Archaeology Audit Program

BC Oil & Gas COMMISSION
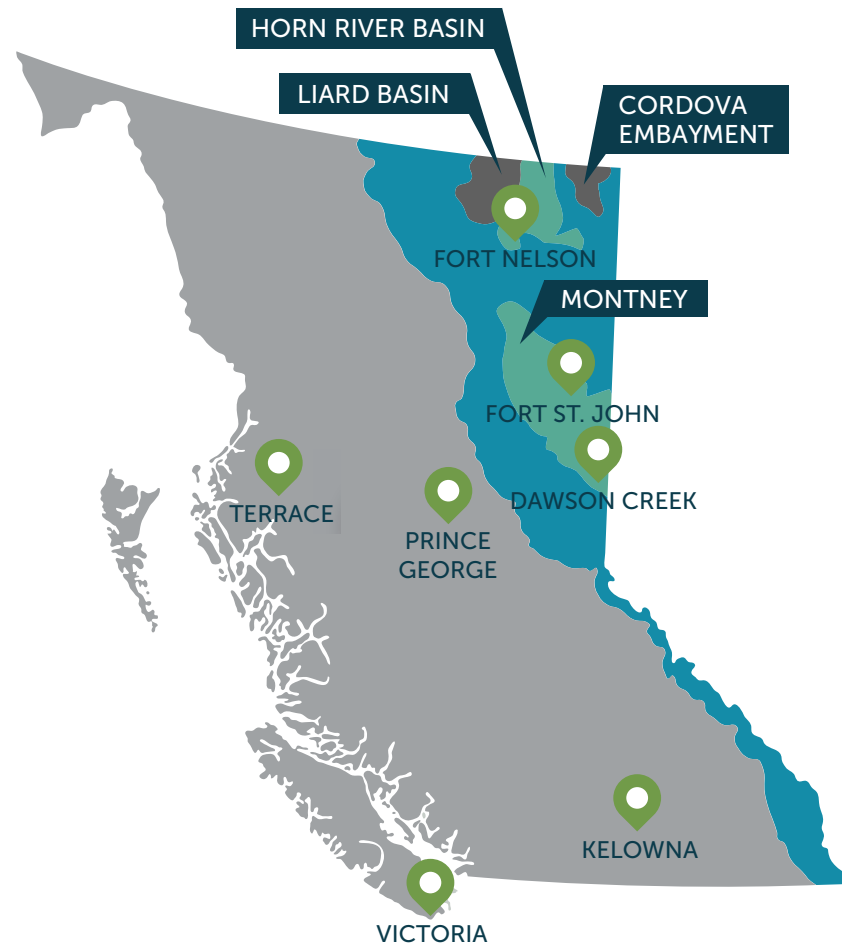
2020 Report

Role of the

BC OIL AND GAS COMMISSION

The BC Oil and Gas Commission (Commission) protects public safety and safeguards the environment through the sound regulation of oil, gas and geothermal activities in B.C.

From exploration through to final reclamation, we work closely with communities, First Nations, and land owners, and confirm industry compliance with provincial legislation.

We are committed to advancing reconciliation and establishing close working relationships with Indigenous peoples throughout the energy life cycle.

With more than 20 years' dedicated service, the Commission is committed to safe and responsible energy resource management for British Columbia.

For general information about the Commission, please visit bcogc.ca or phone 250-794-5200.

HORN RIVER BASIN

LIARD BASIN

CORDOVA EMBAYMENT

FORT NELSON

MONTNEY

FORT ST. JOHN

DAWSON CREEK

TERRACE

PRINCE GEORGE

KELOWNA

VICTORIA

The Commission's workforce consists of over 280 employees operating out of seven locations - Fort Nelson, Fort St. John, Dawson Creek, Terrace, Prince George, Kelowna and Victoria, with the largest number of employees concentrated in Fort St. John, the heart of oil and gas activity in the province. The offices in Fort Nelson and Dawson Creek ensure the Commission's presence in the communities of the Horn River Basin and Montney gas plays respectively.

OUR VISION

Safe and responsible energy resource development for British Columbia.

OUR MISSION

We provide British Columbia with regulatory excellence in responsible energy development by:

- Protecting public safety,
- Safeguarding the environment, and
- Respecting those individuals and communities who are affected

OUR VALUES

Transparency is our commitment to be open and provide clear information on decisions, operations and actions.

Innovation is our commitment to learn, adapt, act and grow.

Integrity is our commitment to the principles of fairness, trust and accountability.

Respect is our commitment to listen, accept and value diverse perspectives.

Responsiveness is our commitment to listening and timely and meaningful action.

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INTRODUCTION

PURPOSE OF REPORT

The Commission introduced the Archaeology Audit Program (AAP) in 2008 to assess oil and gas companies' (permit holders) ability to manage archaeology resources. The AAP was created as a necessary component of the performance-based and professional reliance review process for the management of archaeology resources by permit holders. It is the permit holders' responsibility to ensure all legal and regulatory obligations are met.

Oil and gas applicants are expected to engage archaeology professionals to evaluate archaeology conflicts within their proposed development areas. It is the Commission's expectation that under such a process, permit holders take responsibility and are accountable for the protection and management of heritage resources. Permit holders must ensure planning and development activities comply with the Heritage Conservation Act (HCA) and meet conditions set out by the Commission.

To assist permit holders in achieving best practices when managing archaeology resources, the Commission provides support throughout the entire lifecycle of each project. The AAP is engaged at the post-construction phase of the project when the Commission evaluates the effectiveness of the permit holder's performance by auditing their archaeology management system.

Each audit cycle considers changing trends in the oil and gas industry to ensure all aspects and types of development are considered. Previous audit results help focus the Commission's resources on permit holders who have scored poorly in the past. Permit holders selected for audit, but who have produced exemplary audit results in past audits, may be exempt from the current audit and replaced through random selection.

This report details the results of the 2020 AAP for eight audited permit holders and includes observed best practices, as well as noted opportunities for improvement.

AUDIT PROCESS

The 2020 AAP process was organized into nine audit modules. Five of the modules focused on the main categories of management systems: Process Creation and Management, Risk and Risk Management, Communication, Record and Document Control, and Compliance Process and Knowledge. Questions within these modules capture specific aspects of archaeological management systems and are designed to analyze the effectiveness of the system. The remaining four modules included in the audit program assess the practical realities of archaeological management systems: Project-Specific Questions, Document Review, Field Inspection, and Previous Audit. Questions within these modules captured specific aspects of functioning archaeological management systems and were designed to analyze how effectively those systems were operating based on past audit results, published best practices, and professional knowledge.

The 2020 AAP was comprised of three components: an interview, document review and field visit. Module 1 through Module 7 were evaluated through the interview component of the audit, while the document review was scored in Module 8 and the field visit was scored in Module 9. In accordance with health and safety guidelines and recommendations regarding COVID-19, the interview component of the audit was conducted virtually and utilized video conferencing. Similarly, COVID-19 restrictions affected the field visits for two of the auditees, which resulted in only partial completion of the field visit for one auditee, and the cancellation of the field visit for the other auditee. The inability to complete the field visit had no adverse scoring for the audited company, nor to the overall scoring of the audit.

Each audited permit holder received an individual report detailing the results of the audit. The reports provided recommendations for measures that may help improve management practices or controls.

OBJECTIVES AND PRINCIPLES

THE AUDIT TEAM

The 2020 AAP team consisted of a Lead Auditor from the Commission's Heritage Conservation Program (HCP) staff, and two additional audit team members. The audit team has extensive experience in reviewing and advising on the work of both oil and gas permit holders and archaeologists working in the province of B.C. Additionally, ISO 9001 and 14001 lead auditor training is provided to Commission HCP staff.

Archaeology site that has been avoided next to a pipeline right of way.

PRIMARY OBJECTIVES

The AAP has two primary objectives:

1. **To ensure the permit holder's management systems are adequate for meeting legislative and regulatory obligations.** Through a document review and field examination process, the annual archaeology audit analyzes the ability of the permit holder's management system to meet its obligations as they apply to legislation, permit conditions and other requirements under which industry permit holders are operating.

2. **To gather baseline data to establish procedures for best management practices for archaeology resource management within the oil and gas sector of B.C.** Innovative and successful practices are highlighted annually in the Archaeology Audit Report within the context of cumulative recommendations for improvement. The Archaeology Audit Report recommendations should be used by all companies as best management practices to continually improve their processes.

The AAP is a systematic process which relies on the principles of independence and objectivity. Specifically, the following principles guide the conduct of this audit and the presentation of the audit results:

- Auditors shall act in an ethical manner and make decisions by applying due professional care based on evidence obtained during the audit. Auditors will not act outside their areas of competence and knowledge.
- Auditors will be impartial and independent of the activity they are auditing, and act without bias or prejudice.
- Confidential information reviewed or obtained during the audit process will be held in confidence by the auditors and only included in the audit report where the information is relevant to an audit finding.
- Audit results will be presented in a fair and accurate manner and will truthfully reflect the audit activity and evidence.

SAMPLING METHOD

The 2020 Archaeology Audit Program Procedure Manual (Manual) is a complete guide for the audit process at the Commission and is available on the Commission's website. It should be referenced for complete methodology and sampling details to supplement this report. The manual is modified for each new audit to reflect changes in sampling strategies and audit protocols. The manual is updated prior to each new audit year and details sampling rationale and provides proven best management practices for auditees to review.

The parent sample for the 2020 audit was chosen from a total population of 4,513 applications approved from 2017-2019 (including 1,759 applications for amendments) applied for by 122 companies[1]. Projects constructed in 2019 were selected and evaluated for archaeological concerns, reducing the total to 27 permitted projects from 13 companies. The sample for the 2020 audit consisted of one constructed project from each of eight companies.

Figure 1 illustrates the distribution of field audit sites conducted to date through the AAP, including the 25 archaeology sites associated with eight constructed projects from the 2020 AAP. All field audit locations as well as the sites not included in field inspections due to COVID-19 related restrictions are illustrated on the figure to best represent the scope of the 2020 AAP.

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[1] The total number of companies includes duplicate entries as a result of permit holder name change(s) or subsidiary corporations.

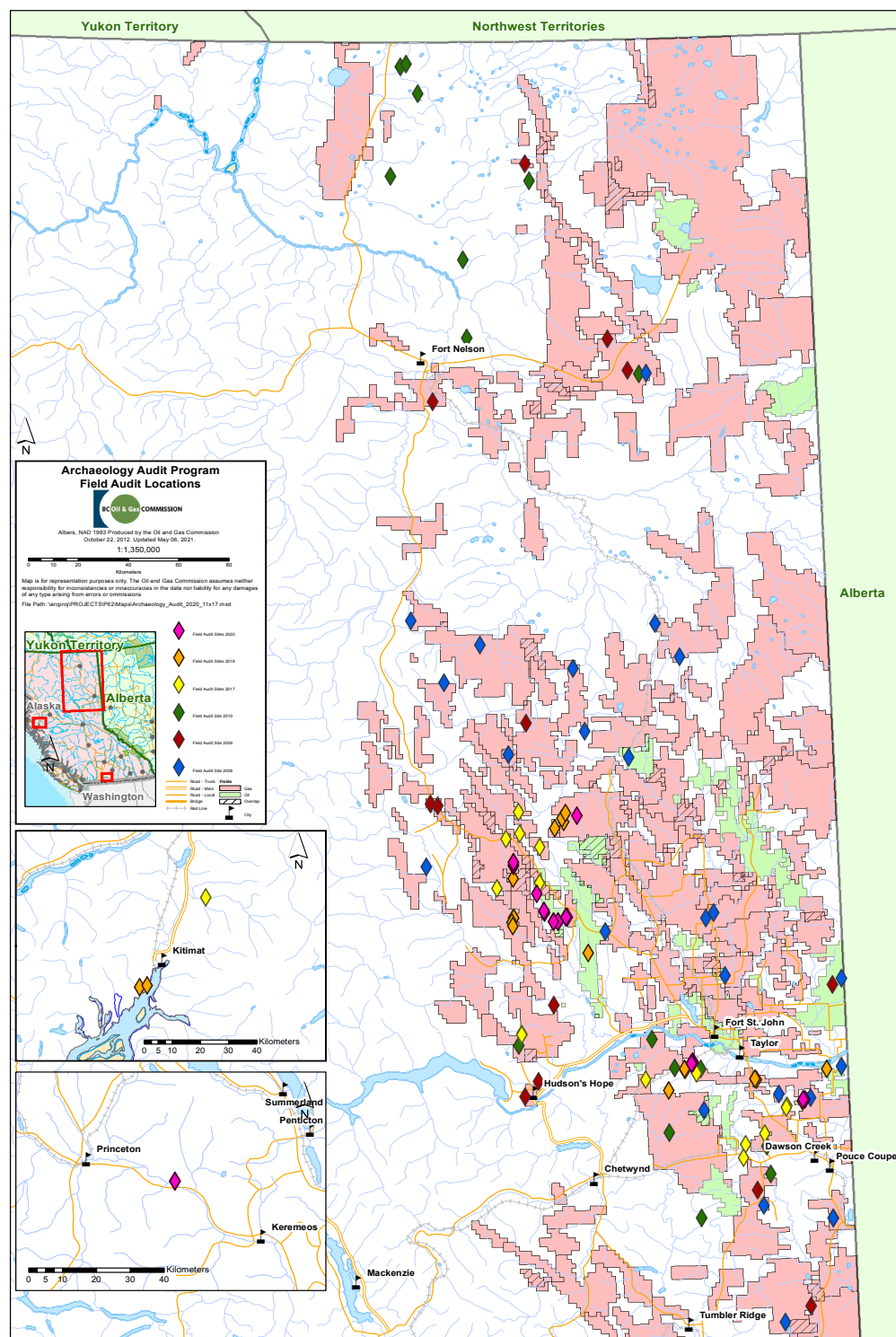**FIGURE 1:** CUMULATIVE MAP OF ARCHAEOLOGY AUDIT PROGRAM LOCATIONS

TABLE 1: MEASUREMENT CRITERIA AND FUNCTIONAL OBJECTIVES

Module	Criteria Measured	Functional Objective
Module 1	Process Creation and Management	Supports adherence to legislation and regulatory requirements through established processes.
Module 2	Previous Audit	To establish if recommendations from the previous audit have been implemented.
Module 3	Risk and Risk Management	To establish the level of risk a company is willing to take and how that risk is managed.
Module 4	Communication	To establish communication competence between administrative/ office personnel and field crews.
Module 5	Record and Document Control	Transfer of information between relevant parties to support project success and regulatory compliance.
Module 6	Compliance Process and Knowledge	Level of knowledge for processes that ensure compliance with regulatory requirements and legislation.
Module 7	Project Specific Questions	To establish how the permit holder's management system was implemented in a construction context. The specific questions to be asked will be tailored to each proponent and file.
Module 8	Document Review	To establish if the appropriate documents were provided for the audit.
Module 9	Field Inspection	To observe and determine if the management system functioned successfully in the field.

DATA ANALYSIS

Management systems consist of several components that work together and may be examined independently to evaluate the overall strength of the system. This audit examines nine (9) main components, referred to in this audit as modules. Each module is designed to examine specific aspects of the permit holder's management system in order to analyze the extent to which the management system is functioning. The information gathered from each module helps identify gaps between the recommended approach and the approach used by the applicant companies. The results of document reviews, interviews and field inspections may identify possible weaknesses that could cause a system failure. Table 1 outlines the criteria measured and corresponding functional objective for each module.

Fencing around an avoided archaeology site, next to a pipeline right of way.

Table 2 details each question presented during the audit and the modules to which the questions relate. The scoring criteria for each question was derived from observations of past best and worst practices demonstrated by permit holders. Auditee responses to each question were compared to the control set of possible answers and a finding assigned.

Archaeology site fencing and flagging.

Module 1: Process Creation and Management
1. Can you describe your role and the work you do for the company?
2. Were you the field supervisor for the audited project?
Module 2: Previous Audit
1. Have all the attendees read the audit report from last year?
2. Have any recommendations been implemented?
Module 3: Risk and Risk Management
1. What is the process to ensure all project areas have been reviewed/assessed by an archaeologist?
2. Every company has a process in place to ensure the sites have been flagged/marked prior to construction commencing.
a. How do you know if the flagging is complete and do you have a document on file?
b. Is there a position responsible for tracking the completion of archaeology site flagging?
c. Is there a process for tracking the completion of archaeology site flagging?
3. Who in the field is accountable for ensuring the site is avoided and is there a document process?
a. What documents are provided to field staff to ensure the mitigation (site avoidance) is successfully implemented?
Module 4: Communication
1. Before any archaeology assessment takes place, is there a documented process in place between the office and archaeological contractor for the communication of archaeological field work requirements?
2. Are field supervisors included in discussions about potential archaeological mitigation to ensure the mitigation will be feasible in the field during construction?
3. Is there a documented meeting held to discuss archaeological concerns between the person in the office who prepared the construction package and the field supervisor when the construction package is handed off?
4. To account for the involvement of different contractors and field crews, is *each* crew specific to *each* construction activity oriented on the specific location of archaeology sites? (ex. loggers vs. pipeline crews)
a. If no, how do you manage for the risk to archaeological site impact if crews are unaware of the site locations?
5. Is training on the chance find procedure provided to crews?
a. Do crews sign off on the procedure and is this tracked?
6. Do you discuss archaeology concerns specific to *each* day at the kick-off/tail-gate meeting every morning?
a. Is attendance at project meetings tracked and are working instructions signed onto?
Module 5: Record and Document Control
1. How are archaeology specific permit conditions and obligations tracked?
a. After receiving our selection letter, have all outstanding reports been submitted?
2. How is it confirmed in the office that the construction package is complete, prior to distribution to field staff?
3. How is it confirmed in the field that the construction package is complete and is this process tracked and signed off on?
4. If documents are revised, what is the process of updating them in the construction package and how is that tracked?

Module 6: Compliance Process and Knowledge
1. What happens if the construction crew identifies artifacts during construction?
a. Is there a procedure, and what is its name?
b. Can you show me the procedure?
2. What is the process for accidental entry into an archaeological site during construction?
3. Is there a post construction inspection conducted to confirm mitigation strategies (ex. site avoidance, directional drill) were followed?
a. Is there a specific person responsible for the inspection?
b. Are post construction inspections tracked?
c. Can you show me how post construction inspections are tracked?
4. Are you familiar with the legislation that protects archaeology sites?
a. Are crews and/or staff members informed (trained) on the legislation protecting archaeology sites and the penalties associated with the disturbance of those sites?
Module 7: Project Specific Questions
The specific questions to be asked were tailored to each permit holder and file.
Module 8: Document Review
1. Is this document contained within the construction package?
a. AIF
b. Archaeological Assessment Report (AIA, PFR, AOA)
c. Commission-issued Development Permit
d. Commission-issued Mitigation Approval Letter
e. Project/Construction Plans
f. Archaeology Management System Plan (if available)
g. Section 12.4 Permit (if applicable)
h. Monitoring Report (if applicable)
i. Stop-Work/Chance Find document(s)
j. Check List
k. Post-Construction Inspection & related documents (if applicable)
l. Any documents that will assist the construction supervisor with answering the interview questions (project communication records, work instructions, training manuals, maps, pre-construction package, etc.)
Module 9: Field Inspection
1. Have mitigation recommendations been followed?
2. Are cultural materials visible in disturbed areas?
3. Do field observations match information presented in applicable documentation?
4. If the construction supervisor attends the site visits, are they able to lead the audit team to the sites?

View of wellsite in northeast B.C.

View of an avoided archaeology site. Fencing was removed after construction.

AUDIT FINDINGS

The audit findings reflect the assessed risk for management system failure or success based on deficiencies or best practices noted during the audit. Audit findings have four categories representing a range from best practices to non-compliance vulnerability. A fifth category, Information Request (IR), tracks when the initial information received during the audit was insufficient to assign a finding and further information was requested from the permit holder. Based on the additional information received, an IR finding was revised to a finding in one of the four main categories. Each standard finding and definition is detailed in Table 3.

The results of the 2020 AAP indicated an overall satisfactory scoring for most auditees. Table 4 contains the anonymous individual results organized by audited companies. Figure 2 shows the cumulative scoring by findings category from the 2020 AAP for all companies.

TABLE 3: FINDINGS CATEGORIZATION

FINDING CATEGORY	DESCRIPTION
EXEMPLARY PERFORMANCE (EP)	Innovative, pro-active or practices that exceed requirements.
SATISFACTORY (S)	Sufficient management system to support compliance with legal and regulatory requirements.
OPPORTUNITY FOR IMPROVEMENT (OI)	Management system with weaknesses that could lead to system breakdown. Minimal effort was afforded for development of a specific management plan to manage archaeological resources or ensure compliance with legal and regulatory requirements.
NON-CONFORMANCE (NC)	Regulatory, legal or other requirements were not met.
INFORMATION REQUEST (IR)	Additional information is requested from the permit holder to clarify the answer provided during the audit interview.

TABLE 4: CUMULATIVE FINDINGS BY INDIVIDUAL COMPANY

	EP	S	OI	IR	NC	N/A
COMPANY A	2	39	8	2	0	11
COMPANY B	4	36	6	2	0	14
COMPANY C	12	32	3	1	0	14
COMPANY D	14	33	1	1	0	13
COMPANY E	2	20	8	7	0	25
COMPANY F	2	27	20	0	0	13
COMPANY G	4	31	11	1	0	15
COMPANY H	7	37	3	1	0	14

FIGURE 2: CUMULATIVE SCORING BY FINDINGS CATEGORY (ALL COMPANIES)

FIGURE 3: FINAL RATINGS FOR IR SCORES

EP ■ S ■ OI ■ NC ■ IR

From IR to EP ■ From IR to S ■ From IR to OI
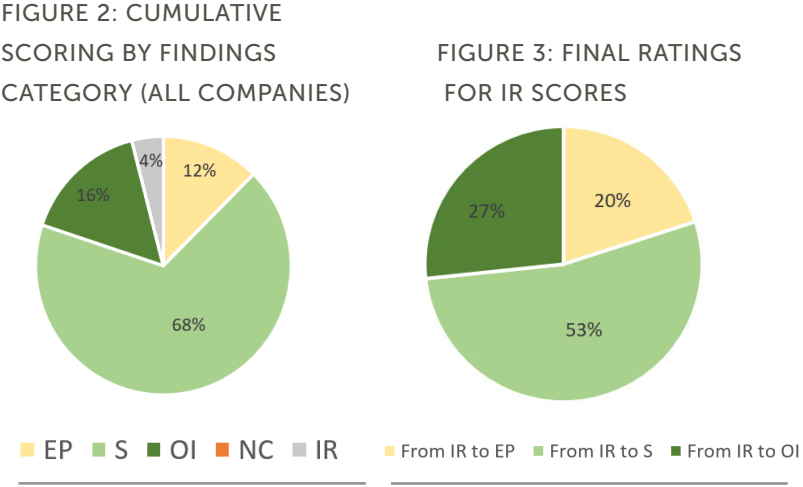
Sorting by cumulative response for each question, Table 5 illustrates an overall trend of strengths and a few weaknesses over a range of management system components. The questions with the highest number of OI scores were Module 4 Questions 5 & 5A; Module 5, Question 1A; Module 6, Question 2; Module 6 Question 3; and Module 6 Question 4A. The questions with the highest number of OI findings were related to training, specifically regarding knowledge of staff on the legislation protecting archaeology sites and the penalties associated with site disturbance, training on archaeological chance find procedures, and procedures regarding potential accidental entry into an archaeological site during construction. Another question with a high number of OI scores included the implementation of post-construction inspections, to confirm that archaeological site mitigation strategies have been followed during construction. Finally, outstanding archaeology report submissions for many of the auditees resulted in a high OI finding for the related question.

The greatest number of EP scores were found in Module 1, Question 1 & 2; Module 2, Question 1; Module 3, Question 3A; and Module 6, Question 1A. The question with the highest number of EP findings was related to the attendance of the original field supervisor(s) for the audit interview. The remaining high EP scoring questions had the same quantity of EP findings. One question was related to the documents provided to field staff to ensure mitigation is successfully implemented, with a high score indicating that documents such as the mitigation approval letter, applicable archaeological reports or a written site monitoring process were provided. Another question was related to previous audits and the implementation of previous recommendations. Finally, one question was related to archaeological chance finds, with a high score indicating that the company has a written procedure specific to archaeology chance finds during construction.

A number of questions resulted in requests for additional information in order to clarify responses or to provide documentary evidence. The greatest number of IR scores were found in Module 6, Question 1B and Question 3C. The question with the highest number of IR scores was related to how post-construction inspections were tracked. The second question was regarding archaeological chance find or stop-work procedures in the event artifacts are identified by crews during construction. For questions that were initially assigned an IR score, approximately half resulted in an S score once the applicable information was received. The remaining IR scores resulted in an OI score (27 per cent) or an EP score (20 per cent). Figure 3 shows the final ratings of initial IR scores. It should be noted that six out of the eight audited companies each received one to two IR scores, while one company received none. One company received seven IR scores.

TABLE 5: CUMULATIVE RESULTS BY INDIVIDUAL QUESTIONS

	EP	S	OI	IR	NC	N/A
Module 1: Process Creation and Management						
Question 1	4	4	0	0	0	0
Question 2	8	0	0	0	0	0
Module 2: Previous Audit						
Question 1	3	2	1	0	0	2
Module 3: Risk and Risk Management						
Question 1	2	5	1	0	0	0
Question 2	-	-	-	-	-	-
a.	2	6	0	0	0	0
b.	1	6	0	1	0	0
c.	0	5	2	1	0	0
Question 3	0	8	0	0	0	0
a.	3	5	0	0	0	0
Module 4: Communication						
Question 1	2	5	1	2	0	0
Question 2	1	7	0	0	0	0
Question 3	1	6	1	0	0	0
Question 4	2	6	0	0	0	0
a.	0	0	0	0	0	8
Question 5	0	3	5	0	0	0
a.	1	2	5	1	0	0
Question 6	0	8	0	0	0	0
a.	0	8	0	0	0	0

	EP	S	OI	IR	NC	N/A
Module 5: Record and Document Control						
Question 1	2	4	1	1	0	0
a.	2	2	4	0	0	0
Question 2	2	5	0	1	0	0
Question 3	0	6	2	0	0	0
Question 4	0	5	3	0	0	0
Module 6: Compliance Process and Knowledge						
Question 1	2	4	2	0	0	0
a.	3	3	2	0	0	0
b.	2	2	1	3	0	0
Question 2	1	3	4	0	0	0
Question 3	2	2	4	0	0	0
a.	0	6	2	0	0	0
b.	2	2	3	1	0	0
c.	0	1	3	4	0	0
Question 4	0	7	1	0	0	0
a.	2	0	6	0	0	0
Module 7: Project Specific Questions[2]						
Question 1[3]	0	1	0	0	0	7
Module 8: Document Review[4]						
Question 1	-	-	-	-	-	-
a. AIF	0	6	1	0	0	1
b. Archaeology Assessment Report	0	7	0	0	0	1
c. Commission-issued Development Permit	0	7	0	0	0	1

	EP	S	OI	IR	NC	N/A
d. Commission-issued Mitigation Approval Letter	0	7	0	0	0	1
e. Construction Plans	0	7	0	0	0	1
f. Archaeology Management Plan	0	1	0	0	0	7
g. Section 12.4 Permit	0	1	0	0	0	7
h. Archaeology Monitoring Report	0	2	0	0	0	6
i. Stop Work/Chance Find Document	0	6	2	0	0	0
j. Check List	0	6	0	0	0	2
k. Post-Construction Inspection	0	2	0	0	0	6
l. Other/Additional Documents	0	3	0	0	0	5
Question 2	-	-	-	-	-	-
a. AIF	0	6	1	0	0	1
b. Archaeology Assessment Report	0	7	0	0	0	1
c. Commission-issued Development Permit	0	7	0	0	0	1
d. Commission-issued Mitigation Approval Letter	0	7	0	0	0	1
e. Construction Plans	0	7	0	0	0	1
f. Archaeology Management Plan	0	0	0	0	0	8
g. Section 12.4 Permit	0	1	0	0	0	7
h. Archaeology Monitoring Report	0	2	0	0	0	6
i. Stop Work/Chance Find Document	0	0	2	0	0	6
j. Check List	0	0	0	0	0	8

	EP	S	OI	IR	NC	N/A
k. Post-Construction Inspection	0	0	0	0	0	8
l. Other/Additional Documents	0	0	0	0	0	8
Module 9: Field Inspection						
Question 1	0	7	0	0	0	1
Question 2	0	7	0	0	0	1
Question 3	0	7	0	0	0	1
Question 4	0	3	0	0	0	5

HIGHEST NUMBER OF OI SCORES:
Module 4, Question 5 & 5A
Module 5, Question 1A
Module 6, Question 2
Module 6, Question 3
Module 6, Question 4A

HIGHEST NUMBER OF EP SCORES:
Module 1, Question 1 & 2
Module 2, Question 1
Module 3, Question 3A
Module 6, Question 1A

[2] Only one audited company answered project specific questions under Module 7. No project specific questions were determined for seven companies at the time of the audit.
[3] One cumulative score is assigned for the project specific questions under Module 7.
[4] Two scores were assigned for each document in Module 8. Question 1 refers to the inclusion of the specific document in the construction package, while question 2 refers to an overall score assigned for each document.

No Work Zone flagging around an archaeology site that was avoided through directional drill of a pipeline.

DISCUSSION

Archaeology site fencing along pipeline right of way.
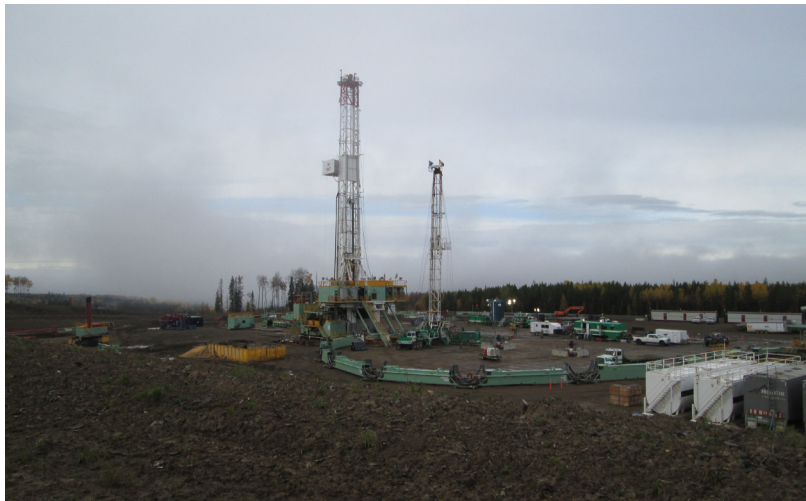
View of a wellsite in northeast B.C.

It is imperative the appropriate interviewees are identified by the audited permit holders and they are present for the interview and, if possible, the field inspection. Ideally, this would include the person in charge of compiling and delivery of the construction package to the field crew and the construction supervisor responsible in the field for the project under audit. Understandably, these employees may no longer be with the company, but a successor holding lateral and current positions is expected to be briefed by the permit holder and present for interview. The results of the 2020 AAP indicate audited permit holders are making an appreciable effort to ensure the appropriate interviewees are in attendance for the audit interviews as demonstrated through the exemplary and satisfactory scores in Module 1.

Information Request scores accounted for four per cent of the cumulative scoring, which is a lower percentage than the previous 2018 AAP IR scoring[5]. To note, the four per cent of IR scores include Company E, which accounted for 46 per cent of IR scoring (seven out of the total 15 IR scores). As an outlier, when removed, the IR percentage decreases to two per cent of the total cumulative scoring. These results along with the exemplary and satisfactory scores of Module 1 suggest that overall, companies are preparing for the audit accordingly resulting in a productive interview process for both the auditor and the interviewees from the auditee company.

Audited permit holders received individual draft results reports on the successes and weaknesses within their management systems detected during the audit. The auditees were provided a 14-day response period to comment on the results. Final reports incorporated any received feedback and comments and were distributed to all companies following the closure of the response period.

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[5] IR scores accounted for six per cent of the cumulative scoring in the 2018 AAP.

OPPORTUNITIES FOR IMPROVEMENT

All audited companies received at least one opportunity for improvement (OI). The quantity of OI findings by company ranged from one at the low end to 20 at the high end and are illustrated in Figure 4.

Overall, cumulative OI findings were identified in six of the nine modules. Module 1, Module 7, and Module 9 had no OI scores.

The following list includes some of the findings and observations considered weaknesses in archaeology management systems as observed in the 2020 AAP:

- Six companies indicated their crews and staff members were uninformed or untrained regarding the legislation protecting archaeology sites and the penalties associated with their disturbance.
- Five companies indicated formal training on the archaeological chance-find procedure was not provided, and that chance-find training was not tracked.
- Four companies did not conduct a formal post-construction inspection to confirm that archaeological mitigation strategies were followed.

FIGURE 4

Opportunities for Improvement (OI) by Company
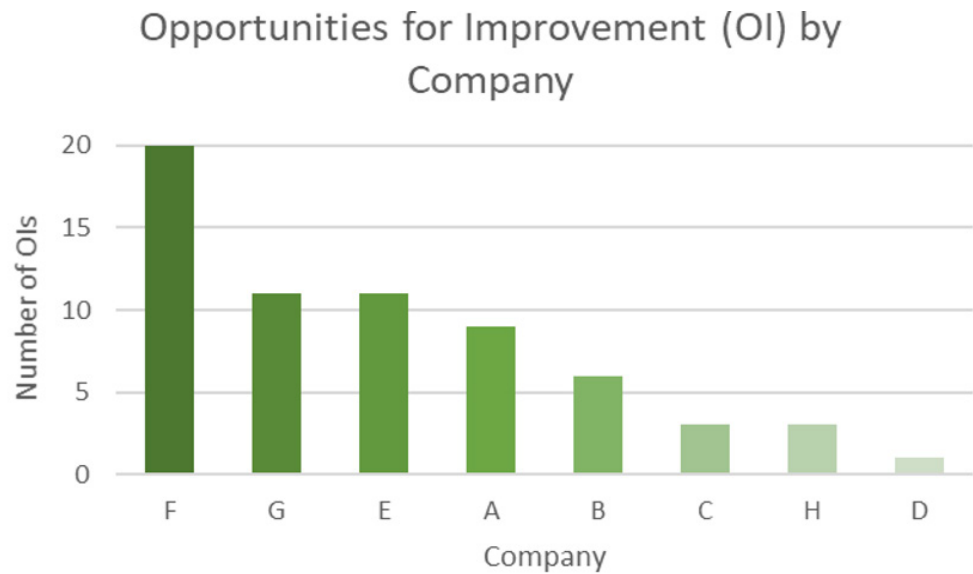
View of No Work Zone flagging around an archaeology site.

RECOGNIZED BEST PRACTICES 2020

Below is a list of recognized exemplary practices (EP) by companies and observed in the 2020 audit.

Have the field supervisor responsible for constructing the audited project(s) available for interview during the audit program; all eight companies asserted this practice.

Have an internal policy or procedure to ensure all project areas have been assessed by an archaeologist; two companies asserted this practice.

Each crew specific to each construction activity receives an orientation on the specific location of archaeology sites in relation to the project and how they are indicated (ex. flagging) in the field; two companies asserted this practice.

Have a documented 'Chance Find' procedure should artifacts be identified during construction; three companies asserted this practice; it is a highly recommended practice.

A formal post-construction inspection is conducted to confirm archaeological mitigation strategies were followed and include a documented procedure for tracking inspections; two companies asserted these practices.

CUMULATIVE BEST PRACTICES (2008-2020)

Below is a list of the cumulative best management practices observed in previous audits:

1. An on-site construction supervisor provides field orientation for ground crews prior to project start-up when archaeologically sensitive areas exist within a development.

2. Specific individuals are responsible for ensuring all regulatory and legislated archaeological requirements are met for each development.

3. Transfer and receipt of required documentation to construction crews is completed prior to project commencement. The documents include archaeology reports and Commission-accepted site mitigation strategies if applicable.

4. Development of a written archaeology resource management plan and formalized standard operating procedures. The management plan fully addresses and includes the following:
- Relevant legislative and regulatory requirements;
- Processes for ensuring the completion of archaeological assessments and the timely submission of archaeological reports to the Commission;
- Checklists to ensure all archaeological requirements are completed prior to construction activities;
- Processes for fulfillment of requirements surrounding archaeological assessment and site avoidance requirements should range from high level planning to individual task assignments;
- A briefing of staff, contractors and land agents to ensure familiarity with the contents of the management plan.

5. Create or refine existing tracking systems to include project status and archaeology report submission dates. Emphasis placed on tracking and ensuring information regarding archaeology assessments and site management is accurately and graphically related to field staff.

6. Contact the Commission periodically to reconcile records for regulatory obligations.

7. Develop a communication record, summarizing dates and information exchange. A project communication record serves as a valuable reference for project details and transactions. As well, it is the basis for development or improvement of data distribution processes, as the record illustrates where a breakdown in communication may have occurred.

8. Implementation of a formal post-construction field inspection procedure to ensure mitigation strategies have been followed.

9. Implementation and distribution of a 'Chance Find' procedure should artifacts be identified during construction. Training is provided to crews regarding this procedure, and training tracked and signed off on.

RECOMMENDATIONS, CONCLUSIONS AND FUTURE AUDITS

RECOMMENDATIONS

The following recommendations are proposed for permit holders based on the 2020 AAP results:

1. Upon receipt of the audit selection letter, companies should contact the Commission to discuss scheduling.

2. Permit holders should review required audit documentation and ensure the proper paperwork is available at time of audit.

3. Permit holders should formalize processes for communication, record and document control.

4. Implement a formal post-construction field inspection procedure to ensure archaeological mitigation strategies have been followed. This should be documented and filed for future reference.

5. Implement a 'Chance Find' procedure and include contacting Commission archaeology staff as the priority step. This procedure should be distributed to field staff, and orientation and training should be signed off on by employees and tracked.

6. A document-tracking system should be utilized to ensure archaeological assessment report submissions to the Commission are up to date to fulfil regulatory obligations.

CONCLUSION

The results of the 2020 AAP indicate the majority of auditees have practices that address many aspects of successful archaeology resource management systems. Cumulative scoring indicated an overall satisfactory score. No non-conformances or non-compliances were identified; all auditees possess a management system adequate for meeting legislative and regulatory obligations.

The auditees which scored the highest were able to demonstrate a stable archaeological management system through effective communication and document control and tracking throughout the lifecycle of the construction practice. Internal processes were often assigned to specific personnel, which ensures accountability of responsibility for specific aspects of the management system. Similarly, auditees which scored the highest demonstrated a sufficient understanding of regulatory requirements and legislation and utilized formal processes, such as training and archaeological chance find procedures, to communicate appropriate knowledge to field staff and contractors. Companies that scored the lowest were those unable to demonstrate or describe their internal communication system or document tracking specific to archaeological requirements.

FUTURE AUDITS

As observed in previous audits, companies which score the highest number of OI findings demonstrate an inability to describe their communications processes, or sufficiently track documentation such as archaeological assessments and reporting. Weaknesses in document control and tracking contribute to permit holders' failures to meet permit conditions and therefore will continue to be an important focus in future audits. Similarly, a component to address archaeology report submissions and permit holders' knowledge of outstanding permit conditions will continue to be included in future audits. While the Commission continues to work with permit holders outside of the audit to reconcile outstanding permit conditions, the AAP remains a useful resource to highlight potential weaknesses in document tracking as they relate to archaeological permit conditions.

Results from the 2020 AAP indicate that Module 6 (Compliance Process and Knowledge) was the lowest scoring module. Therefore, future audits should continue to utilize this module to understand how permit holders determine and maintain the appropriate level of knowledge for the processes that ensure compliance with regulatory requirements and legislation.

Future audits will continue to gather baseline data for the purpose of establishing procedures for best management practices for archaeological resource management within the oil and gas sector of B.C. The AAP itself will remain subject to internal review and revision in order to incorporate improvements to the program based on past audit experiences and trends in heritage resource management. The AAP will be supplemented by a program of archaeological field inspections to be completed by the Heritage Conservation Program of the Commission.

GLOSSARY OF TERMS AND ABBREVIATIONS

GLOSSARY OF TERMS

Applicant	An oil and gas company that has applied to the Commission for a development permit.
Archaeology	The study of human activity through the recovery and analysis of what people leave behind.
Archaeology Professionals	An experienced archaeologist who holds a permit under Section 12.2 of the *HCA*, for the purpose of conducting archaeological impact assessments, and the archaeologists working under the direction of the *HCA* permit holding archaeologist.
Archaeological Site	A location where archaeological remains have been found. These remains can be stone tools, rock art, cairns, burials, and other evidence of past human activities.
Document	A piece of written, printed or electronic matter that provides information or evidence or that serves as an official record.
Heritage Conservation Act	Is the provincial legislation that protects heritage property in British Columbia. Under the *HCA*, archaeology sites are protected against any damage. This protection applies to all sites, regardless of whether they are located on Crown or private lands. The *HCA* also defines what permits are required in order to study or modify archaeology sites within B.C.
ISO 9001	International Organization for Standardization quality management system requirements. The ISO 9001 sets out requirements aimed primarily at giving confidence in the products and services provided, thereby improving customer satisfaction.
ISO 14001	International Organization for Standardization environmental management system requirements. The ISO 14001 sets out requirements aimed at managing an organization's activities, products, and services in such a way that the environmental conditions with which they interact show a net gain in resilience, diversity, and capacity.
Management System	A set of interrelating or interacting elements of an organization to establish policies and objectives, and processes to achieve those objectives.
Permit Holder	An oil and gas company that holds a permit for an oil and gas development. Each development activity requires a permit to be issued by the Commission.
Record	A thing constituting a piece of evidence about the past, especially an account of an act or occurrence kept in writing or some other permanent form.

ABBREVIATIONS

AAP	Archaeological Audit Program
AIF	Archaeological Information Form
AIA	Archaeological Impact Assessment
AOA	Archaeological Overview Assessment
B.C.	British Columbia
Commission	BC Oil and Gas Commission
EP	Exemplary Performance
HCA	Heritage Conservation Act
HCP	Heritage Conservation Program of the BC Oil and Gas Commission
IR	Information Request
ISO	International Organization for Standardization
Manual	Archaeology Audit Program Procedure Manual
NC	Non-conformance
NTS	National Topographic System
OI	Opportunities for Improvement
PFR	Preliminary Field Reconnaissance
S	Satisfactory

More Information
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