The Report should be classified as containing *sensitive unclassified* information and should be properly secured.

At the conclusion of any litigation, the permanent storage of the original Report should be at the local unit and must follow the established Trust Record guidelines. The original Report should remain in the custody of the lead INVF until any reasonable expectation of criminal litigation is concluded. A copy is provided to the appropriate law enforcement office when criminal activity is involved.

If any of the following circumstances apply, the original Report should be transferred directly to the BIA Agency Superintendent, Trespass Officer, or the designated Tribal official for use in trespass proceedings or, for preservation and filing:

- The investigation was inconclusive. The origin and/or cause could not be identified.
- The investigation is not part of a serial arson investigation and no probable responsible person was identified.
- The cause was non-human.
- There is no apparent criminal activity.

It is the responsibility of the recipient to protect the confidentiality of the Report.

2.6.2.1 Original Report with a BIA/Tribal INVF

The following guidelines are established for the original Report while litigation is pending.

- In all circumstances, regardless of land ownership, the original wildfire investigation report files will be maintained and remain with the INVF as long as the INVF is an employee of the BIA/Tribe *and* criminal litigation is pending.
- The original files will be kept in a secured locked storage cabinet while in the possession of the INVF.
- When the INVF is no longer an employee of the BIA/Tribe, the original Report will be transferred to the jurisdictional BIA regional office (prior to the INVF's separation, when possible) for a determination about the proper disposition.

- When the potential for criminal litigation is concluded, the INVF should transfer the original Report to the jurisdictional BIA Agency/Tribe.
- The INVF may elect to keep a good quality copy of the original Report while employed by the BIA/Tribe.

2.6.2.2 Original Report with a Cooperating BIA Agency INVF

The following guidelines are established for the original Report while litigation is pending.

- At the conclusion of the assignment, the INVF who generates the Report will provide the original to the jurisdictional BIA Agency/Tribe and retain a copy for future reference.
- The Report will be placed in a secured locked storage cabinet at the jurisdictional BIA Agency/Tribe.
- It will be the responsibility of the jurisdictional BIA Agency Superintendent or the designated Tribal official to cooperate with law enforcement concerning the need for maintaining confidential access to the Report throughout the litigation.

2.6.2.3 Original Report with an Investigation Team

During a large fire investigation effort, numerous investigation Reports are developed, and the security of these Reports becomes an area of concern. In addition to the guidance above, the following guidance applies for teams.

- All open investigation Reports generated by a fire investigation team must be kept in a secure location at all times.
- The original investigation Report should be retained by the lead INVF conducting each individual investigation while the team is assigned.
- Copies can be maintained in a secure central filing location during an active investigation team assignment as long as access is limited only to team members and law enforcement officials with a need to know.
- Disposal and custody of the Reports generated by the team upon departure should follow the guidelines in 2.6.2.1 and 2.6.2.2, above.

Upon exit of the outgoing team, the team leader will provide a log to the delegating official of all investigations conducted. The log will include dates of incident, specific cause, lead INVF, original Report custody, enforcement referral status, and any follow-up required by the home unit.

2.6.3 Copies

All copies of the original Report should be identified with the word “COPY” on the cover and in the upper right header section of each page.

2.7 Digital Photography Standard

The BIA’s standard for digital photography is to visually document any evidence, the fire’s burn pattern, and the investigative process with the highest degree of integrity possible. This section constitutes the BIA’s Standard Operating Procedure (SOP) for digital photography.

Photographic evidence greatly enhances any wildfire investigation report by providing graphic information about the scene, evidence, and any natural resource damages. It also provides prosecutors with the visual evidence they need to successfully prosecute cases. Prosecutors rely on these photographs to graphically document and present evidence of burn patterns, fire pattern indicators, and resource damage resulting from the wildfire. In most cases, a crime scene photographer or specialist will not be available to go to the scene, so taking photographs of the scene is a fundamental responsibility of the investigator.

To ensure the highest integrity when using digital imaging evidence in court, BIA has established the following standards:

A. Equipment

- Only government (or Tribally) approved or issued digital cameras and video cameras will be used for official investigation purposes.
- Existing government (or Tribally) approved cameras will have at a minimum 5.0 megapixels, on-camera viewer, close up capability, flash, and a removable image memory card or device (CD) of at least 256 MB.
- Any new government (or Tribal) camera equipment purchased will have at a minimum 8.0 megapixels, on-camera viewer, close up capability, flash, and a removable image memory card of at least 256 MB.
- A government (or Tribally) approved video camera will have at a minimum 5.0 megapixels, on-camera viewer, close up capability, on/off audio capability, and a removable image memory card or device (CD, DVD) of at least 16 MB (megabytes).
- If a second opinion is requested for a wildfire investigation, the agency standard from the sending agency will apply for equipment specifications. If the sending agency has no standard, or if the second opinion is provided by a consultant, the BIA Agency standard will apply. The investigator will:
 - ensure the issued digital camera is in proper working order and be familiar with its proper operation;

- use a clean image memory card or device (CD, DVD) for each investigation;
- check the date and time on the camera for accuracy (appropriate time zone, etc.) before each use;
- set the camera's date stamp correctly so that it will not be printed on the digital images;
- set the camera at "automatic" for exposure, flash, and focus (compensation may be necessary in some situations such as low light, sun glare, etc.);
- set the storage control or photo quality at a minimum of 3.1 photo mega pixel (MP) or "high quality" if storage device's MP capacity allows; and
- use an evidence ruler when taking close-up photographs — a 90-degree ruler is optimal.
- Cellular telephone photography is prohibited from use for an investigation.

B. Procedures

- The Lead Investigator will designate an individual onsite at each incident to be responsible for the photography and documentation of the fire and/or trespass scene.
- All photographs taken at the incident will be taken by a fully qualified investigator or trainee.
- The investigator or trainee will use the photo log (BIA Wildfire Investigation Field Report – Photo Log) to record all fire and/or trespass scene photos.
- All information on the photo log will be completed for each incident and photograph taken.
- All photographs taken at the incident scene will be retained. Photographically faulty images will not be deleted. Only photographs that are relevant and of print quality will be used for the investigative report.

C. Photo Processing

- The unaltered images captured at the incident will be downloaded or copied to a secure computer for printing and report development without opening the CD/DVD, camera, or other memory device.
- Only government or Tribally approved and issued computers will be used.
- The CD/DVD to be used will be write-once-read-many-times (WORM) disks – CD/DVD-R. The use of CD-RW and DVD-RW is prohibited.
- When transferring the data from the camera's memory device to the CD/DVD or encrypted flash memory device (Memory Device) a "closed" disc or session will be used.
- The memory device will be labeled with the appropriate investigation information.

- The camera’s memory card will be removed and placed into the appropriate evidence container and sealed upon validation of transfer of images to a memory device or limited access computer file.
- The CD/DVD/memory card will become the “master negative” and serve as the permanent record.
- The files on the master negative memory device should be copied, without opening, onto another approved memory device that becomes the working record, the “negative duplicate.”
- The master negative should be placed into an evidence envelope, with the identifying investigation information on the outside of the envelope, and sealed.
- All pertinent investigation information should be included on the evidence envelope and the envelope should be placed in a secure evidence storage locker.
- The master negative memory device will remain in the custody of the investigator responsible for the investigation along with the original investigation files. If a memory device is to be reviewed beyond the custody of the original investigator, a new memory device should be created from the negative duplicate memory device, such as for the investigating officer, prosecutor, defense attorney, etc.
- All printing of photographs will be generated from the negative duplicate.
- A thumbnail print of all photos taken at the incident will be included and created for each incident.
- Additional large prints may be produced as needed for the investigation report.

In addition, the Federal Rule of Evidence, Article X (Contents of Writings, Recordings and Photographs) will be the guiding principles for digital imagery use.

2.8 Wildfire Investigation Kit Contents Standard

The standard is for all INVFs to have and maintain a wildland fire origin and cause investigation kit. The kit must include all of the items needed to conduct a thorough investigation. The standard list of contents is found below. The kit should be stocked, inventoried, and sealed prior to use. It should be re-stocked, re-inventoried, and re-sealed following each use. Taking a photo of the sealed kit upon dispatch is a useful practice. Occasionally, additional items may be necessary and should be added as the needs dictate. For example, a unique situation may require a phone call to a federal, state, or local crime lab concerning the specialized storage and transportation of samples, or to obtain a specialized evidence collection equipment.

A. Scene Examination Supplies

- Wire stake flags (yellow, blue, white, lime green, and red)

#19-11, Issued: 7/01/19

Replaces #12-38, Issued: 9/28/12

- Vinyl or plastic flagging (about 12 rolls of assorted colors)
- Hand held magnifying glass
- Crime scene barrier tape
- Stringing kit for search grids
- String and 8 large spikes (14 inch or longer) for search lanes
- 200 ft. metal measuring tape, delineated in feet and inches
- Two 100 foot logger's tapes or reel tapes, delineated in feet and inches
- 20 foot carpenters tape measure
- 12 inch ruler and yardstick
- Magnetic compass
- Compact binoculars
- Aluminum nails (3 inch) for establishing reference points
- Canning Jar lids for identifying reference points
- Probe (wire probe or dental pick)
- Fine, small paintbrush
- Global Positioning Satellite Receiver (GPS)

B. Evidence Collection Supplies

- Brown paper evidence collection bags
- Sealable plastic evidence bags
- Clear plastic bags (Ziploc type)
- Evidence slide boxes
- Glass evidence jars
- Cotton balls/pads to line slide boxes
- Metal arson evidence cans (Pint, Quart, Gallon)
- Various types of evidence sealing tape
- Various types of evidence labels
- Disposable tweezers (assorted sizes and designs)
- Curved metal forceps
- Large magnet
- Latex, nitrile and white cotton gloves

- Metal trowel
- 8 ½” X 11” sheet of flat metal for basal lift
- Lumber crayon
- Fantastic cleaner

C. Documentation Supplies

- 4 (four) sets of BIA Origin and Cause Field Reports
- 2 (two) clipboards, drawing paper, notebook paper
- Permanent markers, black and red (i.e., Sharpies)
- Pencils, pens

D. Photography Supplies

- Photo gray rulers and reference scales for photography
- Numbered evidence tents or other evidence markers for photography
- Digital camera with flash, storage cards

E. General Tools and Supplies

- Pelican Case, heavy duty bag, or backpack large enough to carry all contents
- Large flashlight
- Pocket knife or multi-tool
- Wire cutters
- Hatchet
- Spray paint
- Antiseptic hand cleaner (blood borne pathogens)
- Belt weather kit or Kestrel
- Staple gun or hammer
- Roll of paper towels
- Adhesive tape
- Scissors
- Knee pads
- Hard hat and other personal protective equipment
- High visibility, flame resistant safety vest (for roadside right-of-ways)

#19-11, Issued: 7/01/19

Replaces #12-38, Issued: 9/28/12

F. Optional Tools and Supplies

- Video camera or body cam
- Cardboard boxes
- Metal detector
- Traffic cones
- Tape or digital voice recorder
- Sterile gauze pads for collecting DNA samples

Chapter 3: Operational Strategies and Support

Even the most experienced INVFs must rely on assistance from a variety of specialty disciplines for successful investigation resolution. Experts such as forensic scientists, fire behavior analysts, and many others can provide critical support in the application of scientific disciplines as they apply to legal issues. Anticipating the need for technical assistance and prior availability can be paramount in pursuing a crucial investigation. The INVf will often need to initiate the involvement of these specialists and develop partnerships when taking the investigation forward (see section 15.5 of NFPA 921 Guide of Fire and Explosion Investigations for additional information).

3.1 Prioritizing Workload

The INVf is often confronted with complex issues related to fractionated and/or unknown land ownerships, multiple ignitions, extreme fire behavior, large land base, excessive travel distances involved, and many others. When additional INVfs are not available to assist, the INVf will need to establish priorities similar to a triage system. The first step is to prioritize based on jurisdiction. Chapter 2.4 provides the recommended prioritization of jurisdictions. The second step is to prioritize based on the *consequences* of the fire. When there are multiple fires to be investigated on Indian lands, the recommended prioritization is (from highest priority to lowest):

1. Fires with fatality and/or serious injury.
2. Fires associated with serious accidents (including traffic accidents, burn-overs, and entrapments).
3. Fires with personal property losses (homes, cars, boats, sheds, etc.)
4. Fires associated with other major crimes.
5. Fires suspected of being part of a serial arson case.
6. Fires resulting in Tribal natural resource losses.
7. Fires in non-commercial timber, grass, or weeds.

The INVf must consider both sets of prioritization criteria when sorting out the workload produced by multiple fires requiring an investigation. The INVf must also recognize that exceptional circumstances may result in the need to deviate from these prioritization recommendations.

Organization and delegation of assignments *prior* to dispatch to an incident will improve the overall efficiency of the investigation. Individuals should be pre-assigned specific tasks from the Field Investigation Report Checklist in the Wildfire Investigation Field Report.

Additional resources may be available and useful, such as law enforcement personnel who can assist with witness interviews; securing the scene at new ignitions not yet visited by the investigator; securing, transporting, and managing physical evidence; and many other duties typically performed by the investigator. It may be possible to resource order additional personnel who can assist with photography, mapping, land ownership status determinations, measurements,

record keeping, posting reward signs, media relations, GPS data collection, and many other functions. These individuals require close supervision and on-the-job training by the investigator to maintain the high standards required for criminal case preparation.

When workload pressures become overwhelming due to investigation complexity and/or the need to deal with multiple fires, it is important to remain in control of the situation until additional help arrives. Scene preservation, chain of custody issues, strict attention to systematic methodology, and thorough and detailed recording of observations are always mandatory. There is a tendency to take “short cuts” or to abandon a potential crime scene in lieu of a “new” ignition that is currently under initial attack. Every situation is unique, but it is strongly recommended that, as a general rule, the INVF stays with the fire that has been assigned until all field work is completed.

It may be possible to return to a fire later to complete some of the reference point work, measurements, rule outs, etc. However, all matters pertaining to evidence, lane searches, ignition area, micro burn indicators, and others need to be completed prior to dispatch to an additional fire.

3.2 Recognizing the Need for Additional Assistance

In the preparation of origin and cause determination and report writing, many circumstances arise that require assistance outside the home unit. Local Line Officers and/or fire managers often do not detect these circumstances as they are occurring. It is the responsibility of the local unit to recognize the need for outside assistance. The local unit should use the following list as guidance for when to request outside assistance:

- History of fire occurrence over a specific timeframe.
- Excessive fire occurrence beyond the ability of local staff.
- Local unit has no qualified staff to perform investigation duties.
- Extensive resource, property, or cultural loss/damage.
- Injuries or fatalities occurred related to wildland fire.
- Evidence of serial arson.
- Fires involving multiple ownerships.
- Complex fire scene issues or the need for special investigation skills.

3.3 Wildfire Investigation Teams/Task Forces

In some serial arson cases or during periods of an overwhelming number of new ignitions over a short period of time, it may be advisable to use an arson task force or investigation team. While rarely used in Indian Country, these teams and task forces can bring in specialty resources and fresh eyes, and focus just on the fires thought to be connected to the surge in activity.

Normally, these task forces and teams are staffed by BIA INVFs and trainees. They may be ordered on an ongoing fire, a complex of fires, or short or long term severity. The requesting unit should generally use the nearest available resources to staff teams/task forces, unless a specialized skill or level of experience is needed. If BIA or Tribal personnel are unavailable, a request may be made through the Geographic Area Coordination Center (GACC).

The team/task force leader must be provided with a formal delegation of authority from the appropriate Line Officer outlining the requirements, limitations, and objectives of the activation. This delegation of authority should also contain clear instructions on any safety precautions, work schedule expectations, closeout reports, disposition of case files, and storage of evidence for the assignment.

The BIA Agency or Tribe should coordinate requests for an investigation team/task force through the Regional Wildfire Prevention/WUI Specialists. Prior to requesting a team/task force, the ordering unit will need to make contact with all of the jurisdictional law enforcement agencies. The reasons for this contact are as follows:

- Advise them of the activation of a team/task force.
- Brief them about the objectives for the team/task force.
- Ensure that the team/task force activation won't interfere with any ongoing investigation the law enforcement agency is conducting.
- Obtain contact numbers and names for the team/task force.
- Request their support and involvement.

Upon arrival, a primary duty of the team/task force leader is to contact these law enforcement agencies again to "check in," to coordinate their activities, and to renew requests for involvement. Throughout the activation, the team/task force leader must keep the law enforcement agencies fully briefed. If the activation continues and additional teams/task forces are needed, the changing leadership must be communicated with law enforcement. The team/task force leader must notify law enforcement of any criminal activity identified during the course of the assignment.

In some cases, law enforcement may provide the leadership of the team or task force. In these situations, INVFs will continue to provide the origin and cause expertise, and law enforcement will conduct the criminal investigative work.

Large scale or high profile team/task forces should be staffed with an NWCG certified Wildland Fire Investigation Team Member (INTM) as the leader.

3.3.1 BIA Wildfire Investigation Team Requirements

The composition of a wildfire investigation team can be a very dynamic thing. The team at any given time may have special needs requiring expertise from a variety of fields. The BIA has determined the minimum composition of a wildfire investigation team to include the following:

- One (1) team leader – must be an experienced INVf with supervisory experience, an INTM, or law enforcement official (Sergeant or higher).
- Two (2) lead INVfs – must be an NWCG-Qualified.
- Trainees as available and needed (assign no more than three (3) trainees to each Lead INVf).
- Local law enforcement representative – may be a collateral duty.

Additional positions may be requested to support the efforts of the team.

3.3.2 Preplanning and Expectations

Upon ordering an investigation team, the requesting unit should communicate with BIA/Tribal law enforcement and secure their involvement. Coordinating with law enforcement is critical to the overall success of the assignment. The requesting unit should also identify a Liaison Officer to work with the incoming team.

The investigation team should be advised of any local unit wildfire investigation policies and procedures. Upon their arrival, the ordering unit should provide the team leader with:

- A delegation of authority containing the objectives for the fire investigation team.
- Basic logistical support and arrangements for the team including office space, phone lines, photocopier, and facility security protocols.
- Details regarding fire investigation administrative support.
- A comprehensive briefing on the situation, prior to assumption of assignment. Any maps, special instructions, and related information should be available at that briefing. The Line Officer should expect to give the team at least an hour of undivided attention.
- A representative who is available to the team/task force (if a Liaison Officer is not assigned) to make decisions.
- Local subordinates who understand the objectives and support them.

3.3.3 Team Leader Responsibilities

The team leader will have many responsibilities. Those common to all assignments are as follows:

- Safety will be a primary concern.
- Feasible objectives will be discussed, agreed on, and documented with the requesting unit.
- Professional conduct will be required of team members assigned to the incident.
- Daily briefings will be provided to facilitate information transfer from the team to those individuals the delegating authority has designated.

- A complete financial and property report package will be provided upon completion of the assignment.
- All significant decisions made by the team will be documented in the final closeout package.
- The resources assigned to the incident will be managed efficiently.
- Any Human Resource issues will be appropriately addressed, with zero tolerance for discriminatory or demeaning language or actions.

3.3.4 After Action Review (AAR)

The team leader will conduct an AAR for the investigation assignment, as described in the Interagency Standards for Fire and Fire Aviation Operations (Redbook), Reviews and Investigations chapter. See also the NWCG Incident Response Pocket Guide (IRPG), PMS 461 for a recommended format. The AAR will be documented and included in the closeout package. The NWCG IRPG can be found online at:

<https://www.nwcg.gov/sites/default/files/publications/pms461.pdf>

3.3.5 Closeout

A closeout meeting should be held at the end of the team assignment, and attendees should include the requesting unit, members from the investigation team, the BIA Agency Line Officer and/or Tribe(s), or designee, law enforcement, and the appropriate BIA Agency and/or Tribal(s) staff. The closeout meeting will cover situation background, summary of team actions, summary of team findings, summary of the recommendations along with follow-up needed, and investigation file disposition.

In addition, the investigation team will prepare a final closeout document using the Wildfire Investigation Team Closeout Report Template found on the Wildfire Investigation Resources webpage. The Wildfire Investigation Team Closeout Report should contain all pertinent non-sensitive information regarding the team's activities, for the requesting unit.

3.3.6 Transition Between Teams

A smooth transition between the current and replacement wildfire investigation teams is necessary to ensure the success of the new team. Anticipation of future investigation needs during and after current rotation is essential. At least two days of overlap with the current team should be planned for in the transition.

The current team structure should be analyzed in relation to meeting host unit objectives, and recommendations provided to the host unit for staffing and resource needs of the incoming team. A work schedule during this overlap should be developed to allow the original team to lead on the first day and the incoming team to take over the lead on the second day. This kind of transition will allow the incoming team the opportunity to shadow the current team while in operation mode, review investigation files, identify new needs, receive handoff investigation files, maintain chain of custody, and develop their own plan of operation. If possible, the

incoming team leader should attend the outgoing team's closeout meeting with the requesting unit.

3.4 Communication

As with any activity, communication with external audiences must be carefully considered. Information collected at the wildfire scene must be held in the utmost confidence before and during the wildfire investigation. If there is evidence that a crime has been committed, the INVF must contact the appropriate law enforcement office immediately to obtain further guidance. At that time, no information may be released to any external audience. Law enforcement determines what and when information can be released. All personnel involved in the investigation must understand the importance of maintaining information in confidence.

The BIA Agency Superintendent or a Tribal official may inquire about the fire investigation. The information provided should generally focus on the status of the fire investigation.

3.4.1 Operational Communications

Operational communications are critical to ensure the safety of all individuals involved in a wildfire incident. The use of radios, both mobile and handheld, is common in the wildland fire community. With the expansion of coverage areas, cell phone use is becoming more popular. The primary function of these communication systems is to maintain contact with the wildland fire personnel, including investigators, local wildland fire departments, Volunteer Fire Departments, and law enforcement personnel.

The most effective communications system is face to face to contact. Because this is not always possible or practical, the situation will generally dictate the choice of the communications system that will meet the needs of the investigation. Encrypted radio systems are available if communication security is a concern. If this issue arises, it is recommended that investigators seek the guidance of a communication specialist.

3.5 Use of Weather and Lightning Detection Data

Weather data in combination with topography and fuel elements affect the formation of fire direction indicators, and are crucial to properly interpreting a wildfire's burn pattern. The INVF should personally collect weather data if assigned to the fire during initial attack. It is often necessary for the INVF to assemble fire data from sources such as dispatch centers, initial attack suppression forces, weather stations, Remote Automated Weather Stations (RAWS), any on-scene witnesses, and others. If possible, hourly or more frequent observations from the closest weather station that covers the ignition area should be obtained. INVFs can use weather and other data to calculate wildfire ignition and behavior potentials. Fire behavior analysis and fire predictive modeling may also play a pivotal role in determining origin and cause and, later, in case preparation.

Lightning detection data is also available and should be utilized to rule out or include naturally ignited wildfires as a cause. Lightning data can be obtained from the National Interagency Fire Center's webpage at: <https://lightningapi.nifc.gov/viewer/>.

3.6 Pattern Analysis

The analytical approach to fire investigation may link an individual fire to other fires in the area. Reoccurring fires may be the result of an accident or, possibly, deliberate ignitions. An example of an accidental reoccurring fire might be a piece of defective ditch mowing equipment that sparks an ignition occasionally. But there may also be a pattern of recurring incendiary ignitions that are part of some other crime concealment or serial arson. Therefore, the INVF must consider whether the fire under investigation could be connected in some way to other local fires, keeping in mind that those other fires could be structure fires.

A Geographic Information Systems (GIS) specialist may be very helpful during this process. This resource (recommended when multiple fires are occurring or serial arson is suspected) can provide valuable assistance in organizing, cataloging, cross referencing, and evaluating the information generated through the investigation, and to advising the team leader or lead investigator about data collection and storage.

A GIS specialist could be included on the investigative team to produce maps of the fire(s) and diagrams of the origin scene(s). Spatial locations of fires or certain attributes may reveal patterns or links with one another. Reoccurring fire setting patterns may be recognizable by time of day, day of the week, proximity to schools, proximity to a suspect's residence, or other factors. If possible, these specialists should have fire investigation or law enforcement training. The data analyzed and the results displayed must remain confidential and be treated as investigation/law enforcement documents.

3.7 The Role and Use of the Fire Behavior Analyst

INVs are sometimes confronted with complex issues concerning fire spread and ignition potential that are beyond the scope of their training. Understanding the basic principles of fire behavior is critical. The ability to recreate probable fire spread, based on knowledge of these principles, will greatly assist the INV in determining ignition sources, fire pattern indicators, and overall burn patterns.

It is recommended that a qualified Fire Behavior Analyst (FBAN) be consulted regularly for help on case preparation. The FBAN can predict how far and fast the fire has moved since ignition. With accurate weather data, the FBAN can determine the Rate of Spread (ROS), Spotting Distance (SD), and Probability of Ignition (PI) in a receptive fuel bed. From this, the FBAN can determine the size and shape of the fire for a given burning period in a particular fuel bed and topography. If possible, the FBAN should view the fire area in person. The FBAN can determine how topography would have influenced fire spread and the effect of topography on local weather conditions. Fire behavior predictions can be determined from off-site locations, but may not be as accurate as predictions made on site.

The more accurate the weather data, the more accurate the FBAN will be in fire behavior predictions. It is essential that weather data, particularly any major changes in conditions, be recorded on-site from initial attack on. The INVf should interview initial attack crews for weather conditions that were present at the point of arrival on the scene. If no local weather observations are available, the FBAN can use the daily fire weather general forecast and data from Remote Automatic Weather Station (RAWS). Because the daily fire weather general forecasts and RAWS stations may not totally reflect the weather at the general origin site, on-site weather is the most accurate for fire behavior predictions.

Rate of Spread (ROS) is used to determine how far a fire has advanced. ROS predictions, based on fuel models (FM) and weather conditions, can clarify the GOA, and estimates of baking distance can be determined.

Probability of Ignition (PI) is used to determine the intensity needed for ignition of the fuels at a particular site. The time of ignition could be estimated from weather conditions and FM, based on the spread distance of the fire.

If aerial photos of the fire are available, the FBAN could determine the general origin of the fire by observing the spread pattern of the fire. From spread pattern analysis, the FBAN could determine the chances that there were multiple ignition points.

3.8 Use of Prevention Teams

Staff from the local unit or off unit Prevention Teams can be a valuable resource for the INVf and/or investigation team. The most useful functions involve interacting with local communities, community leaders, children, schools, Tribal Councils, elder groups, and other local groups. Valuable information is often obtained from these sources due to the non-threatening appearance of the Prevention Teams.

The position of Public Information Officer has been utilized to interface effectively with media. This position not only promotes awareness of the current conditions and situation, but also informs the public regarding a way to provide information anonymously. Members of the Prevention Team may also provide verbal and written updates to the local unit and/or the public. The Prevention Team should not be briefed on any of the criminal information while an investigation is ongoing.

3.9 Canine (K-9) Use

The use of bloodhounds for assistance in origin and cause determination of wildfires on Tribal lands has proven very successful. Highly trained dogs and a handler proficient in origin and cause determination can assist with identification of suspects or witnesses, identify direction of travel by a suspect or responsible party, uncover additional evidence, ascertain vehicle involvement or use, and confirm or contradict witness or suspect statements. Local law enforcement involvement is required prior to and during the use of dogs. It is recommended that several fire investigators or trainees work with the K-9 handler(s). General considerations when a K-9 team is involved are:

- Tracking can provide information such as direction of travel, even if suspects are not present.
- K-9 handler should work with the INVF. Together they can establish a perimeter (place barrier tape) and look for evidence. This includes a walk-around that may be more than just a perimeter of the fire itself. This may be a single file walk-around. Mark evidence with white flags.
- K-9 handler will make the final decision about whether tracking is to be done.
- Scene security is essential to avoid unwanted scent contamination. Bystanders, witnesses, firefighting personnel, and others should be kept some distance away from the GOA. The specific distance is variable and is determined by the K-9 handler.
- The K-9 handler will conduct all tracking operations with dogs. A K-9 report will be generated by the handler, to be included as a supplement in the investigation.

Chapter 4: Wildfire Investigator Interactions with Law Enforcement

Law enforcement responsibilities in the BIA are vastly different from those in other Department of the Interior (DOI) bureaus/agencies. BIA's law enforcement branch and Tribal law enforcement services are responsible for all law enforcement activities on Indian land, not just natural resource crimes. At times, the fire community's needs are not always met due to law enforcement's overwhelming caseload.

This situation led to the development of the following national standards for wildfire investigations when law enforcement is involved. INVFs at every location must have a clear understanding of law enforcement's responsibilities to ensure that both parties work together towards solutions that have a positive impact on the Tribes.

4.1 Law Enforcement Involvement

Several events during a wildfire investigation may require law enforcement participation. The INVf does not have the authority to make arrests, interrogate witnesses, or request search warrants. This section describes roles, functions, and responsibilities of law enforcement and wildland fire management when responding to wildfires and wildfire crimes. It also establishes the minimum requirements for requesting assistance from law enforcement when a wildfire has occurred.

Tribal laws, codes, and ordinances governing Indian Country vary from reservation to reservation and from jurisdictional area to jurisdictional area. INVfs must become familiar with the Tribal laws, codes, and ordinances governing the lands in which their fire investigations are taking place, and be able to identify any violations during the course of an investigation. The first step is to obtain a list of the particular Tribal laws, codes, and ordinances within a jurisdictional area or reservation by contacting the Tribal law enforcement, Tribal attorney, Tribal judge, Tribal advocate, or magistrate.

4.2 Standard Roles When There is a Suspected Crime

Role of INVf: Processes the *fire* scene, completes origin and cause determination, assists as needed with fire-related evidence collection and fire-behavior determination, and provides a complete copy of a written origin and cause determination report to the appropriate authority.

Role of LEO: When the fire is associated with criminal activity, the LEO takes the lead in managing and processing the *crime* scene, supervising the overall investigation, collecting and securing evidence, interviewing and interrogating witnesses and persons of interest, preparing the final report, and submitting the report to the proper court of law. The LEO is responsible for requesting forensic testing of any evidence. The LEO also makes the decision to involve other federal or state agencies such as the FBI, Bureau of Alcohol Tobacco and Firearms (ATF) or a state Bureau of Investigation. The LEO is then responsible for scene security until that agency arrives.

4.3 Standard Roles When There is No Suspected Crime

These are investigations where the wildfire is the only incident to be investigated and there is no evidence of criminal activity. Wildfire trespass may be included in this category.

Role of INVf: Takes the lead in processing the fire scene, interviewing on-scene witnesses, securing evidence, completing origin and cause determination, and completing the written origin and cause determination report.

Role of LEO: Assists the INVf, if needed, with scene control, evidence collection/chain of custody, interviewing witnesses, and collaborating with the INVf to ensure no other criminal activity has occurred. Additionally, the LEO may be needed to ensure personal safety of fire investigation staff on scene. If criminal activity is detected, the LEO assumes responsibility for the criminal investigation.

4.4 Evidence Collection, Handling, Transfer, Storage, and Analysis

Collecting, handling, transferring, storing, and analyzing evidence must follow the guidelines provided in the FBI's Handbook of Forensic Services. Successful investigations and criminal prosecutions depend on the reliable forensic analysis of evidence. Forensic analysis of evidence is often crucial in determining guilt or innocence. The INVf needs to become thoroughly familiar with the rules of evidence, which govern the admissibility of proof at a trial. A copy of the Handbook of Forensic Services may be obtained from the FBI website at: <https://www.fbi.gov/file-repository/handbook-of-forensic-services-pdf/view>.

It is preferred for law enforcement to collect evidence on scene to shorten the chain of custody. If law enforcement is unavailable, INVfs should mark, photograph, collect, and catalogue the evidence. Whenever evidence is collected, the chain of custody should be as short as possible. Photography and other illustrative forms of evidence are crucial elements in the documentation of wildfire investigations. All photographic procedures must follow the standard operating procedures described in chapter 2.7 of this handbook.

The INVf must **never collect undetonated explosives or similar devices**. Instead, the investigator must establish a generous safety perimeter around these types of devices and notify law enforcement immediately. Only **trained law enforcement** personnel are authorized to photograph, collect, or detonate these devices. Additionally, the INVf must never attempt to obtain or collect evidence not present on the scene. Only law enforcement may gather this type of evidence (surveillance tapes, remote photographs, etc.).

Once collected, evidence should be handled as little as possible by the INVf. All evidence must be transferred to a BIA, Tribal, or local law enforcement facility for secure storage as soon as possible. The INVf must also be mindful of the destruction, alteration, mishandling, or mutilation of evidence (i.e., spoliation). In addition, all written documentation (evidence transfers, case number identification, etc.) protocols must be defined in advance.

The agreements for storing evidence must be developed and clearly understood as part of the local unit's wildfire investigation policies and procedures. Consultation with the appropriate law enforcement office regarding this topic is essential **before** any storage occurs. The initial INVF must maintain a copy of all evidence documentation and it should be part of the investigation file. An evidence custodian (one individual) at each incident is needed to maintain custody of evidence from time of collection to sign-in at the storage facility.

In instances where evidence has been identified and protected by firefighters, and the INVF or law enforcement official has not yet arrived on scene, the IAIC must designate a person to remain on scene and maintain the chain of custody until the INVF or law enforcement official has arrived.

It is the responsibility of the INVF, in consultation with the appropriate law enforcement partner, to recommend the appropriate laboratory for analysis of evidence. The law enforcement office must submit the request for forensic evidence analysis by a laboratory; the INVF cannot make this request.

4.5 Conducting a Witness Interview

Individuals identified at the wildfire scene as potential witnesses should be contacted, and their statements obtained, by trained personnel. An interview is a consensual questioning of a witness. It differs from a voluntary statement in that the investigator is asking the witness specific questions about the incident, rather than having the witness write a voluntary statement. Most witness interviews will not require an advisement regarding the right to avoid self-incrimination, such as a Miranda Warning.

In cases where trained personnel are not available, fire personnel should record, at a minimum, the name, contact information, and description of each potential witness. Fire personnel may collect a voluntary statement from a witness if the witness has to leave the scene. This statement must be signed by the witness giving the statement, and signed by fire personnel receiving the statement.

Whenever possible, witness statements should be written, signed, and dated by the person making the statement as true and correct. When witnesses are unable to write out a statement, the INVF can write it for them, adding, "Statement of John Doe as told to INVF Jimmy Q, investigator." The witness should initial the beginning of the statement, approve any changes (spelling errors, etc.) made to the statement, and initial the end of the statement. The witness should also sign and date the statement as true and correct to the best of their knowledge. If witnesses on scene identify additional witnesses who are not on scene, the INVF must forward the information to the LEO for follow-up. However, the INVF may conduct a follow-up interview with a firefighter or incident commander as long as they are not a person of interest.

If at any time a witness admits starting the wildfire, the INVF must document all statements provided and contact law enforcement immediately. This information must be transposed onto a BIA Wildfire Investigation Field Report – Voluntary Statement (available at:

<https://www.bia.gov/bia/ots/dfwfm/bwfm/wildfire-prevention-and-education/prevention-resource-library>).

If anyone is identified as a person of interest related to the wildfire occurrence, the INVF must contact law enforcement immediately. The LEO (not the INVF) will be the lead for any follow-up related to this information. The LEO will conduct any follow-up interviewing or interrogation deemed necessary. However, the INVF is encouraged to assist the LEO in developing a line of questioning related to the wildfire when arson is suspected.

4.5.1 Interviewing Juveniles

A juvenile (sometimes referred to as youth) is a young person who has not yet attained the age at which he or she can be treated as an adult for the purposes of criminal law. This categorization also includes “children” (persons under the age of 12). Fire setting by juveniles is a complex issue, beginning with the age of the juvenile at the time of the fire. Most INVFs working in Indian Country are not adequately trained for the many legal and ethical issues involved with juveniles who are witnesses, persons of interest, or suspects. **Law enforcement involvement is required whenever there is evidence that juveniles are involved in fire setting.**

Interviewing juveniles at the fire scene is encouraged, as most of the time they will have seen something or someone that was at the origin or nearby. When INVFs are interviewing juveniles or children, it is important to adhere to the following guidelines:

- Use non-threatening words and body language when conducting interviews with young children.
- Do not ask leading questions (i.e., what you want them to say).
- Inquire and document who their parents or legal guardians are, and how they can be contacted.
- Request the parent or legal guardian to be there during the interview if they are present or nearby.
- If the juvenile admits to starting the fire during an interview, document what was said and contact local law enforcement with the information. Law enforcement will conduct a follow-up interview/interrogation.
- If criminal intent is determined, the investigation is then a law enforcement matter.
- Research Tribal codes to determine if any are in place to address the issue of juveniles.

4.5.1.1 Youth Firesetter Intervention

When fire setting by juveniles is encountered, the INVF is generally the first to recognize the need for intervention. The BIA has a Youth Firesetter Intervention Program (YFSIP) that provides a framework for evaluating the level of intent for setting a fire and establishing appropriate follow-up action. The Regional/WUI Prevention Specialist is the point of contact for the INVF when the need for an YFSIP is recognized. Additional

information about the YFSIP and program materials may be found at:
<https://www.bia.gov/bia/ots/dfwfm/bwfm/wildfire-prevention-and-education/youth-fire-intervention-program>.

4.6 Training and Qualifications for Law Enforcement

Wildland Fire management will notify LEOs (Tribal and OJS) of fire training opportunities. Law enforcement personnel will be notified of training opportunities in wildfire investigation, fire behavior, and the incident command system.

Regional FMOs or other designated staff may also track law enforcement's wildfire training and qualifications in the Incident Qualifications Certification System (IQCS). An Incident Qualifications Card (Red Card) will be provided, if applicable. All NWCG training, qualifications, and fitness standards must be adhered to for the appropriate ICS positions.

Law enforcement may provide INVFs with training opportunities applicable to situations that arise during wildfire investigations, including witness interviewing, evidence collection, and drug lab/cultivation awareness. The INVf will need to make their local law enforcement office aware of their interest in additional investigation skills training.

4.7 Wildfire Investigation Safety Requirements for Law Enforcement

All personnel assigned to a wildfire incident must adhere to the personal protective equipment (PPE) requirements, as defined in the current version of the Interagency Standards for Fire and Fire Aviation Operations (Red Book, current version). These requirements are specific to those individuals who are assigned specifically to the incident on the ground. Law enforcement personnel may also be assigned to the incident on the ground, not in a role associated with the suppression of the fire itself, but functioning in a law enforcement capacity. Wearing the standard law enforcement uniform is appropriate when in this role. In addition, those individuals performing duties associated with the investigation of a wildfire must wear the appropriate PPE associated with the actual incident.

4.8 Anonymous Tip Reporting

The BIA has contracted an anonymous crime reporting hotline run by a national non-profit organization. It allows concerned individuals to provide information regarding crimes (including arson) while remaining totally anonymous. This is useful because:

- Callers remain anonymous and can trust that the information they provide to law enforcement will remain completely confidential.
- Local witnesses can therefore provide information 24-7, undeterred by a lack of trust in local authorities and without the fear of retaliation.
- Publicly promoting the program can act as a deterrent for criminal behavior.

Upon request, the contractor will produce a special flier for suspected arson fires, specific to that event. A photograph of the fire scene makes the flier even more personal. The contractor will also send a news release to the local newspapers, asking for tips about the fire. The WUI/Prevention Specialist can provide the contact for this service.

Callers contact the hotline with information regarding suspected criminal activity related to a particular fire, usually as a result of posters placed in the vicinity of the fire or an advertisement in the local media. Tip information contains names and descriptions of potential suspects. In the past, tips have been distributed to various locations for follow-up by either law enforcement or by local fire investigators.

The tip reporting phone number is: 1-800-472-7766 or 1-800-47-ARSON.

4.9 Regional, Tribal, and BIA Agency Operating Agreements with Law Enforcement

A regional or local operating agreement may be needed to expand on what is expected and required of LEOs and INVFs within the region, Tribe, or BIA Agency. These operating agreements are sometimes referred to as Standard Operating Procedures (SOPs). They should be developed collaboratively by both wildland fire management and law enforcement, and approved and signed by both parties.

The operating agreement needs to provide or contain basic information about local wildfire investigation protocols, policies, procedures, and training that are not contained in this handbook, such as:

- Points of Contact (POC) for law enforcement and wildland fire investigation
- Names and contact numbers of local INVFs and LEOs
- Initial response processes
- Training needs specific to the local situation (i.e., drug labs, gang activity, etc.)
- Specific jurisdictional concerns and which law enforcement agency should be involved (BIA, Tribal, state, etc.)
- Location of evidence storage facilities
- Regular meeting dates between INVFs and LEOs.

If an INVf is responding off-unit, they should obtain copies of any local law enforcement-wildfire investigation operating agreements or SOPs; the host unit's specific fire investigation procedure; and any other local policies that relate to fire investigations at the host unit from the wildfire prevention technician/specialist. In locations where local fire investigation operating agreements or SOPs are not developed, the Delegation of Authority (described in Chapter 2.4.1) given to the INVf should clearly identify and address the basic information listed above.

4.10 Request for Law Enforcement Assistance

Law enforcement assistance will be requested and provided during a wildfire investigation when:

- The INVF is threatened or intimidated in the course of a legitimate jurisdictional investigation. The INVF should withdraw and contact the local Tribal LEO, BIA-OJS or local law enforcement, as appropriate, for assistance. The INVF should not confront a hostile person.
- Traffic presents a safety hazard to the INVF.
- A determination is made that the cause of the wildfire was criminal activity, such as: major crimes, federal misdemeanors, violations of the Code of Federal Regulations (CFR), or violations of Tribal codes.
- Other illegal activities are discovered at the fire scene.
- If suspicious activities are identified at a wildfire scene (e.g., dead body, drug activity, abandoned vehicles, etc.).
- The fire(s) occurred within U.S. border areas that have a history of illegal activities (for example, portions of Arizona or California).
- There is damage to cultural or natural resources or structures.
- Serial arson is suspected.
- Juveniles are suspected to be involved with fire setting.
- Serious injury/accident or fatality occurred at the fire scene.
- When an Arson Task Force is formed.
- A pattern of diversion fires and/or false alarms is discovered.
- If a taped statement/video footage has been developed during the investigation.

INVFs can request law enforcement support through: (a) local BIA/Tribal law enforcement (police/conservation officer); (b) local state/sheriff office; or (c) the District Special Agent in Charge. This referral will depend on the jurisdiction where the fire occurred (Indian vs. non-Indian lands). It can be made by phone, in writing, or in person.

4.11 Jurisdiction

Jurisdiction is established by the ownership where the Ignition Area (fire/crime) is located. The ownership of the GOA should be determined before proceeding to a more complete investigation.

4.11.1 Fires Originating on Indian land

When the origin is on Indian land, the jurisdiction is both federal and Tribal. INVFs and LEOs from both may have the authority to conduct the origin and cause investigation. Tribal contracts

and compacts will spell out the specific authorities taken by each Tribe. An exception to this may occur when jurisdiction is assigned exclusively or partially to the state (Public Law (PL) 83-280). In these cases, the BIA regional office or OJS Special Agent in Charge (SAC) for the District may need to be consulted to clarify who has the authority and responsibility.

4.11.2 Fires Originating on non-Indian land but Causing Damage on Indian land

When the origin is not on Indian land, but there is damage on the Indian land caused by the fire, the Tribe or BIA Agency must request that the local jurisdiction LEO investigate the origin and cause. The Tribe or BIA Agency may provide an INVf, if requested, to the local jurisdiction to assist. All permissions from the landowners to investigate and any search warrants must be obtained by the local jurisdiction LEO.

The Tribal or BIA INVf may conduct any part of the investigation on Indian land up to the property boundary without the need for warrants or landowner permission.

4.11.3 Fires originating on Non-Indian lands and not burning onto Indian lands:

When the fire originates and stays on non-Indian lands (i.e., fee lands; Tribal fee lands; state, county, city, and other lands not under BIA/Tribal jurisdiction), the BIA/Tribal INVf should not conduct an investigation since the BIA/Tribal INVf has no independent authority to enter non-Indian lands to investigate without landowner permission. Exceptions to this are when the BIA/Tribal INVf is formally part of a multi-jurisdiction operation; or, if specifically and formally requested by the jurisdictional authority and approved by their supervisor or the Regional FMO.

4.11.4 PL 83-280

PL 83-280 transfers the authority to investigate and prosecute crimes on Indian lands from the federal government to the state governments. It originally was limited to Alaska, California, Minnesota, Nebraska, Oregon, and Wisconsin (except for the Red Lake and Warm Springs Reservations). Several states have since opted into all or part of its provisions. These additional states are: Arizona, Florida, Idaho, Iowa, Montana, Nevada, North Dakota, South Dakota, Utah, and Washington. An INVf operating in any of these states must determine what portion of law enforcement is under state jurisdiction and on which reservations. The INVf also needs to establish a cooperative relationship with the jurisdictional law enforcement authorities. If possible, a Cooperative Agreement will prevent misunderstandings and reduce conflict.

Chapter 5: Appropriate Use of Funding

Wildland fire suppression activities are funded through an appropriation from the United States Congress. Within the BIA fund codes, program codes and fire codes are assigned. A “FireCode” is automatically assigned for each wildfire on Indian land when expenditures are incurred.

INVs and OJS law enforcement personnel may charge the appropriate time spent to the FireCode for their participation in activities related to the origin and cause determination and suppression of a wildfire. The appropriate funding sources vary from section to section within the Branch of Wildland Fire Management. In addition, the appropriate funding source for OJS law enforcement personnel will also vary depending on the type of work being performed, type of assistance requested, and whether the request is made on a resource order, as qualified in the IQCS for a wildland fire incident.

The following list of examples is not all-inclusive, but it provides some of the more frequent program positions participating in wildland fire origin and cause determination and suppression, and the allowable personnel charges back to a FireCode:

| Base Pay Program | Type of Hours Worked on Fire | Appropriate FireCode Charges |
|--|--|-------------------------------------|
| Preparedness & Prevention | Base | None |
| Preparedness & Prevention | Overtime, Hazard Pay | All |
| Fuels | Base, Overtime, Hazard Pay | All |
| | | |
| Forestry, Land Operations, and other Section | Base, Overtime, Hazard Pay | All |
| | | |
| Law Enforcement – OJS/Tribal, Conservation Officer/Warden* | Base – Normal Law Enforcement or Investigative Duties and Responsibilities. | None |
| Law Enforcement – OJS/Tribal, Conservation Officer/Warden | Base & Overtime – On a resource order as an IQCS qualified INV and off local unit. | All |

**If the position description includes a description of duties that includes investigation, then base pay and overtime is not an authorized expenditure to a FireCode.*

5.1 Funding Options for Off-Unit Investigation Resources

Several options exist for funding INVFs, INTMs, technical specialists, and investigation teams when local resources are unavailable. All of these require close coordination with the Regional WUI/Prevention Specialist and the approval of the Regional FMO.

Long Term Severity (LTS) can be used to fund investigation resources. The LTS request needs to include the type, kind, and number of resources to be funded. Once approved, the resources can charge their time, travel, lodging, per diem, rental vehicles, and supplies to the LTS FireCode.

Short Term Severity (STS) can also be used to fund investigation resources. STS funding is often used when unanticipated activity results in the need for additional investigation resources. STS funds are limited and should be used sparingly. The use of STS funding is normally controlled by the Regional FMO. Once approved, the resources can charge their time, travel, lodging, per diem, rental vehicles, and supplies to the STS FireCode.

Declaring a “**Complex**” is another means of funding investigation resources, when a surge in activity is limited to a relatively small geographic area. The Regional FMO will need to approve this method in consultation with the Regional WUI/Prevention Specialist. This funding method establishes an overall FireCode for the Complex. All individual fires within the Complex have their own FireCodes, but are associated with the Complexes Code. Costs for the Complex are then distributed to the individual FireCodes. This allows for an equitable distribution of costs across all of the associated fires. When using this method, everything except the investigation resources’ time is charged to the Complex FireCode. Their time (including hazard and overtime) is charged to the individual FireCodes.

It is important for investigation resources using any of these methods to charge their time worked on each wildfire investigation to the individual FireCode for that wildfire, to ensure the appropriate distribution of the labor costs.

Another funding method is to order the investigation resources for a single investigation, using that fire’s FireCode to pay for the time, travel, lodging, per diem, rental vehicles, and supplies. Then as other fires occur, the resources involved can charge their time and additional supplies to the new fire’s FireCode.

5.2 Fiscally Accountable Management of INVFs

Investigation personnel are often some of the most costly resources used on a wildfire. INVFs are also an extremely limited resource in Indian Country. With so few qualified BIA/Tribal INVFs, there are often times when no BIA/Tribal INVf is available. It is therefore critically important to manage the deployment of investigation resources conservatively. If conditions change and wildfire activity ceases in the assigned area, the investigation resources should be released back to their home unit or reassigned to an area where they are needed.

Chapter 6: Code of Ethics

The BIA BWFM believes that INVFs need to have clear policy, guidance, and counsel available to help them perform their duties, consistent with the standards established in this handbook. INVFs and trainees must be fully aware of the ethical responsibilities of their position and must strive constantly to live up to the highest standards of wildfire investigation as described in our Code of Conduct Agreement.

All INVFs (including trainees) must sign the Code of Conduct Agreement and submit it to the course coordinator prior to attending any BIA-sponsored FI-210 Wildland Fire Origin and Cause Determination course. For those wishing to attend an FI-210 course sponsored by another federal agency or organization, the agreement must be sent to the appropriate BIA Regional WUI/Prevention Specialist. Failure to sign will result in the individual's INVF qualifications being suspended. Copies will be maintained in each employee's official personnel files. The Code of Conduct Agreement form can be found online at:

<https://www.bia.gov/bia/ots/dfwfm/bwfm/wildfire-prevention-and-education/prevention-resource-library>

Maintaining confidentiality, impartiality, and professionalism throughout the wildland fire origin and cause determination process is mandatory. Data collection, report writing, and the courtroom phases of the investigation must conform to the highest standards. All INVFs working on Indian lands are required to perform their duties in an honest, ethical, and competent manner.

Key elements of professional ethics and conduct that must be followed include:

- Conduct wildfire investigations promptly.
- Conduct wildfire investigations that are respectful of Tribal resources, culture, and traditions and in a manner that inspires the confidence of the public.
- Provide disclosure and finding of fact in an unbiased, professional fashion.
- Avoid alliances that are inconsistent with, and might compromise, an honest unbiased investigation.
- Maintain confidentiality for the protection of innocent parties.
- Develop professional working partnerships with law enforcement, fire services, legal counsel, support services, and juvenile intervention coalitions.
- Comply with all federal, state, Tribal, and local laws and regulations.
- Approach all fires without presumption of cause until all data is collected and analyzed.
- Treat all fire scenes as crime scenes until otherwise determined.

Additionally, the following are operational standards for professional performance that must be adhered to:

- INVEs are limited to determining the origin and cause of wildfires and whether wildfire trespass regarding natural resources and/or agricultural products has occurred.
- Safety, health, and welfare of the investigator and those assisting with the investigation must never be compromised.
- Provide only those services that the investigator is qualified to perform.
- The investigator should update his/her curriculum vitae (CV) and not falsify, misrepresent, or exaggerate academic or professional qualifications.
- Cooperate with other investigating agencies.
- Identify, interview, and treat all witnesses fairly, with respect, and impartially regardless of social, political, racial, ethnic, religious considerations, economic status, physical characteristics, gender, or marital status.
- Make prompt and effective referrals to other agencies.
- Work within the proper chain of command (refer to the Delegation of Authority when off unit).
- Prepare investigative reports that are accurate and clearly written, with all facts reported as simply as possible.
- Make sure that the reports do not contain unsupported allegations, suppositions, or bias and that the presentation follows standard professional practices with a minimum of spelling and grammatical errors.
- Never accept compensation, financial or otherwise, from any entity other than the primary employer (BIA or Tribe).
- If serving as team leader for an investigation task force, make sure that all members of the team/task force comply with each of these operational standards.
- Avoid all known conflicts of interest; document and report all known incidents of conflict of interest.

A conflict of interest may arise when an investigator, or someone else involved in the investigation, has competing professional or personal interests that make it difficult to fulfill investigation duties impartially. The conflict of interest may exist even if no unethical or improper act results from it. Recusal from an investigation assignment may be necessary if a suspect or witness is a friend, relative, or co-worker.

Chapter 7: Wildland Fire Investigator Qualifications

Wildland Fire Investigator Qualifications were established by the NWCG and are published in the NWCG 310-1 National Incident Management System: Wildland Fire Qualification System Guide (current edition). The NWCG qualifications system described in the NWCG 310-1 is a “performance based” system. Trainees must demonstrate satisfactory performance on the critical tasks and skills for the position as observed by an evaluator. The evaluator documents performance in a Position Task Book (PTB). The PTBs can be found on the NWCG’s webpage at: <https://www.nwcg.gov/publications/position-taskbooks>.

PTBs can be initiated before attendance and successful completion of required training. However, trainees cannot become fully qualified for the position until required training has been successfully completed. A trainee must be qualified in the prerequisite position(s) before a PTB can be initiated.

Trainee INVFs, who have not successfully completed the NWCG FI-210 Wildland Fire Origin and Cause Determination training course, need to be closely supervised by a fully qualified INVF. Trainees that have completed the NWCG FI-210 Wildland Fire Origin and Cause Determination normally don’t require the same level of attention and supervision.

The Wildland Fire Qualification System, described in the NWCG 310-1, uses three required elements to establish if a trainee can be certified as meeting the qualifications for a position. These elements are: Required Training; Required Experience; and Physical Fitness Level. The NWCG 310-1 lists two qualification levels for INVFs. The Physical Fitness Level for both of these is:

“**Light** – Duties mainly involve office-type work with occasional field activity characterized by light physical exertion requiring basic good health. Activities may include climbing stairs, standing, operating a vehicle, and long hours of work, as well as some bending, stooping, or light lifting. Individuals can usually govern the extent and pace of their physical activity.”

7.1 INVF Qualifications

The INVF is the most commonly used wildland fire investigator. The INVF is an individual responsible for identifying and securing a wildfire's origin, determining the probable cause, and documenting causal factors in a wildland fire origin and cause report. The INVF is fully capable of conducting most wildland fire origin and cause investigations. The INVF is most commonly supervised by the Incident Commander, a FMO, or a BIA Agency Superintendent. The INVF may work independently or as part of a team. Required training for an INVF is as follows:

NWCG FI-210 Wildland Fire Origin and Cause Determination - This course provides a consistent knowledge and skill base for the INVF. The concepts taught in this course will help an INVF perform at an acceptable level on a national basis without regard to geographic boundaries. The course is presented using lectures, electronic presentations, field exercises, and class discussion. The student’s guide from this course is a recognized reference for wildland fire

investigations conducted by the BIA. The course may require tuition if not hosted by the BIA. The payment method for the tuition will need to be discussed with the Tribe or BIA Agency FMO.

The Federal Emergency Management Agency's (FEMA) ICS 100, Introduction to the Incident Command System (ICS) - This course introduces the ICS and provides the foundation for higher level ICS training. This course describes the history, features and principles, and organizational structure of the Incident Command System. It also explains the relationship between ICS and the National Incident Management System (NIMS). This course is available free online at: <https://emilms.fema.gov/IS100c/curriculum/1.html>.

FEMA's IS-700 NIMS; An Introduction to the National Incident Management System (NIMS) - This course provides an overview of the NIMS. The NIMS defines the comprehensive approach guiding the whole community - all levels of government, nongovernmental organizations (NGO), and the private sector - to work together seamlessly to prevent, protect against, mitigate, respond to, and recover from the effects of incidents. The course provides learners with a basic understanding of NIMS concepts, principles, and components. This course is available free online at: <https://emilms.fema.gov/IS700b/curriculum/1.html>.

Required experience is as follows:

Completion and certification of PTB as an INV. The PTB is available online at: <https://www.nwcg.gov/sites/default/files/products/training-products/pms-311-66.pdf>.

7.2 INTM Qualifications

The INTM is used less frequently. The INTM is an INV with additional training and experience. It was developed to provide senior leadership for investigation teams on serial arson investigations. The INTM commonly supervises several INVs. Required training for an INTM is as follows:

NWCG FI-310 Wildland Fire Investigation: Case Development - This course provides an introduction to the law enforcement case development of major wildland arson, including serial arson. Students are instructed in strategies and tactics to combat serial wildland arson and work in groups to develop a case plan and presentation based on an actual wildland arson case. Course includes extensive pre-course work reading, exercises, and a test. The course may require tuition if not hosted by the BIA. The payment method for the tuition will need to be discussed with the Tribe or BIA Agency FMO.

FEMA's ICS-200 Basic ICS: ICS for Single Resources and Initial Action Incidents - ICS 200 is designed to enable personnel to operate efficiently during an incident or event within the ICS. ICS-200 provides training on and resources for personnel who are likely to assume a supervisory position within the ICS. There is no fee for this training. It can be found online at: <https://emilms.fema.gov/is200b/index.htm>.

Required experience is as follows:

Satisfactory performance as an INVF plus completion and certification of PTB as an INTM.

The PTB is available online at: <https://www.nwcg.gov/sites/default/files/products/training-products/pms-311-90.pdf>.

7.3 Additional Recommended Training for INVFs and INTMs

In addition, the BIA recommends the following courses to support the development of knowledge and skills:

NWCG FI-110 Wildland Fire Observations and Origin Scene Protection for First Responders - The primary emphasis of this course is to teach sound wildland fire observations and origin scene protection practices that enable first responders to a wildland fire scene to perform proper origin scene protection procedures. This course is frequently offered by BIA's Regions, Agencies, and Tribes. There is no cost for attending one of these.

NWCG S-130 Firefighter Training - This course is designed to provide entry-level firefighter skills. Field time is encouraged, and many of the units are set up so they can be taught in either the classroom or the field. The field exercise for Unit 12 is required. A version of L-180, Human Factors on the Fireline, has been included as part of this course. Credit should be issued for both S-130 and L-180 upon completion of this course. When hosted by a federal agency, there is normally no tuition for this course. It is frequently offered by the BIA Regions and Agencies as well.

NWCG S-190 Introduction to Wildland Fire Behavior - This course provides instruction in the primary factors affecting the start and spread of wildfire, and recognition of potentially hazardous situations. S-190 is typically taught in conjunction with or prior to Basic Firefighter Training, S-130. It is designed to meet the fire behavior training needs of a Firefighter Type 2 (FFT2). When hosted by a federal agency, there is normally no tuition for this course. It is frequently offered by the BIA Regions and Agencies as well. There is also a free online version of this course found online at: <https://onlinetraining.nwcg.gov/node/169>.

NWCG S-290 Intermediate Wildland Fire Behavior - This is a classroom-based skills course designed to prepare the prospective fireline supervisor to undertake safe and effective wildland fire management operations. It is the second course in a series that collectively serves to develop fire behavior prediction knowledge and skills. Fire environment differences are also discussed. The course is taught at many fire academies, normally with a nominal tuition. The payment method for the tuition will need to be discussed with the Tribe or BIA Agency FMO. It is occasionally offered by BIA Regions and Tribes with no tuition. There is also a no-cost online version of this course found online at: <https://onlinetraining.nwcg.gov/node/171>.

Investigating Railroad Caused Fires – This course provides the INVF with an understanding of the specific causes of railroad related wildfires. Detailed sections will provide specialized information and techniques to aid in the investigation of railroad related wildfires. It was

developed by the NWCG Wildland Fire Investigation Subcommittee. It is available online through the NWCG at: <https://onlinetraining.nwcg.gov/node/216>.

X-900 Investigation of Power Line Caused Wildland Fires (2013) - This course provides the INVF with a basic knowledge of the specific requirements and protocols necessary to investigate wildfires caused by electric power lines and their related equipment. It was developed by the NWCG Wildland Fire Investigation Subcommittee. It can be obtained by ordering it from the NWCG National Fire Equipment System Catalog – Part 2: Publications at: <https://www.nwcg.gov/sites/default/files/publications/pms449-2.pdf>.

Continuing Education - The BIA occasionally offers continuing education opportunities in the form of Skills Refreshers and Educational Workshops. Other agencies and organizations also provide opportunities for the INVF to increase his/her understanding of new technical and legal developments through conferences and seminars. Each of these opportunities will need to be reviewed in light of the individual INVF's needs and experience level. Information about these opportunities is generally available from the BIA's Regional Wildland Urban Interface/Prevention Specialists.

Technical Writing - Technical writing teaches a student to organize and present their thoughts logically. It also helps students learn to avoid common usage and grammatical errors that can detract from the quality of their message. This training is helpful for the INVF, whose reports are read by attorneys and judges. A poorly written report can impact the credibility of the investigation. Technical writing classes are widely available through colleges, vocational schools, and sometimes offered through DOI Talent. These classes usually have tuition. The cost of the tuition and approval to attend must be discussed with the INVF's supervisor prior to enrollment.

7.4 Incident Qualifications Certification System

The NWCG's IQCS is the BIA's official repository for all training and experience in wildland fire. An individual's record in this system must be maintained in order to support the INVF's status as an expert witness. Regional and Tribal FMOs, and some BIA Agency fire personnel, have access to maintaining the qualifications of personnel assigned to them in IQCS. Physical Fitness; successfully completed training; experience; and progress on PTBs are recorded in this system. When the qualifications are met, the BIA Agency, Tribe, or Regional Office may certify a trainee as being fully qualified.

7.5 The INVF as an Expert Witness

The importance of maintaining qualifications; having a systematic approach; applying a standard methodology; maintaining a current CV; and following the standards in this handbook cannot be overstated. In legal proceedings involving wildland fire, the success of the entire case often rests on the admissibility of the Wildland Fire Origin and Cause Investigation Report and the INVF's testimony.

Unless the INVF is also an LEO, the INVF's testimony (the wildland fire origin and cause investigation report) is as an "expert witness". The qualifications process discussed in this chapter is necessary to help establish the INVF's credibility as an expert. Opposing attorneys will often raise questions about the qualifications of an expert witness. The standards for expert witness testimony are found in Federal Rule of Evidence 702. Generally, under Rule 702, a witness is qualified as an expert by knowledge, skill, experience, training, or education. The expert witness's testimony may provide "scientific, technical, or other specialized knowledge" that can "assist the trier of fact."

The reliability of the expert's testimony is determined by the trial judge as the "gatekeeper" using the Daubert Standard. *Daubert v. Merrell Dow Pharmaceuticals, Inc.*, 509 U.S. 579 (1993), is a United States Supreme Court case determining the standard for admitting expert testimony in federal courts. In *Daubert*, the Court established that expert testimony must be *relevant* and *reliable*. The Daubert standard tests the reliability of an expert's testimony based on four things being established:

1. That the theory is testable (has it been tested?)
2. That the theory has been peer reviewed (peer reviewing usually reduces the chances of error in the theory).
3. The reliability and error rate (100% reliability and zero error are not required, but the rates should be considered by the trial judge).
4. The extent of general acceptance by the scientific community.

There is usually an assessment of the INVF's qualifications as an expert in a hearing, known as the "Daubert hearing." This hearing is conducted by a trial court judge to determine the admissibility of expert testimony. It is normally conducted before the trial begins and determines which evidence or testimony will be presented to the jury. In criminal cases in some state courts, qualifying of expert witnesses may be done during the opening of each expert's testimony. During, or prior to the Daubert hearing, the INVF is usually asked to produce their current CV. The CV is reviewed by the trial judge and attorneys for both sides. The INVF should expect to be questioned about anything on the CV.

Daubert hearings are used extensively in civil court cases. The Daubert standard applies to all federal courts and to courts in approximately half of the states.

A complete discussion of the Daubert standard; civil and criminal trial processes; and how to prepare for testimony can be found in Chapter 8 of the NWCG PMS 412. The NWCG PMS 412 can be found online at: <https://www.nwcg.gov/sites/default/files/publications/pms412.pdf>.

Definitions

- A. Arson**, according to common law, is the malicious and willful burning of another's dwelling, outhouse, or parcel. By most modern statutes, it is the intentional and wrongful burning of someone else's, or one's own, property. Charging someone with this crime frequently requires proof of malicious or wrongful intent.
- B. The Curriculum Vitae (CV)** is a written statement describing the fire investigator's employment history, training received, training conducted, professional affiliations, papers or publications written, professional resources used, and additional qualifications. It is used by the trial judge to help determine if a witness qualifies as an "expert witness." It is similar to a resume.
- C. The General Origin Area (GOA)** is the area of the fire identified using macro scale indicators, witness statements, and the fire behavior context as probably containing the origin. It may be a limited area or several acres in size but is typically less than one half acre in size.
- D. The Ignition Area** is the smallest location in which a wildland fire investigator can identify where a heat source and fuel interacted with each other and a fire began.
- E. Indian Country** is a term defined at 18 U.S.C. 1151 as:
- All land within the limits of any Indian Reservation under the jurisdiction of the United States Government, notwithstanding the issuance of any patent, and including the rights-of-way through the reservation.
 - All dependent Indian Communities within the borders of the United States whether within the original or subsequently acquired territory thereof, and whether within or without the limits of a state.
 - All Indian allotments, the titles to which have not been extinguished, including rights-of-way running through the same.
- F. Indian land** is an inclusive term describing all lands held in trust by the United States for individual Indians or Tribes, or all lands, titles to which are held by individual Indians or Tribes, subject to federal restrictions against alienation or encumbrance, or all lands which are subject to the rights of use, occupancy, and/or benefit of certain Tribes.
- G. The Specific Origin Area (SOA)** is a smaller area within the GOA where the fire's direction of spread was first influenced by fuel, weather, and/or topography. The SOA will contain the Ignition Area. Generally, this area is characterized by subtle and microscale fire pattern indicators as a result of less intense burning associated with the initial stages of the fire.
- H. A witness** is someone who has firsthand knowledge about a crime or significant event through their senses (e.g., seeing, hearing, smelling, touching) and can help certify important considerations to the crime or event. A witness who has seen the event firsthand is known as

an “eye-witness.” Witnesses are often called before a court of law to testify in trials after taking an oath.