British Columbia Archaeological Impact Assessment Interim Report Form

1. Report Title

2020-0176-040, AIA of BCTS Stuart Nechako block LEO010.

2. Management Summary

2.1. Protected HCA Sites
None.
2.2. Brief Overview of Study
BC Timber Sales Stuart Nechako requested an archaeological assessment within proposed forestry cutblock LEO010. Ecofor conducted a pre-field review, followed by an archaeological impact assessment (AIA) survey. The survey focused primarily on the areas that were identified during the pre-field review as having high archaeological potential.
2.3. Results
No archaeological sites were identified or revisited. The block has been assessed as having low archaeological potential due to hummocky, low-lying, and poorly drained to saturated terrain and an absence of defined terrain features. One (1) post-1846 cambium stripped CMT was recorded in LEO010.
2.4. Management Recommendations
The post-1846 CMT is not protected by the Heritage Conservation Act. No further archaeological work is recommended provided development boundaries do not change. If development boundaries change, additional work may be warranted.

3. Administrative Information

3.1. Permit Holder:	Greg Holland, BA, RPCA	
3.2. Permit Holder Affiliation:	Ecofor Consulting Ltd. 1315 Noranda Rd. E Prince George, BC V2K 5R6	Phone: 250-960-1155 ext. 237 Email: greg@ecofor.ca
3.3. Proponent Contact:	David Zurevinski	
3.4. Proponent Affiliation:	BCTS Stuart Nechako Business Area 1560 Highway 16 East Vanderhoof, BC V0J 3A0	Phone: 250-567-6331 Email: david.zurevinski@gov.bc.ca
3.5. Interim Report Author(s):	Becky Dreyer, MSc	
3.6. Interim Report Date (dd/mm/yy) & Version:	14/01/22, V1	
3.7. Notification of Work Date:	06/05/21	
3.8. OGC Ref No.:	N/A	

4. Proposed Development

4.1 Description:	Proposed block for timber harvest LEO010 (91.1 ha) with a 250 m assessment buffer. The block boundaries were flagged at the time of the assessment; therefore, the 200 m buffer was not assessed.
4.2 Location:	Stuart Nechako Natural Resource District. A point near the centre of LEO010 is located 2.3 km west of Elliot Lake, 4 km east of Middle River, and 5.2 km northwest of Dan Miner Lake (Figure 1).

	UTM coordinates of block centre: NAD 83, Zone 10N, 345467 E, 6103540 N. NTS Mapsheet (1:50,000): 93N/03 BCGS Mapsheet (1:20,000): 93N.003

5. Field Crew

Table 1. Field Crew

Date (dd/mm/yy)	Field Director (On Site? Y/N)	Field Supervisor	Other Field Personnel
20/09/21	David Wills (Y)	David Wills	John Sam
21/09/21, 22/09/21	David Wills (Y)	David Wills	John Sam, Derek Monk (Tl'azt'en First Nation)

6. Archaeological Methods and Results

6.1 Pre-field Methodology

☒	*Modelled archaeological potential and sites are indicated on Figures 1 and 3.*
☒	*An AOA and/or predictive model exists for the study area.* *Details:* The Fort St. James Forest District Archaeological Predictive Model (Marshall and Bond 2004) indicates high potential along the north-western boundary and scattered within the middle of the block.
☒	*Previous field studies influence this assessment* *Details:* Previously recorded pre-1846 CMT sites GgSi-2, GgSi-3, GgSi-4, GgSi-5, and GgSi-6 are all located within 500 m of the western boundary of LEO010 and parts of GgSi-2 and GgSi-4 are within the block buffer. The sites were recorded under permit 2001-297 (Marshall 2001) and harvested under alteration permit 2002-0062. The map for the 2001 interim report indicated that the sites were located in a tree stand with age class 8 (141-250 years old) spruce, balsam and pine.
☒	*Review of Provincial Heritage Register (RAAD)* *Date accessed:* 05/05/21
☒	*Review of Vegetation Resources Inventory (VRI) Data* *Details:* A tree cover containing age class 4-8 (61-250 years old) subalpine fir, hybrid spruce, and black cottonwood is indicated.
☒	*Pre-field Potential Assessment* *Details:* Prior to field work, archaeological potential was predicted as high along the northern block boundaries that run alongside the intermittent stream. Terrain Resources Information Management (TRIM) contours and orthophotographic imagery suggest the presence of breaks-in-slope or terracing along the southern bank of the stream. High potential was also predicted in the eastern portion of the block in association with an intermittent stream. Low potential was predicted elsewhere in the development area based on continuously sloping, featureless terrain and an absence of significant hydrological features indicated by TRIM data. VRI data indicated an absence of age class 8 (141-250 years old) or older pine trees within the block boundaries and potential for pre-1846 CMTs was considered low throughout the development as a result. The portion of the block closest to the previously recorded pre-1846 CMTs to the southwest of the block consisted of spruce and balsam in age class 5 (81-100 years old) and the area was predicted to have low CMT potential.

Table 2. Archaeological Sites in the Vicinity of the Study Area

Borden No.	Distance & Direction from Proposed Development	Site Type	Permit No. of Previous Visits	Site in Conflict? (Y/N)
GgSi-2	130 m west of LEO010	CMT	2001-0297	N
GgSi-3	363 m west of LEO010	CMT	2001-0297	N
GgSi-4	460 m west of LEO010	CMT	2001-0297	N
GgSi-5	416 m west of LEO010	CMT	2001-0297	N
GgSi-6	430 m west of LEO010	CMT	2001-0297	N

6.2 In-field Methodology

6.2.1. Subsurface Testing

☐	*Subsurface test measurements are a minimum of 35 x 35 cm, excavated by shovel, screened through 6 mm mesh, and backfilled.* *Date conducted:* N/A
☐	*Describe if other:* N/A

6.2.2. Pedestrian Survey

Number of Crew Members:	Crews consisted of two people on 20/09/21 and three people on 21/09/21 and 22/09/21.
Crew Spacing and Visibility:	Crew members were spaced 5-30 m apart during survey. Visibility ranged from 30-50 m throughout the development area.
Other:	Crew members conducted transects to look for archaeological sites, terrain features associated with high archaeological potential, CMTs, and other indications of anthropogenic use and modification. Survey transects followed predicted archaeological potential (see Section 6.1 above), hydrological features, landforms, arbitrary compass bearings, flagged block boundaries, and study area extents. Survey transects are shown on Figures 2 and 3.

6.2.3. Site Recording

☒	*CMT(s) were flagged and recorded* *Details:* The CMT was recorded to Level I Standards (BC Archaeology Branch 2017) and flagged using white ribbon with black “CMT” text. A dendrochronological sample was obtained using an increment borer (see Appendix B).
☐	*Trail(s) were recorded* *Details:* N/A
☐	*Other* *Details:* N/A

6.3 In-field Observations

6.3.1. Hydrology & Associated Landforms
The unnamed streams within the block are ephemeral drainages (Photo 1). They are low lying wet areas with either no signs of water or standing pools of water. The terrain surrounding them is poorly drained and featureless.
6.3.2 Topography
The northeast portion of the block is moderately sloping and poorly drained (Photo 2). In the southern portion of the block slopes gently to moderately northwest and remains poorly drained (Photo 3). Overall, the block lacks defined landform features.
6.3.3 Vegetation
The overstory is consistent with VRI data, which indicates stands of subalpine fir and hybrid spruce. The understory includes willow, alder, devil’s club, thimbleberry, bunchberry, cranberry, ferns, and broad leaf blueberry.
6.3.2. In-field Potential Assessment
Predicted and modeled archaeological potential along the northern block boundaries was assessed as low despite. The pre-field review predicted high potential based on the TRIM suggested presence of terracing overlooking the unnamed stream to the north, whereas crew members observed continuously sloping, featureless terrain throughout the area. Scattered areas of modeled high potential were also assessed as having low potential. The block was assessed to have low potential due to steeply sloping, featureless terrain. This assessment is consistent with the terrain described during the pre-field review.

One (1) post-1846 CMT was recorded. No pre-1846 CMTs were encountered and potential for pre-1846 CMTs was assessed as low as a result. Tree stands were largely composed of spruce and balsam.

6.4 Results

6.4.1. Subsurface Testing
No subsurface testing was conducted.

6.4.2. Untested Areas of Potential (AOPs)
There are no untested AOPs within the development area.

6.4.3. Non-HCA Protected Sites
All traditional use, post-1846, and modern sites that are not protected by the HCA are described in Appendix C.

7. Archaeological Site Summary

No archaeological sites were identified or revisited.

8. Disclosure Statement and Signature

Although every attempt was made to locate and record all archaeological and cultural heritage features within the specified survey area, the possibility exists that materials may have been missed. If any unidentified archaeological or cultural heritage materials are encountered during development activities, work in the vicinity must stop and the Archaeology Branch, relevant First Nations, and/or the Ministry of Forests, Lands and Natural Resource Operations must be informed. These agencies will then provide direction as to an appropriate course of action to take regarding management of the materials.

It was not the intent of this survey to identify, evaluate, or comment on the presence or absence of Aboriginal rights in the survey area. Completion of this survey does not "abrogate or derogate from Aboriginal treaty rights" (Heritage Conservation Act Sec. 8). The survey was conducted without prejudice to First Nations' treaty negotiations, Aboriginal rights, or Aboriginal title.

It is Ecofor's opinion that the field work and reporting were completed in accordance with the Heritage Inspection Permit issued by the Archaeology Branch.

Barbara Horrell

Barbara Horrell, BSc, RPCA
Senior Archaeologist
Ecofor Consulting Ltd.

January 14, 2022
Date

9. References Cited

BC Archaeology Branch. 2017. Information Bulletin Number 27 – March 22 – 2017. Culturally Modified Trees Guidelines. Manuscript on file, Archaeology Branch. https://www2.gov.bc.ca/assets/gov/farming-natural-resources-and-industry/natural-resource-use/archaeology/forms-publications/bulletin_27_cmt_guidelines.pdf. Date accessed: 19/10/21.

Marshall, Amanda and Tara Bond. 2004. Fort St. James Forest District Archaeological Predictive Model Revision Project: Final Report. Ecofor Consulting Ltd., Fort St. James, BC.

Marshall, Amanda. 2001. 2001-297 Logging Block Archaeological Inventory and Impact Assessment Survey Preliminary Interim Report. Ecofor Consulting Ltd., Fort St. James, BC.

10. Report Distribution

Contact	Affiliation
Corey Cookson	Archaeology Branch
David Zurevinski	BCTS SNBA
Takla Nation Stewardship Portal	Takla Nation
Kelley Williams	Binche Whut'en
Natural Resource Dept.	Tl'azt'en First Nation
Waylon John and Rob Diaz	Yekooche First Nation

11. Shapefiles

☒ Study area shapefiles have been sent to archsiteform@gov.bc.ca

12. Attachments

☒ Appendix A - Photos

☒ Appendix B - Non-HCA Protected Sites

☒ Figure 1 – General Location Map

☒ Figure 2 – Midrange Location Map

☒ Figure 3 – Detailed Results Map

Appendix A – Photos

Photo 1. Stream at the eastern area of the block, view north.

Photo 2. Sloping terrain in the northern area of the block, view north.

Photo 3. Terrain in the southern portion of the block, view south.

Photo 4. LEO010-DAW1 CMT1.

Appendix B – Non-HCA Protected Sites

☒ Post-1846/Traditional Use Sites Recorded

Assigned Site Number:	LEO010-DAW1
Site Type:	Post-1846 CMT
UTM (NAD 83):	Zone 10, 345793 E, 6104197 N
Dimensions:	1 x 1 m, based on the individual modified tree
Features:	One (1) cambium stripped lodgepole pine CMT on a tree dead from mountain pine beetle (MPB) infestation.
Age:	One (1) increment core was collected. The collected core was uncountable due to multiple germination points. The tree was cross-dated using VRI data, which indicates ages class 4 (61-80 years old) trees.
Photos:	4

☐ Modern Use Sites Recorded

No modern use sites were recorded during the survey.

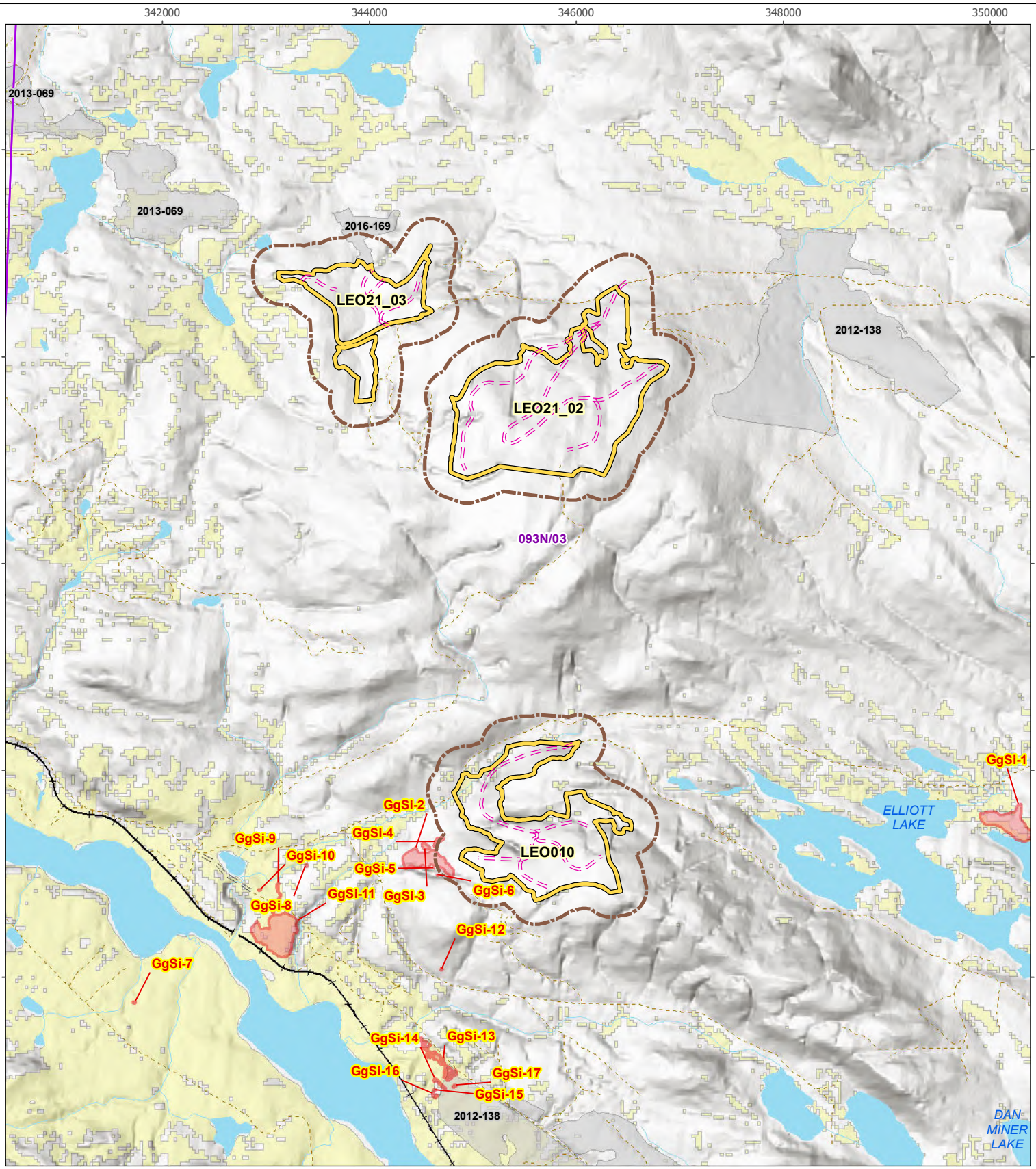


FIGURE 1
GENERAL LOCATION MAP

BCTS BC Timber Sales

ECOFOR Ecofor Consulting Ltd. May 4, 2021 (JH)

1:50,000 (at original document size of 8.5 x 11")

0 1 2Km

NAD 1983 UTM Zone 10N

Disclaimer: This product is for informational purposes only and may not have been prepared for or be suitable for legal, engineering, or surveying purposes. The base data layers have been obtained from the British Columbia Geographic Warehouse (BCGW). Archaeological Site Boundaries were obtained by the Ministry of Forests, Lands and Natural Resources Operations Archaeology Branch's RAAD Sites. Service Layer Credits: Airbus,USGS,NGA,NASA,CGIAR,NCEAS,NLS,OS,NMA,Geodatastyrelsen,GSA,GSI and the GIS User Community

- Rail Line
- Resource Road
- Road - Other
- Stream
- Waterbody
- Proposed Block
- Proposed Road
- Assessment Buffer (250m)
- Previously Assessed Block
- High Archaeological Potential (FTSJ)
- Previously Recorded Archaeological Site
- NTS 50K GRID

Document Path: O:\GIS_PROJECTS\2021\CulturalResources\BCTS_SNBA\MXD\GeneralLocation_BCTS_SNBA.mxd

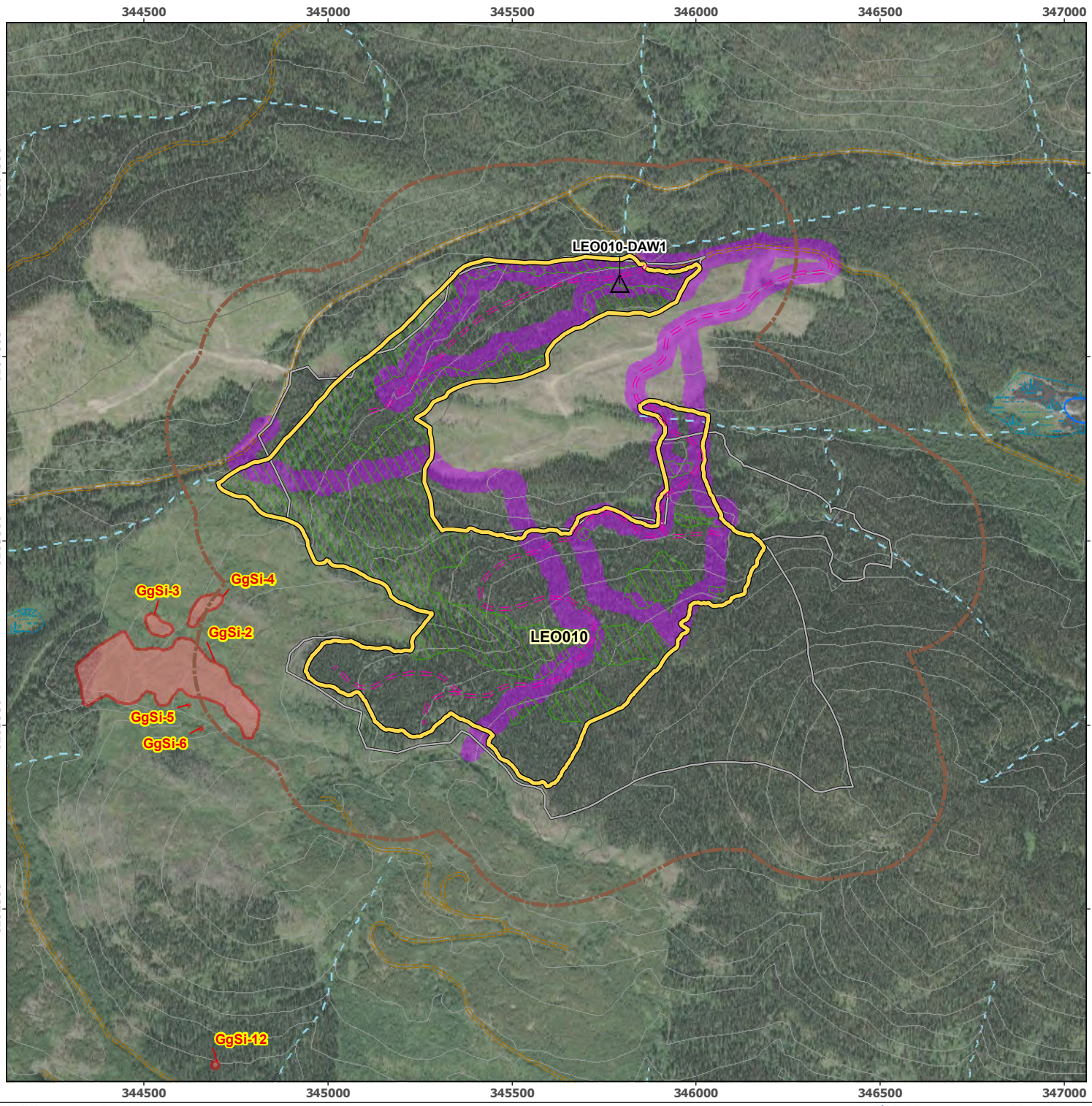


FIGURE 2. MIDRANGE LOCATION MAP

LEO010

BCTS BC Timber Sales

ECOFOR

Ecofor Consulting Ltd. November 3, 2021 (JM)

1:15,000 (at original document size of 8.5 x 11")

0 300 600 Meters

NAD 1983 UTM Zone 10N
NTS MAPSHEET: 93N/03
BCGS MAPSHEET: 93N.003, 93N.004

Permit Number: 2021-0207 **EPN:** 21-1203-029

- Proposed Road
- Road - Other
- Contour (100m)
- Contour (20m)
- Stream - Intermittent
- Waterbody
- Wetland
- Post 1846 CMT
- Survey Transect Area
- Proposed Block
- Previously Proposed Block
- Assessment Buffer (250m)
- Wildlife Tree Patch
- Previously Recorded Archaeological Site

Disclaimer: This product is for informational purposes only and may not have been prepared for or be suitable for legal, engineering, or surveying purposes. The base data layers have been obtained from the British Columbia Geographic Warehouse (BCGW). Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Document Path: O:\GIS_PROJECTS\2021\CulturalResources\BCTS_SNBA\MXD\LEO010_Midrange.mxd

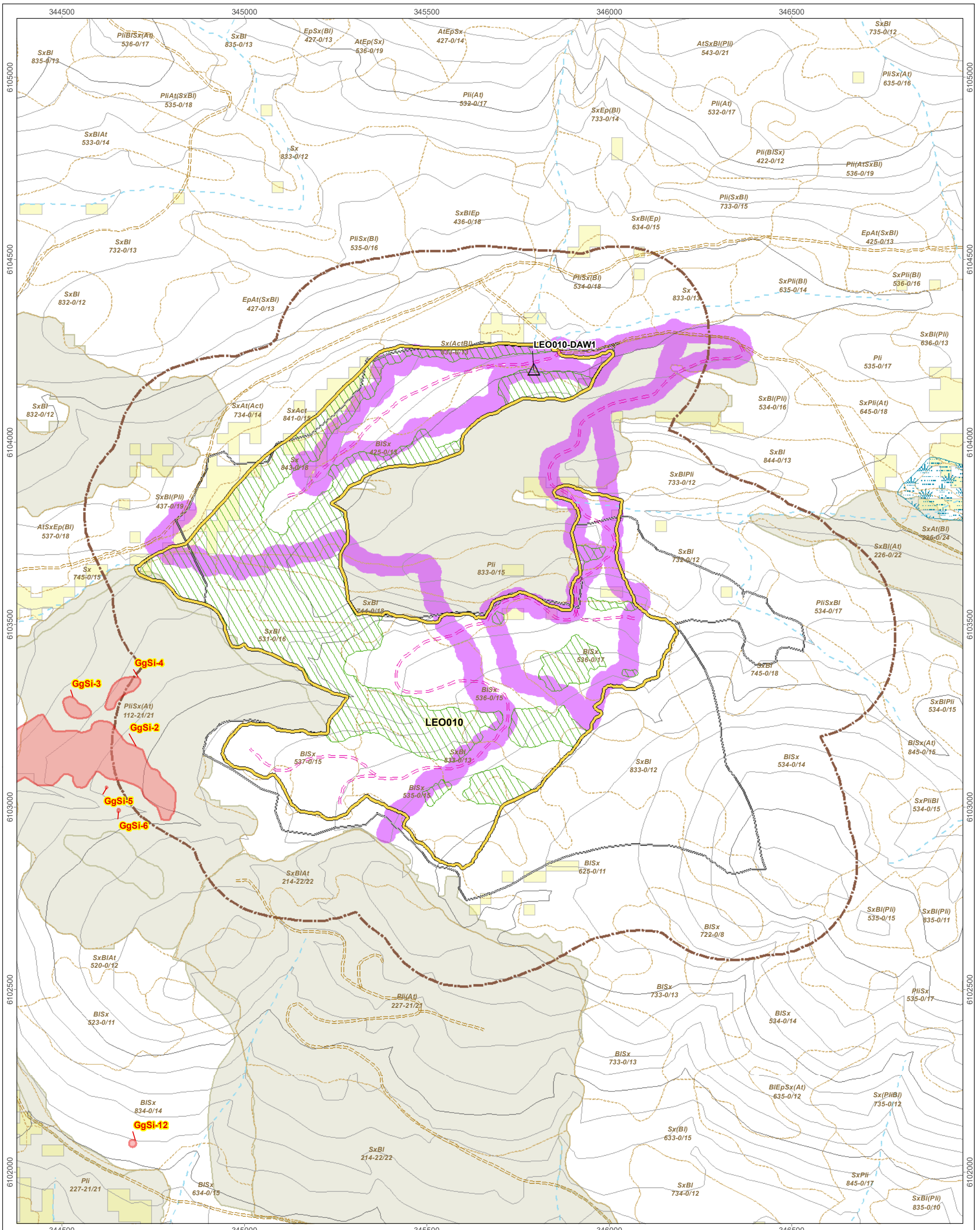


FIGURE 3
ARCHAEOLOGICAL RESULTS MAP
LEO010

BCTS BC Timber Sales

ECOFOR

Ecofor Consulting Ltd. November 3, 2021 (NM)

- Contour (100m)
- Contour (20m)
- Stream - Intermittent
- Wetland
- Post 1846 CMT
- Previously Proposed Block
- Assessment Buffer (250m)
- Proposed Block
- Wildlife Tree Patch
- Proposed Road
- Survey Transect Area
- Road - Other
- Previously Recorded Archaeological Site
- Forest Cover (VRI)
- Cutblock
- High Archaeological Potential (FTSJ)

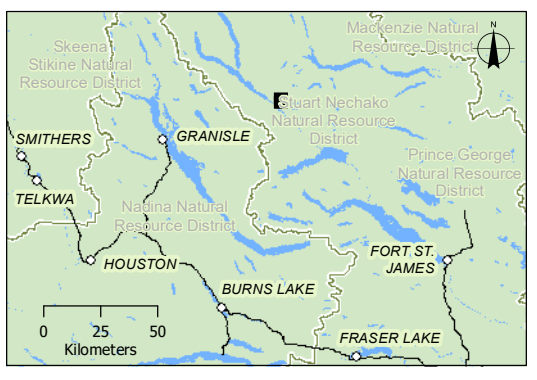
N

1:10,000

0 250 500m

NAD 1983 UTM Zone 10N
BCGS MAPSHEET: 93N.003
NTS MAPSHEET: 093N/03

Block ID:	LEO010
Permit Number:	2021-0207
EPN:	21-1203-029
Easting:	345467
Northing:	6103540
Area (Ha):	91.1
Culture Area:	Interior Plateau



Disclaimer: This product is for informational purposes only and may not have been prepared for or be suitable for legal, engineering, or surveying purposes. The base data layers have been obtained from the British Columbia Geographic Warehouse (BCGW)

Document Path: O:\GIS_PROJECTS\2021\CulturalResources\BCTS_SNBA\MXD\LEO010_ResultsMap.mxd