

FINAL REPORT

**PHASE I
ENVIRONMENTAL SITE ASSESSMENT**

**Nicola Mameet IR # 1,
Lower Nicola Indian Band
Merritt, British Columbia**

Prepared for

Lower Nicola Indian Band
181 Nawishaskin Lane
Merritt, B.C. V1K 0A7

Submitted by

Columbia Environmental Consulting Ltd.
RR#2, Site 55, Compartment 10
Penticton, B.C. V2A 6J7

Project No: 10-0374
April, 2011





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April 30, 2011

Lower Nicola Indian Band
181 Nawishaskin Lane
Merritt, B.C. V1K 0A7

Attention: John Keating and Sharon Parsons, LNIB Lands and Leasing Office

Subject: Final Phase I Environmental Site Assessment (ESA) of the Nicola Mameet Indian Reserve # 1, Lower Nicola Indian Band, Merritt, BC.

We trust that this final report meets your present needs. Two hard copies of the final report and a CD-ROM including the source files and an Adobe pdf version will be provided upon receipt of your review. Please do not hesitate to call if you have any questions or comments, or if you require anything further.

Yours truly,

Columbia Environmental Consulting Ltd.

Per:

Dwight Shanner, R.P.Bio
Project Manager

EXECUTIVE SUMMARY

Columbia Environmental Consulting Ltd. (Columbia) was contracted by the Lower Nicola Indian Band (LNIB) on behalf of Indian and Northern Affairs Canada (INAC) to conduct a Phase I Environmental Site Assessment (ESA) of the Nicola Mameet Indian Reserve #1, herein referred to as the “Site”.

The first step in site characterization is to conduct a Phase I ESA. During this phase, information is gathered about site layout and previous activities and/or operations that may have caused contamination at the Site.

The Phase I ESA consisted of the following:

- records review;
- interviews with regulatory officials and personnel knowledgeable about the Site;
- site reconnaissance; and
- information evaluation and preparation of the report provided herein.

The Phase I ESA focused on preliminary areas of interest identified prior to the site visit, through historical document review, and interviews. A list of these areas is included in Section 5.1.1. . The interior and exterior of community structures or improvements within the subject area were excluded for building evaluations unless information was gathered to suggest contamination or external visual observations indicated potential contamination. In such instances, it is the responsibility of the First Nation to provide the Assessor with access to the identified area of interest. In general, all residential structures were excluded unless information was gathered to suggest contamination or external visual observations indicated potential contamination. Specific residential structures listed for inspection at the request of the First Nation or INAC require the permission from the First Nation and the Certificate of Possession holder.

The Nicola Mameet IR# 1 is comprised of approximately 11,350 acres on one reserve approximately 4km west of Merritt, BC. The reserve is irregular but roughly rectangular in shape, extending north from the Nicola River and Highway 8. The Nicola River flows west to east through the southern portion of the Site. Guichon Creek flows north to south through the Site. The Site contains an oil and gas pipeline right of way, road networks, residences, a sawmill, a fire department, band office, community school, community centers, arbor, gas station, gravel pit, motor speedway, ASTs and residential dumps.

The Site was assessed with forty-one (41) areas of interest based on information obtained from historical reports, interviews, and on-site visual observations. Of the forty-one (41) areas of interest assessed, 33 were retained as areas of potential environmental concerns (APECs). A summary table of the APECs and their associated contaminants of potential concern is provided below.

Table A. Areas of Potential Environmental Concern

APEC	Description of Contamination or Risk	COPC
<p>APEC 1</p> <p>Rocky Pines Car Crushing</p> <p>652042E 5560471N</p>	<p>The car crushing operation (70m x 70m) contains a large number of crushed and abandoned vehicles. Inadequate petroleum hydrocarbon storage, vehicle maintenance and repairs, and spotty soil staining was noted throughout the area.</p>	<ul style="list-style-type: none"> • Metals • PAH • PHC • VOC • Glycol
<p>APEC 2</p> <p>Lot 219 AST</p> <p>652242E 5560564N</p>	<p>One privately owned 4500L, diesel AST in good condition on wooden support structure appears active. Spotty soil staining was observed below (<10cm).</p>	<ul style="list-style-type: none"> • PAH • PHC
<p>APEC 3</p> <p>Lot 254 AST</p> <p>652282E 5560126N</p>	<p>One privately owned 2500L, diesel AST in good condition on concrete blocks appears active. Spotty soil staining was observed below (<10cm).</p>	<ul style="list-style-type: none"> • PAH • PHC
<p>APEC 4</p> <p>Lot 279 AST</p> <p>652293E 5559918N</p>	<p>One privately owned empty Diesel AST (4500L) in moderate condition. Tank is empty and not in original location (unknown). Original location needs to be verified and investigated.</p>	<ul style="list-style-type: none"> • PAH • PHC
<p>APEC 5</p> <p>Mamit Lake Road Four Mile Dump</p> <p>653572E 5560186N</p>	<p>A buried dump (80m x 15m) was observed within a fenced and gated compound east of Mamit Lake Road. The gate has been removed and some recent dumping has occurred at the gate. Contents and environmental impact of the buried materials is unknown. Two monitoring wells are installed adjacent to the buried debris.</p>	<ul style="list-style-type: none"> • Metals • PAH • PHC • VOC • Ions
<p>APEC 6</p> <p>Buried Dump 1 Mamit Lake Ranch Road South</p> <p>652666E 5558129N</p>	<p>The dump (60 m x 20m) contains buried debris. It is unknown if the one monitoring well to the southeast was installed to monitor the site or not. Recent surface debris includes electronics, appliances, building materials, furniture, paint cans, scrap metals, rubber tires, and domestic waste. Contents and environmental impact of the buried materials is unknown.</p>	<ul style="list-style-type: none"> • Metals • PAH • PHC • VOC • Ions
<p>APEC 7</p> <p>Buried Dump 2 Mamit Lake Ranch Road North</p> <p>652747E 5558858N</p>	<p>The dump (80m x 15m) contains buried debris. It is unknown if the one monitoring well to the southeast was installed to monitor the site or not. Recent surface debris includes electronics, appliances, building materials, furniture, paint cans, scrap metals, rubber tires, and domestic waste. Contents and environmental impact of the buried materials is unknown</p>	<ul style="list-style-type: none"> • Metals • PAH • PHC • VOC • Ions

APEC	Description of Contamination or Risk	COPC
APEC 8 Mamit Lake Road Target Shooting Area 654646E 5558339N	<ul style="list-style-type: none"> • Two (2) areas of target practice were observed (4 targets). • Bullet holes are visible on a stump (northern natural backstop area) and one wooden target (southern natural backstop area) • Shell casings were observed at the southernmost firing area • The area has been used for local shooting contests and is not monitored for use. 	<ul style="list-style-type: none"> • Metals • PAH
APEC 9 Lot 297 ASTs 652293E 5559918N	APEC 9A – 2x 1800L Diesel and Gas ASTs Two privately owned side by side 1800L ASTs (one diesel and one gasoline) appear in use. Tanks were empty at the time of the site visit, and no staining or odor was observed.	<ul style="list-style-type: none"> • PAH • PHC
	APEC 9B – 800L AST One privately owned AST (unknown content) is empty with no stains or odors beneath the tank. An open 20L oil pail is adjacent to the tank and staining was observed.	<ul style="list-style-type: none"> • PAH • PHC
	APEC 9C – 2000L AST One privately owned AST (unknown content) is empty and does not appear in use. No staining or odors were noted.	<ul style="list-style-type: none"> • PAH • PHC
APEC 10 Lot 294 ASTs 654604E 5557801N	2 privately owned 1600L diesel ASTs are in good condition and appear to be in use. Soil staining was observed below. Inadequate storage of petroleum hydrocarbon products was noted adjacent.	<ul style="list-style-type: none"> • Metals • PAH • PHC • VOC
APEC 11 Lot 146 Sawmill 654216E 5556808N	Privately owned diesel AST (4500L) is in new condition and in use. Petroleum hydrocarbon handling and storage at the sawmill appears in good order. Small amounts of scrap metal in the form of mill machinery are located on the northern and southern portions of the site. A heating oil tank is located at the site and its former location is unknown. Heavy equipment is maintained on site. The potential for hydrocarbon spills are a concern at the site.	<ul style="list-style-type: none"> • Metals • PAH • PHC • VOC
APEC 12 Lot 265 Mojo’s Gas Station and Gravel Pit 654329E 5556808N	APEC 12A- Mojo’s Gas Station It is unknown at this time if the former USTs have been removed from the Gas Station. Station building and limited amounts of metal debris remain at the site. Monitoring wells are installed in the vicinity of the former fueling island and reported UST locations. Some staining is noted around the abandoned warehouse.	<ul style="list-style-type: none"> • Metals • PAH • PHC • VOC
	APEC 12B – Peter Brothers Asphalt Plant & Gravel Pit A privately owned 31000L dual tank (gas/diesel) AST is in good condition and in use at the site. The portable asphalt plant has surficial soil staining and use of hydrocarbon products, but the area appears lined with poly approximately 30cm below surface. Production and recycling of asphalt is occurring at the site. Waste and scrap metals are noted throughout the site.	<ul style="list-style-type: none"> • Metals • PAH • PHC • VOC

APEC	Description of Contamination or Risk	COPC
APEC 13 Lot 105 Abandoned House 654503E 5556175N	The abandoned house contains mould that needs to be evaluated by a qualified mold assessor. There is the potential for asbestos in fibrous ceiling tiles, and fireplace pad. Appliances, furniture, and household debris remain within the house. There is the potential that lead based paints were used on the external portion of the building. Smaller outbuildings also contain debris.	<ul style="list-style-type: none"> • Asbestos • Pb in Paint
APEC 14 Lot 87-4 AST 654444E 5556164N	Privately owned 4500L diesel AST is partially full with soil staining (1m diameter) and odor noted below. Tank is in moderate condition, but has no secondary containment. Open 20L pail adjacent contains used radiator fluid.	<ul style="list-style-type: none"> • PAH • PHC • Glycol
APEC 15 Lot 72-1 Abandoned House 654486E 5556095N	Abandoned house contains suspected asbestos insulation materials (Xenolite).	<ul style="list-style-type: none"> • Asbestos
APEC 16 Lot 208 AST (213E) 654749E 5555735N	Privately owned 2300L diesel AST is empty and in good condition. Some weeping at the nozzle and cracks in the hose were noted. Tank is to be moved to a more permanent location and will be in use.	<ul style="list-style-type: none"> • PAH • PHC
APEC 17 Lot 208 AST (225E) 654867E 5555589N	APEC 17A – Two privately owned ASTs (1000L diesel and 1350L gasoline) are in moderate condition and do not appear in recent use. No soil staining or odor was noted below. Some petroleum hydrocarbon storage is occurring in the vicinity.	<ul style="list-style-type: none"> • PAH • PHC
	APEC 17B – One privately owned AST (2300L unknown contents) appears in good condition and does not appear in use. No soil staining or odors were noted. 2 tidy tanks were noted adjacent.	<ul style="list-style-type: none"> • PAH • PHC
APEC 18 Lot 58 AST (260E) 654855E 5555240N	Privately owned 900L diesel AST is empty and appears in moderate condition. The tank is on a treated wooden support that is rusting and has some weeping at the nozzle. A second adjacent 900L tank is empty and on its side. No staining or odors were observed below the tanks.	<ul style="list-style-type: none"> • PAH • PHC
APEC 19 Lot 58 AST (280E) 654900E 5555102N	Privately owned empty heating oil AST (300L) appears in moderate condition. Tank is rusting, and does not appear to be in use. No staining or odors were noted below the tank.	<ul style="list-style-type: none"> • PAH • PHC

APEC	Description of Contamination or Risk	COPC
APEC 20 BC Plan 215 Nicola River Dump 654202E 5554569N	A 50x80 m area of debris was observed strewn down a bedrock slope between Lindley Creek Road and Nicola River. The area is densely vegetated riparian area at the toe of slope, and is within the floodplain of the Nicola River. Debris includes numerous abandoned vehicles, appliances, domestic waste, scrap metals, furniture, building materials, and rubber tires.	<ul style="list-style-type: none"> • Metals • PAH • PHC
APEC 21 BC Plan 215 Shulus Road ASTs 654194E 5554572N	Three (3) privately owned ASTs (1350L gasoline, 2400L unknown, 1600L diesel) are in moderate condition and do not appear in use. No soil staining was observed below the tanks in the current location, but a 1m diameter soil stain was noted at the front of the storage shed.	<ul style="list-style-type: none"> • PAH • PHC
APEC 22 Lot 78-2 Johnny's Gas Station 653625E 5556100N	The gas station contains a diesel (9000L), gasoline (46,000L), and a propane ASTs with underground lines running to four pumps within one pump island. No spills were reported, and no concerns with current practices were noted. Former USTs were located in same location as current USTs. The gas station is up gradient and approximately 1km from the Nicola River. Former diesel and gasoline ASTs from this site are abandoned on Lot 183.	<ul style="list-style-type: none"> • PAH • PHC
APEC 23 Lot 81 Burnt House 653278E 5556032N	Foundation and surrounding area is littered with scattered burnt debris. Basement portion is open to 2.2m below surface grade, and contains standing water. Area is overgrown and the open basement presents a safety hazard. Adjacent shed contains debris.	<ul style="list-style-type: none"> • Metals • PAH • PHC
APEC 24 Lot 17 & 18 Residential Dump 653223E 5555894N	Buried residential dump (20m x 8m) contains metals and domestic waste, and potential unknown substances. Buried debris is on bank above seasonally wetted area within a residential development.	<ul style="list-style-type: none"> • Metals • PAH • PHC • VOC
APEC 25 Lot 86 Residential Dump 652973E 5556056N	Buried residential dump contains metals and domestic waste, and potential unknown substances. Buried debris is on bank and within seasonally wetted area and within a residential development.	<ul style="list-style-type: none"> • Metals • PAH • PHC • VOC
APEC 26 Residential Dump South of Lots 3,4, and 5 652742E 5556145N	Buried residential dump contains metals and domestic waste, and potential unknown substances. Buried debris is on bank above seasonally wetted area and Nicola River, and within a residential development.	<ul style="list-style-type: none"> • Metals • PAH • PHC • VOC
APEC 27 Lot 12 AST 652924E 5556138N	Privately owned empty AST (900L unknown contents) appears in moderate condition. Tank is rusting, and does not appear to be in use. No staining or odors were noted below the tank.	<ul style="list-style-type: none"> • PAH • PHC

APEC	Description of Contamination or Risk	COPC
APEC 28 Band Firehall Burn Pile 652535E 5556181N	Burn pile includes electronics, light ballasts, dimensional wood waste, vinyl siding, drywall, corrugated metal, car hood, paint cans, metal window frames, and fencing materials. All debris is burnt.	<ul style="list-style-type: none"> • Metals • PAH • PHC • PCB
APEC 29 Lot 197 AST 652604E 5556610N	Privately owned empty AST (900L unknown contents) appears in moderate condition. Tank appears to be in use. The property was not accessible at the time of the site visit, and as such no observations regarding soil conditions beneath the tank were made.	<ul style="list-style-type: none"> • PAH • PHC
APEC 30 LNIB School AST 652675E 5556806N	Empty AST (24000L unknown contents) appears in new condition. Tank appears to be in use. The tank is double walled, on a concrete foundation, within a fenced perimeter. No concerns with current fuel use were identified at the school.	<ul style="list-style-type: none"> • PAH • PHC
APEC 31 Lot 200 ASTs 651774E 5557470N	Three (3) privately owned ASTs (4500L unknown, 1200L gasoline, and 2300L diesel) are immediately adjacent to each other and appear in use. The tanks are in moderate condition with some rust and weeping occurring at the bungs and nozzles. The area has a hydrocarbon odor with spotty soil staining.	<ul style="list-style-type: none"> • PAH • PHC
APEC 32 Former Shulus School AST (ESSIMS 7000086497)	Fuel storage tank was removed from the school property in the 1980's. In 1999, the former location of the AST could not be confirmed during the FNESS UST/AST removal program, and soil conditions below the former AST remain unknown.	<ul style="list-style-type: none"> • PAH • PHC
APEC 33 Soil Contamination Charlotte Joe Residence (ESSIMS 7000086397)	Fuel storage tank was removed from Charlotte Joes residence during the FNESS UST/AST removal program. Contaminated soil was excavated from the property, however, the soil remains contaminated at 2.5m depth, as further excavation was prevented due to the proximity of the house foundation.	<ul style="list-style-type: none"> • PAH • PHC
Off Site APEC 34 CP Rail Right of Way 653577E 5556159N	The right of way was used to transport coal, copper ore concentrate, and had steam engine use on the rail line. Creosote rail ties were used for track foundation and the railway ballast has the potential to be fill imported from an unknown source or mine tailings. There are three right of way widenings as it passes through the Site. Metals, Hydrocarbons, and PAHs are a contaminant of concern that may migrate from the right of way to the Site. No additional info to add.	<ul style="list-style-type: none"> • Metals • PAH • PHC

Seven (7) additional sites were visited based on concerns identified during the historical review, but were not retained as APECs. These sites are summarized in the table below.

Table B. Sites of Concern Not Retained as APECs

Site #	Site Name	Location	Observations
1	Rocky Pines Residential Dump East of Lots 252 & 253	Rocky Pines Residential Subdivision	Reported former residential dump down embankment behind residential development. Very limited debris was observed. Better housekeeping practices are recommended.
2	Lot 87-4 Debris	Junction of Highway 8 and Mamit Lake Road (Highway 97C)	Reported to contain residential debris. No wastes were observed at the site.
3	Lot 67 Shulus Spring	100m south of the Junction of Highway 8 and 97C.	Pump house and small wooden shed with generator were noted at the property. A cement barricade runs between the highway right of way and spring below. Impacts from road are anticipated to be low. Given use as potable water, annual monitoring is recommended to confirm water meets Health Canada drinking water quality guidelines.
4	Lot 183 Abandoned Gas Station ASTs	South of Johnny's on the Rez along CP Rail ROW	Two empty ASTs are on a concrete pad and are empty. There were no concerns identified for the current storage of the empty tanks.
5	Rail Tie Pile	South of Lot 81 Burnt house on CP Rail ROW	A small pile of treated ties was in a seasonally wetted area. Many fences along the ROW are constructed of treated rail ties. Impacts from this pile are anticipated to be low but should be removed.
6	Lot 198 Merritt Speedway	North of Highway 8 and LNIB School on Mamit Lake Ranch Road	No concerns pertaining to current site use were noted.
7	Lot 96 Spectra Energy Meter Station	North of Highway 8	Natural gas pipeline runs through Nicola Mameet IR1. Potential concerns for the LNIB were seasonal flow of water over gas lines toward Nicola River. Potential impacts are anticipated to be very low.

Two (2) locations of concern were noted 600m west of the reserve. These include the former CP Rail Ore Transfer Station, and Turtle Tracks Industrial. These sites are on private property, but are adjacent to the Nicola River, which runs through reserve Lands. Turtle Tracks Industrial is reported to have heavy machinery, with fuel/chemical handling and storage. Sulphur staining and oxidized copper ore, a burn pile, and miscellaneous metal debris was noted at the CP Rail Ore Transfer Station.

A Phase 2 ESA is recommended to determine the presence or absence of contaminated media at the APECs identified by this assessment.

TABLE OF CONTENTS

EXECUTIVE SUMMARY I

1.0 INTRODUCTION..... 1

 1.1 OBJECTIVE 1

 1.2 SITE BACKGROUND 1

2.0 SCOPE OF WORK..... 2

3.0 METHODOLOGY 2

 3.1 RECORDS REVIEW 2

 3.2 INTERVIEWS 2

 3.3 SITE VISIT 3

4.0 HISTORICAL RECORDS REVIEW..... 3

 4.1 RECORDS REVIEW 3

 4.2 AGENCY REVIEW..... 5

 4.3 PREVIOUS ENVIRONMENTAL INVESTIGATIONS..... 8

 4.4 INTERVIEWS 10

5.0 SITE DESCRIPTION..... 12

 5.1 GENERAL PROPERTY DESCRIPTION 12

 5.2 TOPOGRAPHY 24

 5.3 GEOLOGY 25

 5.4 SURFACE DRAINAGE..... 25

 5.5 CLIMATE DATA..... 25

 5.6 UTILITIES..... 26

 5.7 ADACENT PROPERTIES 26

 5.8 VALUED ECOSYSTEM COMPONENTS (VECs) 27

 5.9 WATER WELLS 27

 5.10 HISTORICAL LAND USE 28

 5.11 REGULATORY HISTORY 28

6.0 FINDINGS..... 28

 6.1 FUEL / CHEMICAL HANDLING AND STORAGE 28

 6.2 SOLID WASTE MATERIALS 35

 6.3 SPILLS AND STAIN AREAS..... 40

 6.4 WASTEWATER DISCHARGE..... 40

 6.5 AIR DISCHARGES..... 40

 6.6 POLYCHLORINATED BIPHENYLS (PCB)..... 40

 6.7 ASBESTOS..... 40

 6.8 HEAVY METALS..... 41

 6.9 OZONE DEPLETING SUBSTANCES (ODS) 41

 6.10 NOISE..... 41

7.0 AREAS OF POTENTIAL ENVIRONMENTAL CONCERN 41

8.0 RECOMMENDATIONS..... 47

9.0 REPORT USE AND LIMITATIONS..... 48

10.0 PROFESSIONAL STATEMENT	49
11.0 REFERENCES.....	50

FIGURES

- Figure 1. Site Location and Plan
- Figure 2. Rocky Pines Car Crushing West of Lot 232-1
- Figure 3. Nicola Mameet IR1 Lot 219 AST
- Figure 4. Nicola Mameet IR1 Lot 254 AST, Lot 279 AST & Rocky Pines Residential Dump
- Figure 5. Nicola Mameet IR1 Mamit Lake Road Four Mile Dump
- Figure 6. Nicola Mameet IR1 Mamit Buried Dump 1 Mamit Lake Ranch Road South
- Figure 7. Nicola Mameet IR1 Mamit Buried Dump 2 Mamit Lake Ranch Road North
- Figure 8. Nicola Mameet IR1 Mamit Lake Road Target Shooting Area
- Figure 9. Nicola Mameet IR1 Lot 297 ASTs
- Figure 10. Nicola Mameet IR1 Lot 294 AST
- Figure 11. Nicola Mameet IR1 Lot 146 Sawmill
- Figure 12. Nicola Mameet IR1 Lot 265 Mojo’s Gravel Pit
- Figure 13. Nicola Mameet IR1 Lot 105 Abandoned House, Lot 87-4 Debris & AST, Lot 72-1 Abandoned House
- Figure 14. Nicola Mameet IR1 Lot 67 Shulus Spring
- Figure 15. Nicola Mameet IR1 Lot 208 ASTs (213E & 225E)
- Figure 16. Nicola Mameet IR1 Lot 58 ASTs (260E & 280E)
- Figure 17. Nicola Mameet IR1 Plan BC215 Nicola River Dump
- Figure 18. Nicola Mameet IR1 Plan BC215 Shulus Road AST
- Figure 19. Nicola Mameet IR1 Lot 96 Spectra Energy, Lot 78-1, 78-2 Johnny’s Gas Station
- Figure 20. Nicola Mameet IR1 Abandoned 2 Johnny’s Gas Station AST’s
- Figure 21. Nicola Mameet IR1 Lot 81 Burnt House
- Figure 22. Nicola Mameet IR1 Lot 17, 18, and 86 Residential Dumps
- Figure 23. Nicola Mameet IR1 Lot 12 AST and Lot 86 Residential Dump
- Figure 24. Nicola Mameet IR1 Residential Dump South of Lots 3, 4, and 5
- Figure 25. Nicola Mameet IR1 Band Firehall Burn Pile (off Reserve), Former Shulus School
- Figure 26. Nicola Mameet IR1 Lot 197 AST
- Figure 27. Nicola Mameet IR1 LNIB School AST
- Figure 28. Nicola Mameet IR1 Lot 198 Merritt Speedway
- Figure 29. Nicola Mameet IR1 Lot 200 ASTs
- Figure 30. Nicola Mameet IR1 C. Joe Residence
- Figure 31. Nicola Mameet IR1 CP Rail Right of Way

TABLES (in report)

Table A. Air Photo Review Summary	4
Table B. Summary of Information Obtained from Interviewees	10
Table C. Site Area Summary	14
Table D. Summary of Structures On-Site	22

Table E. Climate Values for 1971-2000	26
Table F. Precipitation Values for 1971-2000.....	26
Table G. Summary of Hazardous Materials	29
Table H. Fuel and Chemical Details	30
Table I. Solid Waste Details	36
Table J. Areas of Potential Environmental Concern.....	42
Table K. Sites of Concern Not Retained as APECs.....	47

APPENDICES

Appendix A	Figures
Appendix B	Photographic Documentation
Appendix C	BC Online Site Registry Search Results
Appendix D	Correspondence
Appendix E	Aerial Photographs
Appendix F	Potential Species at Risk
Appendix G	Historical Reports
Appendix H	AST Logs

1.0 INTRODUCTION

Columbia Environmental Consulting Ltd. (Columbia) was commissioned by the Lower Nicola Indian Band (LNIB) on behalf of Indian and Northern Affairs Canada (INAC) to conduct a Phase I Environmental Site Assessment (ESA) of the Nicola Mameet Indian Reserve # 1, herein referred to as the “Site”.

The Site is located 4.0 km northwest of Merritt B.C. at Zone 10 654125, 5559205N on topographic NTS map sheet 092I02. The Site’s geographic position relative to the surrounding features is shown on Figure 1 included in Appendix A.

The Phase I ESA follows procedures outlined in the Canadian Standards Association (CSA) document *Z768-01 Phase I Environmental Site Assessment, April 2003*. This report will be used in making decisions concerning whether further investigation and or remediation is necessary. John Keating and Sharon Parsons (LNIB Lands and Leasing Office) provided written authorization for the project.

1.1 OBJECTIVE

The objective of this Phase I ESA is to identify and document any actual or potential human health or environmental risks associated with the Site and provide recommendations for further assessment and/or risk management. Such as the “Areas of Potential Environmental Concern” (APECs), with their associated “Contaminants of Potential Concern” (COPC), and the person(s) or agencies that may be responsible for causing the contamination.

1.2 SITE BACKGROUND

The Nicola Mameet IR# 1 is comprised of approximately 11,350 acres on one reserve approximately 4km west of Merritt, BC. The reserve is irregular but roughly rectangular in shape, extending north from the Nicola River and Highway 8. The Nicola River flows west to east through the southern portion of the Site. Guichon Creek flows north to south through the Site. The Site contains an oil and gas pipeline right of way, road networks, residences, a sawmill, a fire department, band office, community school, community centers, arbor, gas station, gravel pit, motor speedway, ASTs and residential dumps.

In 1995 a Phase II Environmental Issues Inventory was conducted for the LNIB which identified a number of concerns on the Nicola Mameet IR1 including Mojo’s Gas Station, Merritt Sewage Treatment Plant (off-reserve), abandoned rail line, asbestos piping, and road impacts to a drinking water well. Between the years of 1997 to 2000 a multi-phased UST removal and replacement program was undertaken. A total of five (5) fuel storage tanks were addressed and remediated at the Site during the program, including tanks at the Band Office, Kindergarten Building/Community Hall, Charlotte Joe’s residence, and 2 other residential heating oil storage tanks. Further investigation was recommended for Mojo’s Gas Station and the Shulus School AST (previously removed). No further works have been reported since 2000 and there is the potential for current environmental conditions to have changed.

2.0 SCOPE OF WORK

The first step in site characterization is to conduct a Phase I ESA. During this phase, information is gathered about site layout and previous activities and/or operations which may have caused contamination at the Site.

The Phase I ESA consisted of the following:

- records review;
- interviews with regulatory officials and personnel knowledgeable about the Site;
- site reconnaissance; and
- information evaluation and preparation of the report provided herein.

The Phase I ESA was conducted as per the requirements of the CSA document *Z768-01 Phase I Environmental Site Assessment, April 2003*.

The Phase 1 ESA focused on preliminary areas of interest identified prior to the site visit, through historical document review, and interviews. A list of these areas is included in Section 5.1.1. . The interior and exterior of community structures or improvements within the subject area were excluded for building evaluations unless information was gathered to suggest contamination or external visual observations indicated potential contamination. In such instances, it is the responsibility of the First Nation to provide the Assessor with access to the identified area of interest. In general, all residential structures were excluded unless information was gathered to suggest contamination or external visual observations indicated potential contamination. Specific residential structures listed for inspection at the request of the First Nation or INAC require the permission from the First Nation and the Certificate of Possession holder.

2.0 METHODOLOGY

2.1 RECORDS REVIEW

Records included a search for previous environmental reports, historical aerial photographs, city directories, fire insurance maps, federal and provincial agency review, Lower Nicola Indian Band records, and regional district records. The applicable search distance for the records review included properties immediately adjacent to the Site, and other properties (as identified by aerial photographs, etc.) where the potential for environmental contamination to impact the Site was apparent (i.e. petroleum product storage in the immediate area). A reference of personal communications is included at the end of this report in Section 11.0.

2.2 INTERVIEWS

Interviews with persons knowledgeable about the Site were carried out to obtain or confirm information on the environmental characteristics of the property and historical use. Information provided by interviewees is detailed in Section 5, and included throughout the

report. Interviews were conducted by Dwight Shanner and Carmen Marshall from Columbia Environmental on September 14, 2010.

2.3 SITE VISIT

The site visit was conducted by Summer Zawacky, B.Sc., Carmen Marshall, B.Sc. from Columbia Environmental and Harold Joe from LNIB on September 27th, 28th and 30th, 2010. A site inventory was completed and the subject property was examined for evidence of actual or potential environmental contamination. All areas of the reserve and structures were accessible during the site visit, and GPS coordinates were taken at each point of interest using a hand held Garmin GPS Map 60Cx as UTM's in the NAD 83 datum. Physical limitations were not observed during the site visit, and all locations were accessible to Columbia personnel. Selected photographs are included in Appendix B.

3.0 HISTORICAL RECORDS REVIEW

3.1 RECORDS REVIEW

An outline of the history of land use on the subject property and adjacent properties was compiled through the review of the variety of information sources. These typically include historical records and a review of files retained by regulatory agencies, however; the following standard sources of information were not available:

- Fire insurance drawings;
- City/Business directories; and
- Historical Title search.

For the historical uses of the property, aerial photographs dating back to 1948, interviews, web searches, archives, and previous reports supplied by INAC and the provided important information. A list of sources and references for the records review is provided in Section 11. The BC online Site Registry search results are found in Appendix C. Correspondence can be found in Appendix D and examples of historical aerial photographs can be found in Appendix E. A list of Species at Risk potentially in the Site area can be found in Appendix F. Previous Environmental Reports can be located in Appendix G.

3.1.1 REVIEW OF AERIAL PHOTOGRAPHS

Aerial photographs dated 1948, 1951, 1960, 1968, 1972, 1991 and 2000 from the University of British Columbia's Geographic Information Centre (UBC GIC) were reviewed for information about land use at the subject property and adjacent lands. Copies of representative aerial photographs are included in Appendix E. Site details from the aerial photograph interpretation are briefly described below in the following table:

Table C. Air Photo Review Summary

Aerial photo Year	Description
1948	<i>Subject Property:</i> Highways 8 and 97 are visible. The surrounding area at the highway junction shows plots with varied vegetation cover which depict agricultural usage. The Nicola River and Guichon Creek meander through IR #1. Agricultural use of land is visible in the south portion of Mameet IR #1. The north section of the Site has no development with exception of Highway 97C.
	<i>Adjacent Lands:</i> Lands to the north and east of the Site are undeveloped. Lands to the south are bordered by the Nicola River with agricultural usage. Land to the west has visible agricultural and residential use, (currently the town of Lower Nicola).
1951	<i>Subject Property:</i> Due to the photograph scale no visible changes were noted.
	<i>Adjacent Lands:</i> No visible changes were noted.
1960	<i>Subject Property:</i> At the highway junction there is an increase in cleared vegetation. Road networks are visible between cleared plots of land. In the north section, Highway 97C is visible with a linear line of cleared vegetation that runs parallel to the highway. A square area of cleared vegetation is visible in the north section.
	<i>Adjacent Lands:</i> No visible changes.
1968	<i>Subject Property:</i> Vegetation removal within the previously noted agricultural lands has increased. The surrounding lands show no other changes.
	<i>Adjacent Lands:</i> On the western portion of the Site an increase in development of the town of Lower Nicola is noted. The disturbed area of a mine is visible west of the reserve boundary. An increase in agricultural and residential development is visible on the southern portion of the Site. No visible changes apparent for the eastern and northern portions of the Site.
1972	<i>Subject Property:</i> No visible changes.
	<i>Adjacent Lands:</i> The open pit and mine waste areas are visible to the west of the reserve boundary. No other visible changes are noted.
1991	<i>Subject Property:</i> No visible changes.
	<i>Adjacent Lands:</i> No visible changes.
2000	<i>Subject Property:</i> Gravel pit is visible adjacent to Highway 97 C. The arbor, band hall, and residential developments are visible adjacent to Highway 8. A new residential subdivision is visible on reserve north of the town of Lower Nicola (Rocky Pines). The race track for the Merritt Speedway is visible north of Highway 8.
	<i>Adjacent Lands:</i> An increase in development within the town of Lower Nicola is visible and includes increased roads and agriculture. An increase in development including road networks and agriculture is visible to the south. No visible changes noted to the east and north of the Site.

3.1.2 CITY DIRECTORIES

The Merritt Public Library was contacted in regards to any business directories. They did not have record of City/Business directories for the reserve.

3.1.3 LOWER NICOLA FIRE DEPARTMENT

The Merritt Fire Department and Lower Nicola Fire Department (LNFD) were contacted regarding any historical information for the Nicola Mameet IR 1. Fire records were obtained from Fire Chief Lindsay Tighe of LNFD, and are attached in the Appendix C. In 2005 to 2010 a total of 141 fire responses occurred within Speous IR 8 and Nicola Mameet IR1. Of the total fires, thirty five (35) were grass/ debris fires, six (6) structural, three (3) natural gas leaks, one (1) car, and thirteen (13) wood chip piles. The remaining were medical type calls. Details such as fire location were not available due to time constraints of the Fire Department. Fire Insurance Maps were not produced for the reserve showing fuel tank locations.

3.1.4 HISTORICAL TITLE SEARCH

A historical title search was not considered relevant for this project, as the subject property has remained in the authority of the federal government since its inception.

3.2 AGENCY REVIEW

Columbia contacted federal, provincial, regional, and municipal agencies to identify actual or potential environmental contamination issues on or near the subject Site. The following sections of the report present the findings of the regulatory review conducted for the subject property.

3.2.1 LOWER NICOLA INDIAN BAND

LNIB maintains a file with the original surveys of lot boundaries and utilities serviced to each lot. Utilities maps show power, water and sewer lines/septic fields. Copies of the surveys were requested through the housing department, but Columbia has not received information at the time of this report.

3.2.2 FEDERAL GOVERNMENT

The INAC Environmental Management System database, IEMS (formerly ESSIMS), had records of seven (7) sites including:

- **Band Office UST (ESSIMS #7000086197)**
 - 1100L heating oil and 170L sludge was pumped out of the 1275L UST prior to tank removal on October 22, 1999.
 - No signs of contamination were identified in surrounding soil and area was backfilled. Site is closed.

- **Kindergarten/ Community Hall UST (ESSIMS #7000086297)**
 - 1335L heating oil and 30L of sludge were pumped out the 3005L UST prior to its removal on October 20, 1999.
 - No signs of contamination were identified in surrounding soil and area was backfilled. Site is closed.

- **Charlotte Joe’s Residence & 2 other Residential ASTs (ESSIMS #7000086397)**
 - 552L of heating oil and 60L sludge were pumped from the 1135L AST prior to its removal on October 21, 1999. Approximately 10m³ of suspected contaminated soils were removed. Only the confirmatory sample 2.5 m deep on the east wall of the excavation had concentrations of LEPH greater than commercial/industrial standards. No further excavation of the area was completed due to access.
 - 10L of product was removed from John Shuters (House #98) 445L AST prior to its removal on October 23, 1999. No signs of contamination were identified in surrounding soil. Site is closed.
 - Nearly empty 445L AST was removed from the residence of Eddie Toodlican on October 23, 1999. No signs of contamination were identified in surrounding soil. Site is closed.
 - Third AST mentioned in records is off-reserve.

- **UST at Shulus School (ESSIMS #7000086497)**
 - Tank removed in the 1980’s with no soil testing completed.
 - Location of tank could not be identified by band members at the time of the assessment in 1999.
 - No further works were undertaken.

- **Mojo Gravel Works and Gas Station (ESSIMS #7000129399)**
 - Four (4) USTs installed in 1987 beneath a concrete pad east of fuel pumps
 - Waste oil storage in empty 205L drums reported
 - AST reported on-site with some hydrocarbon staining in soil
 - The USTs were left in place because they are privately owned
 - First Nations Emergency Services (FNES) recommends the USTs be removed or replaced to meet relevant codes and guidelines.

The Treasury Board of Canada Contaminated Sites Action Plan site registry had the following identical information for each site listed as above with the exception of Mojo’s Gravel Works and Gas Station. Mojo’s Gravel Works and Gas Station was observed to have the status “Initial Testing Completed. Detailed Testing Underway”.

3.2.3 MINISTRY OF TOURISM

The Ministry of Tourism’s archeology branch was contacted regarding any archeological records for the Site. Three records were found within the Site’s boundary and nine (9) off-

site adjacent to the reserve. No archeological overview assessment data is available for the Site. A map of the locations and the response can be located in Appendix D.

3.2.4 BC MINISTRY OF ENVIRONMENT – SITE REGISTRY

The contaminated sites provisions under the *Environmental Management Act* (Formerly the *Waste Management Act*) and *Contaminated Sites Regulations*, effective April 1997, require the Province to provide public information about site investigations and cleanups. The Site Registry has been established to meet this requirement. The Site Registry documents milestones in the site assessment process and provides public access to this information. It contains information regarding which sites have been investigated and/or remediated since MoE began recording this activity. The Site Registry is not a registry of only contaminated sites; it also includes sites for which a Site Profile has been submitted.

The online version of the Site Registry database searches for records of sites within a 5.0 kilometer radius of the subject property. The Site Registry has been collecting data only since its inception in April 1997, and not all sites of known or potential contamination within the search area may have been captured. Therefore, the searches cannot be considered a definitive method of identifying all sites of potential contamination within the search area. The Site Registry search results are presented in Appendix C and are summarized below:

Subject Property

According to two BC Online searches, there were no records in the Site Registry for the subject property.

Adjacent Properties

According to BC Online searches there were two records in the Site Registry for the adjacent properties when two 5.0 km radius searches were completed using the north and south of the reserve the search center. A detailed report was requested for each record and is described below.

Site Profile for Turtle Tracks Contracting

- Truck, Rail or Marine Bulk Freight Handling
- No spills greater than 100 liters reported
- No residue left after the removal of piled materials such as chemicals
- No discarded barrels, drums or tanks
- No migrating contamination of substances from other properties
- Investigation not required

Remediation of an AST/UST in Lower Nicola

- Inactive: remediation complete
- Suspected land use-Petroleum products, Produce water storage tank (above or below ground)
- Letters of comfort issued to; David Bevan, Daniel Kuiper, Colleen Laviolette and Zenon Environmental

3.2.5 TOWN OF MERRITT

Sean O’Flaherty of the City of Merritt was contacted requesting any information regarding environmental or contamination issues or building permits for the lands of LNIB. The City has no records regarding the subject property and adjacent lands, and do not maintain any such records for facilities operating on Reserve Lands.

3.2.6 MERRITT MUSEUM & ARCHIVES

The Museum of Merritt was contacted via phone regarding any environmental records or City/ Business directories that may be recorded for the Site. The Museum did a search for lands within LNIB and three (3) records of City/Business directories were found for the Site. The first date in the phonebook listing for the following businesses is detailed below.

- Mojo’s Ready Mix (1987)
- Merritt Speedway (1991)
- Johnny’s on the Rez (1998)

3.2.7 THOMPSON NICOLA REGIONAL DISTRICT

Peter Hughs of the environmental department with the Thompson Nicola Regional District (TNRD) was contacted requesting any information regarding environmental issues on or near LNIB. Mr Hughs stated that the district has no records regarding the subject property and they do not maintain any such records for facilities operating on reserve lands.

3.2.8 TERASEN (FORMERLY BC GAS)

Toni Melliere of Terasen Gas was contacted regarding service connections to the subject property including any current or historical issues that are likely to have resulted in environmental impacts on the Reserve. Terasen has no record of environmental issues that may have occurred on the subject property or adjacent properties. Terasen does not keep records pertained to the service initiation and decommissions as standard company policy.

3.2.9 FORTIS BC (FORMERLY BC HYDRO)

Louise Ouelett of Transmission Distribution and Environment at Fortis BC was contacted regarding the presence of service connections to the subject property including any current or historical issues that are likely to have resulted in environmental impacts on the reserve. Fortis has no record of environmental issues or transformer locations (possibly containing PCBs) that may have occurred on the subject property or adjacent properties.

3.3 PREVIOUS ENVIRONMENTAL INVESTIGATIONS

In 1995 a Phase II Environmental Issues Inventory was completed by BOVAR-CONCORD Environmental (BCE) for the Lower Nicola Band on behalf of Indian and Northern Affairs Canada (INAC). The report involved completing an inventory and creating a compilation of

known, existing and potential environmental issues on the reserves. Five (5) issues were identified for the Nicola Mameet IR#1 including impacts from the highway on a drinking water well, Mojo's Gas Station, sewage contamination of the Nicola River by the Merritt Sewage Treatment Plant, an abandoned rail line, and potential asbestos piping used on reserve.

The drinking water well is located within 5 m of the highway near the intersection of highways 8 and 97C. Correspondence between BC MoE and Health Canada indicated that current no exceedances of drinking water quality standards were found in recent (1995) sampling of the well.

Mojo's gas station is reported to contain two steel 7570 L underground storage tanks greater than 10 years in age that have reportedly never been tested for leaks, and have the potential to corrode and leak over time.

Anecdotal evidence suggested that the Merritt Sewage Treatment Plant had reached capacity and the overflow went into the Nicola River. BC MoE, Health Canada, and Merritt Public Works were not aware of any such release.

An abandoned rail line runs through the southern portion of IR#1, and was said to have been abandoned and investigated 10 years prior to 1995. The rail line is a concern for the band as the investigation did not reveal any environmental concerns, no documentation was available for review, and a reported fuel spill had occurred along the line with no records of location, date, fuel type, or amount. BC MoE could not determine the location of a fuel spill.

Asbestos piping had also been identified by the band as a potential concern, however, no one was able to identify the locations that such pipe had been used.

The drinking water quality issue, Mojo's Gas Station, and sewage contamination of the Nicola River were classified as medium risk sites. The abandoned rail line and asbestos piping were considered low risk sites. The environmental condition of the reserve was deemed good.

In 1999, Klohn-Crippen Consultants Ltd (Klohn-Crippen) completed a Phase I and II ESA for Mameet IR# 1, Joeyaska IR# 2, Pipeul IR # 3, Zoht IR #4 and Speous IR #8 on behalf of First Nations Emergency Services Society of BC (FNESS). The report focused on the assessment, removal and replacement of fuel storage tanks. Nicola Mameet IR#1 was found to have four (4) fuel storage tanks and two residential heating oil ASTs. The three fuel tanks (3) required removal and one (1) that had previously been removed. Fuel storage tanks were located at the Band Office, Kindergarten Building, Charlotte Joe's residence, and one AST had been removed from the Shulus School. The heating oil ASTs were reportedly in residential developments, but the locations were not specified. Two (2) USTs were identified at Mojo's Gas Station, but were not investigated as the property was leased by a third party.

In 2004 Klohn-Crippen Consultants Ltd (Klohn-Crippen) completed a Phase III ESA for Mameet IR# 1 on behalf of First Nations Emergency Services Society of BC (FNESS). The report focused on the assessment, removal and replacement of fuel storage tanks that

included Phase III work and follow-up investigations. In total, 5 ASTs were removed from the reserve. Tank #1 (Band Office) was 1275L in size, with 1100L product and 170L sludge removed prior to tank removal. Tank #2 (Kindergarten Building) was 3005L in size with 1335L of product and 30L of sludge removed. Tank #3 (Charlotte Joe's Residence) was 1335L in size with 552L product and 60L sludge removed prior to tank removal. Two (2) empty 445L heating oil ASTs were removed from John Shuter and Eddie Toodlicans residences. All tanks were pumped empty and removed between October 20-26, 1999. The former location of the AST removed from Shulus School in the 1980's could not be identified. No signs of soil contamination were identified in Tank #1, 2, or the two residential ASTs, and no soil was removed. Soil contamination below the AST at Charlotte Joes residence was excavated and stockpiled on the property. Confirmatory soil samples in this location indicated concentrations of LEPH (2450 mg/kg) at 2.5m depth above the applicable guidelines of the day, but was not accessible for excavation due to the house foundation. Borehole drilling and soil sampling was recommended for further investigation.

In 2005 Klohn-Crippen completed the Contaminated Soil Management for the UST and AST Removal Program, Okanagan, Kootenay, and Part of Fraser Canyon Regions. The focus of the report was on the removal and management of contaminated soil stockpiles from the subsequent AST/UST removal program. The soil stockpile at Charlotte Joes residence was sampled using composite sampling methods, determined to be of agricultural quality, and was spread on the Site.

Copies of the previous environmental reports can be found in Appendix G.

3.4 INTERVIEWS

Interviewees included: Marvin Shuter, Willie Basil, Francis Shuter, Delia Shuter, Ira Sterling, Maggie Shuter Harold Joe. Interviews with LNIB members identified the following concerns:

Table D. Summary of Information Obtained from Interviewees

Area of Concern	Location	Description
Nicola Mameet IR #1	On Junction of Hwy 8 & 97C	<ul style="list-style-type: none"> ○ Lot 87-4 AST /spill ○ Debris at Lot 87-4 (on Snake Road) ○ Abandoned house with potential mold and asbestos (Lot 105) ○ Abandoned house with potential asbestos – now used as storage (Lot 72-1)
	Located at the Junction of Hwy 8 and Mamit Lake Rd	<ul style="list-style-type: none"> ○ Shulus spring has had a decrease in flow and quality of water may be impacted by the adjacent highway. Water is used for ranch irrigation up gradient.
	Located south of Hwy 97C. Drive to south end of Vought	<ul style="list-style-type: none"> ○ Nicola River Dump contains vehicles, domestic waste, appliances, metals, and

Area of Concern	Location	Description
	St, turn right on Lindley Creek Road	furniture and is directly adjacent to Nicola River. Debris is within floodplain.
	4 km north from band office in Rocky Pines Subdivision	<ul style="list-style-type: none"> ○ Rocky Pines residential dump. ○ Rocky Pines Car crushing and storage. ○ 3 residential ASTs (Lot 219, 254, and 279)
	Located 0.7 km north of the Hwy 8 Junction on Mamit Lake Rd.	<ul style="list-style-type: none"> ○ Mojo’s Gas Station & USTs (now closed) ○ Currently leased to Peter Brothers and used as an asphalt plant and Gravel Pit.
Nicola Mameet IR #1	Two dumps located near a school (south) and Guichon Creek (north) on Mamit Lake Ranch Road.	<ul style="list-style-type: none"> ○ Northernmost dump contains building materials, automotive parts, bottles, cans, vehicles, appliances, batteries, and is buried. ○ Southern location contains domestic waste, building materials, automotive parts, vehicles, metals, and is buried. Some illegal dumping still occurs. ○ Began use as dumpsites in 1950-60’s. ○ Both dumps are decommissioned. ○ Small amounts of illegal dumping in surrounding area to the north
	Located 1.7km north of Hwy 8 Junction on Mamit Lake Rd	<ul style="list-style-type: none"> ○ Target Shooting Area (East of Mamit Lake Road) near Mojo’s gravel pit or OK Corals ○ Used for local target practice
	Located 1.7km north of Hwy 8 Junction on Mamit Lake Rd	<ul style="list-style-type: none"> ○ Saw mill (West of Mamit Lake Rd) on Lot 146 with fuel storage.
	Located on Hwy 8 across from “Johnny’s on the Rez” Gas Station & Store	<ul style="list-style-type: none"> ○ Pump house for Spectra Energy. Concerns with the seasonal flow of water over gas lines towards Nicola river.
	Highway 8 (0.5km east from Band Office)	<ul style="list-style-type: none"> ○ “Johnny’s on the Rez” Gas Station and ASTs on Lot 78-2 ○ Former ASTs are abandoned to the south on Lot 183 ○ Gas station has never had underground tanks
	Located on Nawashaskin Lane on the west border of the reserve	<ul style="list-style-type: none"> ○ Firehall Burn pile with various types of burnt debris
	Located on Moses-Bent Road 4 km from Band office	<ul style="list-style-type: none"> ○ Lot 81 Burnt house has open foundation and water within basement ○ Burnt metals and appliances surrounding building footprint ○ Rail tie pile south of house
	Near Four Mile Lake east of Highway 97C (Mamit Lake Road).	<ul style="list-style-type: none"> ○ Former dump site is buried and surrounded with chain link fence ○ Contains mostly building materials and

Area of Concern	Location	Description
	Rail line 600m west of the reserve at former switch	<ul style="list-style-type: none"> ○ domestic waste ○ Listed with INAC as “not properly closed”. ○ CP Rail line and ore transfer station may contain copper ore and heavy metals ○ Switch is directly adjacent to Nicola River which flows onto reserve.
Nicola Mameet IR #1	Rail Line on the western portion of the reserve, south of subdivision at Band Office	<ul style="list-style-type: none"> ○ Three (3) neighborhood dumps by rail bed. Contain tin cans, bottles, vehicles, and radio batteries. ○ Dump 1 is on Lot 17 & 18, Dump 2 is on Lot 86, and Dump 3 is south of Lots 3,4,and 5.
	800m north of Highway 8 Junction on Mamit Lake Ranch Road	<ul style="list-style-type: none"> ○ Merritt Speedway on Lot 198 ○ No maintenance or repairs completed on-site
	Mamit Lake Ranch Road	<ul style="list-style-type: none"> ○ Lower Nicola Indian Band Scholl AST

4.0 SITE DESCRIPTION

4.1 GENERAL PROPERTY DESCRIPTION

The Lower Nicola Indian Band is comprised of ten reserves that total 17,500 acres. Nine reserves are located within the Merritt area and the most northern parcel (Hihium IR #6) is located approximately 65 km north of the city of Kamloops B.C. Nicola Mameet IR #1 is the largest of the 10 reserves, is an irregular rectangle in shape, 11,350 acres in size, and oriented with the long edge running north-south. Coordinates for the Site are zone 10 654125, 5559205N on topographic NTS map sheet 092I02. The majority of land use in the area is residential and agricultural on the southern portion, wild lands on the northern portion, and with two industrial areas along Mamit Lake Road (Gravel Pit and Sawmill). Nicola river runs west to east through the Site, and Guichon Creek runs north to south. A right of way for the oil and gas pipeline located through the center of the Site. The Site is accessible by vehicle on highway gravel and paved roads.

4.1.1 SITE DETAILS

Based on the information identified in the interviews, historical review, and site visit, the reserve was divided into the following areas which were the focus of the site visit:

1. Rocky Pines Car Crushing west of lot 232-1
2. Lot 219 AST (Rocky Pines Subdivision)
3. Rocky pines residential Dump East of Lots 252 & 253
4. Lot 254 AST (Rocky Pines Subdivision)

5. Lot 279 AST (Rocky Pines Subdivision)
6. Mamit Lake Road Four Mile Dump
7. Buried Dump 1 Mamit Lake Ranch Road South
8. Buried Dump 2 Mamit Lake Ranch Road North
9. Target Shooting Area
10. Lot 297 AST (East of Highway 97C)
11. Lot 294 AST (East of Highway 97C)
12. Lot 146 Sawmill
13. Lot 265 Mojo's Gravel Pit
14. Lot 105 Abandoned House
15. Lot 87-4 Debris
16. Lot 87-4 AST
17. Lot 72-1 Abandoned House
18. Lot 67 Shulus Spring
19. Lot 208 AST (213E Highway 8)
20. Lot 208 AST (225E Highway 8)
21. Lot 58 AST (260E Highway 8)
22. Lot 58 AST (280E Highway 8)
23. BC Plan 215 Nicola River Dump
24. BC Plan 215 Shulus Road AST
25. Spectra Energy Adjacent to Lot 96
26. Lot 78-2 Johnny's Gas Station
27. Lot 183 Abandoned Gas Station ASTs
28. Lot 81 Burnt House
29. Rail Tie Pile
30. Lot 17 & 18 Residential Dump
31. Lot 86 Residential Dump
32. Lot 12 AST (Nawashaskin Lane)
33. Residential Dump south of Lot 3,4,5
34. Fire hall Burn Pile
35. Lot 197 AST (2196 Highway 8)
36. School AST
37. Lot 198 Speedway
38. Lot 200 AST (Fyall Road)
39. Ore Transfer Station (CP)- Off-reserve
40. Turtle Tracks Industrial- Off-reserve

The table on the following pages summarizes the major features of the former and current land uses of each area, and any other relevant information pertaining to this study. The sites visited on the reserve are shown in Figures 1-29 in Appendix A.

Table E. Site Area Summary

Area ID (UTM Zone 10)	Potential Environmental Issues / Description	Structures Present	Historical Land Use	Current land Use
Rocky Pines Car Crushing 652042E 5560471N	<ul style="list-style-type: none"> • 27 crushed cars in stacks (15m x 10m) • Contains approximately 21 un-crushed vehicles • Area contains freezers, lead acid batteries, tires, automotive fluids, empty 205 L drums, active tractor/ forklift and miscellaneous debris • Petroleum hydrocarbon storage in open containers • Vehicle maintenance occurring on-site • Site is not paved 	<ul style="list-style-type: none"> • None 	Wildlands	Wildlands
Lot 219 AST 652242E 5560564N	<ul style="list-style-type: none"> • Diesel AST (4500L) • Small spotty soil staining below tank and on wooden support structure • No secondary containment 	<ul style="list-style-type: none"> • None 	Wildlands	Residential
RockyPines Residential Dump 652383E 5560134N	<ul style="list-style-type: none"> • Two small debris piles (3 m and 5 m diameter) on the bank 50 m from Guichon Creek • Debris includes; galvanized fencing, plastic debris, plastic siding and storm water pipes. 	<ul style="list-style-type: none"> • None 	Wildlands	Wildlands
Lot 254 AST 652282E 5560126N	<ul style="list-style-type: none"> • Diesel AST (2500L) • Small (<10 cm) spotty stain below hose • Properly labeled and double walled • No secondary containment 	<ul style="list-style-type: none"> • None 	Wildlands	Residential
Lot 279 AST 0652293E 5559918N	<ul style="list-style-type: none"> • Empty Diesel AST (4500L) • No stains or odor in soil below • Properly labeled • Not in original location - tenant unsure of original location 	<ul style="list-style-type: none"> • None 	Wildlands	Residential

Area ID (UTM Zone 10)	Potential Environmental Issues / Description	Structures Present	Historical Land Use	Current land Use
Mamit Lake Road Four Mile Dump 653572E 5560186N	<ul style="list-style-type: none"> • Dump has been decommissioned and covered • Three (3) monitoring wells surround the buried dump • Covered mound measures 80m x 15m x 1.2m • Fence surrounds property, but gate has been removed & small pile of domestic waste is observed at entrance (3m diameter) 	<ul style="list-style-type: none"> • None 	Wildlands	Industrial
Buried Dump 1 Mamit Lake Ranch Road South 652666E 5558129N	<ul style="list-style-type: none"> • Decommissioned dump is buried with recent surface debris • Buried dump measures 60 m x 20m • Surface debris pile (10m x 35m) includes electronics, appliances, furniture, appliances, paint cans, building materials, scrap metals, rubber tires, and domestic waste • Monitoring well located southeast of the dump 	<ul style="list-style-type: none"> • None 	Wildlands	Wildlands
Buried Dump 2 Mamit Lake Ranch Road North 652747E 5558858N	<ul style="list-style-type: none"> • Decommissioned dump is buried with recent surface debris • Buried debris measures 80m x 15m • Surface debris (20m x 12m) includes building materials, petroleum hydrocarbon containers (empty), automotive parts, domestic waste, metals, electronics, appliances, and wood waste • Monitoring well located southeast of the dump 	<ul style="list-style-type: none"> • None 	Wildlands	Wildlands
Mamit Lake Road Target Shooting Area 654646E 5558339N	<ul style="list-style-type: none"> • Two (2) areas of target practice. • Bullet holes are visible on stump (northern Backstop Area) and one wooden target (southern Backstop Area) • Shell casings were observed at the southernmost firing area. 	<ul style="list-style-type: none"> • None 	Wildlands	Wildlands
Lot 297 AST 655198E 5558332N	<ul style="list-style-type: none"> • Empty Diesel AST 1800L • Empty Gas AST 1800L • Empty 800L tank with former contents unknown, an open 20L oil pail adjacent with staining. 	<ul style="list-style-type: none"> • None 	Wildlands	Residential

Area ID (UTM Zone 10)	Potential Environmental Issues / Description	Structures Present	Historical Land Use	Current land Use
	<ul style="list-style-type: none"> • Empty 2000L red tank with unknown contents is not in use • 2 empty Tidy Tanks-not in use • Empty septic tank – not in use. 			
Lot 294 AST 654604E 5557801N	<ul style="list-style-type: none"> • 2 Diesel ASTs (1600L each) • 3m x 0.5m stained soil below • Tanks appear in good repair 	<ul style="list-style-type: none"> • None 	Wildlands	Residential
Lot 146 Sawmill 654216E 5556808N	<ul style="list-style-type: none"> • Sawmill machinery is inactive – flaws in machine • No wood treatment on-site • Sawmill is a “chipper mill” • 4500L Diesel AST- new • 4000L Propane tank - new • Hydrocarbon product handling and storage • Industrial equipment and vehicles 	<ul style="list-style-type: none"> • De-barker • Conveyors • Chipper • Lunch room • Weigh station • Electrical room • Steel Storage Containers (3) • Night Watchmen Residence • ASTs 	Wildlands	Industrial
Lot 265 Mojo’s Gravel Pit 654329E 5556808N	<ul style="list-style-type: none"> • Former Mojo’s Gravel pit and Gas station. • No record of UST removal from the Gas Station • Monitoring wells installed near reported UST location • Area is currently utilized as a gravel pit and asphalt plant • 31000L dual tank (gas/diesel) double walled AST • 2 abandoned ASTs in gravel pit area • 4 ASTs attached and part of portable asphalt plant • Pump house down gradient from Site 	<ul style="list-style-type: none"> • Warehouse • Mojos Gas Station Building • Concrete Pad for AST • Asphalt Plant • AST 	Wildlands	Industrial
Lot 105 Abandoned House 654503E 5556175N	<ul style="list-style-type: none"> • Abandoned house with mold throughout • Potential asbestos building materials in ceiling tiles and fireplace pad. • Appliances and stove with furniture still in house 	<ul style="list-style-type: none"> • Abandoned Residence • Small Wooden Barn • Wooden shed • Chicken Coop 	Wildlands	Residential

Area ID (UTM Zone 10)	Potential Environmental Issues / Description	Structures Present	Historical Land Use	Current land Use
Lot 87-4 AST 654444E 5556164N	<ul style="list-style-type: none"> 1 Diesel AST (4500L) Stained soil below (1m diameter) Tank is partially full No secondary containment 	<ul style="list-style-type: none"> Metal storage crate adjacent 	Wildlands	Residential
Lot 87-4 Debris 654420E 5556238N	<ul style="list-style-type: none"> No significant debris noted on-site 	<ul style="list-style-type: none"> None 	Wildlands	Residential
Lot 72-1 Abandoned House 654486E 5556095N	<ul style="list-style-type: none"> Utilized as a storage shed Vacant due to known Xenolite insulation containing Asbestos 	<ul style="list-style-type: none"> House with blue paint exterior, asphalt shingles and tractor in yard 	Wildlands	Residential
Lot 67 Shulus Spring 654589E 5555909N	<ul style="list-style-type: none"> Spring used for irrigation Possible Lead in the shed's paint Potential impacts from adjacent Highway right of way 	<ul style="list-style-type: none"> Wooden Shed (2m x 2m) Pumphouse with Spring Sump 	Wildlands	Wildlands
Lot 208 AST (213E) 654749E 5555735N	<ul style="list-style-type: none"> Empty Diesel AST (2300L) Not at a permanent location Weeping at the nozzle Hose is cracked in two areas 	<ul style="list-style-type: none"> None 	Wildlands	Residential
Lot 208 AST (225E) 654867E 5555589N	<ul style="list-style-type: none"> 1000L Diesel AST 1350L Gas AST 2300L AST unknown contents 2 empty tidy tanks in area – not in use 	<ul style="list-style-type: none"> None Collapsed Barn Decayed Shed 	Wildlands	Residential

Area ID (UTM Zone 10)	Potential Environmental Issues / Description	Structures Present	Historical Land Use	Current land Use
Lot 58 AST (260E) 654855E 5555240N	<ul style="list-style-type: none"> Empty Diesel AST (900L) in treated wood frame Weeping at nozzle and rusting tank Empty AST (900L) is empty on its side, not in original location No stains or odor below either tank 	<ul style="list-style-type: none"> None 	Wildlands	Residential
Lot 58 AST (280E) 654900E 5555102N	<ul style="list-style-type: none"> Empty heating oil AST (300L) No staining or odors Not in original location 	<ul style="list-style-type: none"> None 	Wildlands	Agricultural
BC Plan 215 Nicola River Dump 654202E 5554569N	<ul style="list-style-type: none"> Domestic debris (50m x 80m) scattered down talus slope immediately adjacent to Nicola River 10 cars have be dumped over a bank on the shore of Nicola River Concentrated area of debris (30m x 30m) contains furniture, domestic waste, automotive parts, appliances, scrap metals, empty containers, and building materials 	<ul style="list-style-type: none"> None 	Wildlands	Wildlands
BC Plan 215 Shulus Road AST 654194E 5554572N	<ul style="list-style-type: none"> 1350L empty gas AST 2400L empty unknown AST 1600L empty diesel AST No stains or odors below ASTs 1m diameter diesel stain 10m east of barn – potential former tank location 	<ul style="list-style-type: none"> None 	Wildlands	Residential
Lot 96 Spectra Energy 653577E 5556159N	<ul style="list-style-type: none"> Gas pipeline that runs through Nicola Mameet IR #1 	<ul style="list-style-type: none"> Gas pipeline Gated Station Building – No Access 	Wildlands	Utility ROW surrounded by Agricultural
Lot 78-2 Johnny's Gas Station 653625E	<ul style="list-style-type: none"> Active Gas Station & Store since 1994 Paved below fueling islands, parking lot, and ASTs 9000L double walled Diesel AST with 1m 	<ul style="list-style-type: none"> Gas Station, Pump Islands Adjacent Heavy Equipment Storage 	Wildlands	Commercial

Area ID (UTM Zone 10)	Potential Environmental Issues / Description	Structures Present	Historical Land Use	Current land Use
5556100N	<ul style="list-style-type: none"> diameter stain on concrete below nozzle 46000L dual tank double-walled Gas AST 10000L propane tank 	<ul style="list-style-type: none"> Three (3) ASTs 		
Lot 183 Abandoned Gas Station AST's 653463E 5555698N	<ul style="list-style-type: none"> Two empty ASTs (14000L and 5000L) on concrete 8m x 4m rubber tires and dimensional wood waste on concrete No stains or odour 	<ul style="list-style-type: none"> None 	Wildlands	Commercial
Lot 81 Burnt House 653278E 5556032N	<ul style="list-style-type: none"> Burnt residence concrete foundation Open basement (2.2m deep) with water Burnt house debris includes burnt appliances, electronics, heaters, building materials, paint pails, furniture, insulation, and metal debris. Wooden shed with adjacent surface debris including metal frame trailer, oil stove, woodstove, plow, and dimensional wood waste Area is extremely overgrown – physical hazard 	<ul style="list-style-type: none"> Concrete foundation Wooden shed Wooden fence 	Wildlands	Residential
Rail Tie Pile 653223E 5555894N	<ul style="list-style-type: none"> Creosote treated wood is on the border of agricultural land and a wetland 	<ul style="list-style-type: none"> None 	Wildlands	Wildlands
Lot 17 & 18 Residential Dump 653223E 5555894N	<ul style="list-style-type: none"> Buried residential dump (20m x 8m) Dump contains mostly domestic waste, metal debris, and vehicle parts. 	<ul style="list-style-type: none"> None 	Wildlands	Residential
Lot 86 Residential Dump 652973E 5556056N	<ul style="list-style-type: none"> Residential dump (20m x 6m) Active in the 1920's to current Debris includes kerosene tins, vehicle, and domestic waste within a wetland 	<ul style="list-style-type: none"> None 	Wildlands	Wildlands

Area ID (UTM Zone 10)	Potential Environmental Issues / Description	Structures Present	Historical Land Use	Current land Use
Lot 12 AST 652924E 5556138N	<ul style="list-style-type: none"> 900L AST with unknown contents No staining or odor No labels and is rusted 	<ul style="list-style-type: none"> None 	Wildlands	Residential
Residential Dump South of Lot 3,4,5 652742E 5556145N	<ul style="list-style-type: none"> Residential Dump (55m x 25m) Dump contains old cars, domestic waste, building materials, glass, metals, and furniture Buried in the late 1960's 50m from Nicola River and surrounding wetland 	<ul style="list-style-type: none"> None 	Wildlands	Residential
Fire hall Burn Pile 652535E 5556181N	<ul style="list-style-type: none"> Burn pile (10m x 6m) includes computer, shelves, bumper siding, drywall, light ballasts, two culverts, paint cans, car hood, windows and fence post. 	<ul style="list-style-type: none"> None 	Wildlands	Wildlands
Lot 197 AST 652604E 5556610N	<ul style="list-style-type: none"> 900L AST unknown contents No access to property, observation taken from adjacent roadway Some weeping noted on tank, potential for staining below. 	<ul style="list-style-type: none"> None 	Wildlands	Agricultural
School AST 652675E 5556806N	<ul style="list-style-type: none"> New double walled dual tank AST (24,000L) Fenced and on concrete pad 	<ul style="list-style-type: none"> None 	Wildlands	Residential
Lot 198 Speedway 652606E 5557376N	<ul style="list-style-type: none"> Speedway for automobiles Reported that no automobile maintenance occurs at the track. Gravel track is lined with rubber tires 	<ul style="list-style-type: none"> Gravel Race Track Wooden grandstands Concession stand Ticket Booth 	Wildlands	Commercial

Area ID (UTM Zone 10)	Potential Environmental Issues / Description	Structures Present	Historical Land Use	Current land Use
Lot 200 ASTs 651774E 5557470N	<ul style="list-style-type: none"> • 4500L AST with unknown contents • 1200L Gas AST • 2300L Diesel AST • Soils in area are stained and odorous • Empty tidy tank is adjacent and not in use 	<ul style="list-style-type: none"> • None 	Wildlands	Residential
Ore Transfer Station (CP) - Off-reserve 651933E 5556599N	<ul style="list-style-type: none"> • Ore transfer station • 8m diameter burn pile with metals and building materials • Discarded treated wood bridge with metal support • 2m diameter diesel stain on rail line right of way • 600m from Reserve and directly adjacent to Nicola River which flows onto Reserve • Visible sulphur oxidized copper ore and staining 	<ul style="list-style-type: none"> • None 	Wildlands	Industrial
Turtle Tracks Industrial - Off-reserve 651640E 5556694N	<ul style="list-style-type: none"> • Machine storage, ASTs and oil/ fuel containers not properly stored. • No access to site granted 	<ul style="list-style-type: none"> • Shop and machinery with fuel storage containers 	Wildlands	Industrial

4.1.2 STRUCTURES INVENTORY

Various structures and debris were noted throughout the areas visited during the Phase I ESA. Structures generally consisted of abandoned buildings, burnt building footprints, sheds and barns, a sawmill and associated machinery, gas stations, and pump houses. As the focus of this investigation was on previous sites, ASTs, waste materials and potential contamination sources, residences and municipal structures were generally not within the scope of work and are not included in the structures inventory unless indicated in interviews for potential contamination issues. A summary of the structures observed at the various sites is detailed in the table below.

Table F. Summary of Structures On-Site

Area ID	Structure Name	Description/Contents
654216E 5556808N Lot 146 Sawmill	De-barker (20m x 8m)	<ul style="list-style-type: none"> • Steel frame attached to conveyor belts and saw blades • Electric run
	Conveyor belts (12m x 4m)	<ul style="list-style-type: none"> • Contains metal and rubber materials
	Chipper (10m x 8m)	<ul style="list-style-type: none"> • Wood chip processing • Electric run • Conveyor belts • Steel frame
	Lunch room (13m x 7m)	<ul style="list-style-type: none"> • ATCO trailer • Wood frame construction • Metal siding and roof • 23 full hydraulic oil containers stored to the south
	Weigh Scale (6m x 4m)	<ul style="list-style-type: none"> • Tarred asphalt roof • Wood frame construction • Vinyl siding • Electric run
	Electrical room (15m x 4m)	<ul style="list-style-type: none"> • Wood frame • Metal roof • Breaker boxes and electrical panels • Storage of sealed containers of oils and lubricants
	Night Watchman Residence (8m x 10m)	<ul style="list-style-type: none"> • Wood frame construction • Vinyl siding • Tarred asphalt roof
	Inactive Sawmill Building (35m x 19m)	<ul style="list-style-type: none"> • Metal frame and roof • Sawmill is un-operational – bad design • Occasional empty 205L drums and partially full 20L oil containers
	Control room (5m x 5m)	<ul style="list-style-type: none"> • Elevated on steel frame • Metal grates for flooring
	Metal Storage Containers (3) (8m x 4m)	<ul style="list-style-type: none"> • Steel metal storage containers containing sealed containers of oils and lubricants

Area ID	Structure Name	Description/Contents
Lot 265 Mojo's Gravel Pit 654329E 5556808N	Mojo's Gas Station Building (13m x 4m)	<ul style="list-style-type: none"> Asphalt shingle roof Wood siding and frame Glass windows with metal bars Concrete foundation Building was locked – third party owner
	Pump house (20m x 30m)	<ul style="list-style-type: none"> Concrete foundation Metal frame and roof Galvanized chain link fence surrounding building
	Portable Asphalt plant (50m x 15m)	<ul style="list-style-type: none"> Asphalt silo & associated conveyor belts Trailer with fuel tank and compressor (3m x 17m) 2 in-ground concrete lined holding tanks (12m x 2m) Two metal truck trailers with fuel tanks and engine (12m x 6m) Gravel bins (12m x 3m)
	Asphalt plant office (3m x 5m)	<ul style="list-style-type: none"> Portable wood frame trailer Vinyl siding
	Abandoned Warehouse (12m x 30m)	<ul style="list-style-type: none"> Wood siding Metal roof Automotive fluids stored on the southwest corner
	Trailer (1m x 4m) and treated temporary bridge (3m x 5m)	<ul style="list-style-type: none"> Trailer has a metal frame and four rubber tires Bridge materials consist of dimensional treated timbers and a steel frame
	Outhouse (1m x 1m)	<ul style="list-style-type: none"> Untreated wood structure Metal pipe on southern corner
Lot 105 Abandoned House 654503E 5556175N	Abandoned Residence (8m x 10m)	<ul style="list-style-type: none"> Asphalt shingles on roof with painted wood siding Contain mold throughout house, concentrated in storage room and bedroom Potential asbestos in fireplace and ceiling tile House contains furniture appliances, clothing, hot water tank and household debris
	Small Wooden Barn (5m x 5m)	<ul style="list-style-type: none"> Wood frame/roof Contains wood waste and occasional metals
	Wooden Shed (3m x 2.5m)	<ul style="list-style-type: none"> Wood frame/roof Contains metal debris, glass, and metal polish
	Chicken Coop (2m x 5m)	<ul style="list-style-type: none"> Wood frame Corrugated metal roof Contains insulation and carpet Chicken wire surrounds coop
Lot 72-1 Abandoned House 654486E 5556095N	Abandoned Residence (9m x 7m)	<ul style="list-style-type: none"> Active storage for domestic goods Xenolite insulation contains asbestos

Area ID	Structure Name	Description/Contents
Lot 67 Shulus Spring 654589E 5555909N	Wooden Shed (2m x 2m)	<ul style="list-style-type: none"> • Wood frame and siding • Contains gas powered sump pump
	Pump house (4m x 6m)	<ul style="list-style-type: none"> • Asphalt shingle roof • Wood frame and siding with potential lead based paint • Contains insulation • Has sump to underground spring
Lot 96 Spectra Energy 653577E 5556159N	Power station And fence (60m x 30m)	<ul style="list-style-type: none"> • Spectra energy meter station includes three (3) meter stations • Gas pipeline • Gravel is spread throughout the area • Herbicide use warning is posted on the gate
Lot 78-2 Johnny's Gas Station 653625E 5556100N	Gas station (15m x 25m)	<ul style="list-style-type: none"> • Active convenience store with kitchen • Wood frame construction • Concrete foundation
	Heavy Equipment Storage (30m x 22.5m)	<ul style="list-style-type: none"> • Storage area is fenced • Contains old metals, trucks, low beds, furnaces and car parts stacked in a tidy fashion
Lot 81 Burnt House 653278E 5556032N	Burnt house frame (20m x 7m)	<ul style="list-style-type: none"> • Concrete foundation • Open basement 2.2m deep with standing water • Contains burnt metals, appliances, chimney, stove and pipe, burnt electronics, tile, aerosol cans and domestic debris
	Wooden Shed (3m x 2m)	<ul style="list-style-type: none"> • Wood frame and asphalt shingle roof • Contains foam, insulation, domestic debris
Lot 198 Speedway 652606E 5557376N	Grandstands (70m x 5m)	<ul style="list-style-type: none"> • Wood frame with white paint • Electrical wiring and lighting
	Concession (8m x 4m)	<ul style="list-style-type: none"> • Wood frame with white paint • Electrical wiring
	Participant Ticket Office (5m x 3m)	<ul style="list-style-type: none"> • Wood frame and siding • Electrical wiring

4.2 TOPOGRAPHY

The Site is roughly rectangular in shape situated along the Guichon Creek valley which runs from the north to the south. The Nicola River Valley is located running west to east along the southern portion of the Reserve. The western portion of the Reserve is relatively flat, gently sloped to the south, and ranges in elevation from 915m above sea level in the north to 600m in the south. The eastern portion of the Reserve is sloped to the west and borders the Nicola Provincial Forest. Elevation on the eastern portion of the property ranges from 1250m along the eastern border to 600m, where the mountains of the Nicola Provincial Park meet the Guichon Creek floodplain.

4.3 GEOLOGY

The Site is located within an unnamed unit of granodioritic intrusive rocks (East), the Princeton Group (West), Nicola Group – Western Volcanic Facies (South), and an unnamed formation of feldspar porphyritic intrusive rocks (southwest corner). The unnamed granodioritic intrusive rocks and the Nicola Group – Western Volcanic Facies are part of the Quesnel Terrane within the Intermontane Belt. The unnamed granodioritic intrusive rocks are comprised of granodiorite (rich in plagioclase feldspar, biotite mica, and hornblende), quartz diorite, quartz monzonite, lesser monzonite, and gabbro. The Nicola Group - Western Volcanic Facies consists of undivided volcanics including mafic to felsic pyroclastic rocks and flows, argillite, sandstone, and local carbonates. The Princeton Group formation is comprised of undivided sedimentary rocks including sandstone, conglomerate, argillite, and coal (including the Coldwater beds, and Allenby formation). The Princeton Group is an Overlap Terrane in the Intermontane Belt. The unnamed formation of feldspar porphyritic intrusive rocks consists of hornblende-biotite-quartz-feldspar porphyry, hornblende-feldspar porphyry, and quartz-feldspar porphyry in a Post Accretionary Terrane within the Intermontane Belt (Ministry of Energy, Mines, & Resources, 2010).

Surficial materials overlying the bedrock consist of a till veneer of varying thickness. These surficial materials are generally made up of unconsolidated compositions of silt, sand, gravel, and cobbles. Surface soils within the reserve are classified as eutric brunisols, which typically develop on coarse textured fluvio-glacial deposits, or grey luvisols, typical of the grassland-forest transition zone (Ministry of Energy, Mines, & Resources, 2010).

4.4 SURFACE DRAINAGE

Surface drainage at the Site is anticipated to be primarily infiltration into the underlying soils. Surface run-off is anticipated to flow down gradient from areas of higher elevation along the east portion of the reserve west, toward Guichon Creek. Surface run-off on the southern portion of the reserve is anticipated to flow to the south, toward the Nicola River.

4.5 CLIMATE DATA

The tables below provide climate values and monthly precipitation values as collected at Merritt B.C. Metrological Station, based on data from 1971 to 2000¹. The average annual precipitation is 322.2 mm.

¹ www.climate.weatheroffice.ec.gc.ca

Table G. Climate Values for 1971-2000

Meteorological Station Elevation:	609.0m
Daily Mean Temperature:	7.4°C
Annual Rainfall:	238.9mm
Annual Precipitation:	322.2mm
Highest Monthly Average Precipitation:	Dec, 39.6mm
Lowest Monthly Average Precipitation:	April, 14.5mm

Table H. Precipitation Values for 1971-2000

Month	Average Precipitation (mm)	Month	Average Precipitation (mm)	Month	Average Precipitation (mm)
January	37.2	May	26.8	September	23.6
February	23.6	June	34.1	October	23.5
March	16.6	July	25.8	November	34.7
April	14.5	August	22.1	December	36.9

4.6 UTILITIES

The LNIB Public and Capital Works department summarized the utility information on the Site. There are approximately 125 residential properties on the Site. Twenty (20) are on a community septic system along with the Band School, Health Centre, and the Arena. The other residential houses are on individual septic systems. The houses are heated with gas and/or electricity and/or propane with the number for each heating type unknown. The residences are serviced by underground water and overhead electrical power. Water and power lines are adjacent to the roadways in most locations.

4.7 ADJACENT PROPERTIES

The adjacent lands to the north of the Reserve contain residential lots, road networks, oil and gas pipeline, transmission lines, and Highway 97C. The remaining lands to the north remain undeveloped. A 30” gas pipeline was installed in 1956 and a 36” pipeline was installed in 1992. Spectra has no recorded environmental spills or incidents for that section of the pipeline. They undertake regular ongoing maintenance and they do not anticipate replacement of the lines unless warranted and based on a thorough evaluation including an environmental impact assessment. Kinder Morgan now owns the oil pipeline and there has been no response regarding their environmental records as of the date of this report.

Adjacent properties to the west remain undeveloped with the exception of a few logging roads and cut blocks. To the south, Highway 8 and the Nicola River run through the Site. The adjacent properties to the south of the reserve are utilized for residential and agricultural

occupation. Two off-site APECs are listed west of the Site including Turtle Tracks Industrial and the CP Ore Transfer Station is located 0.6 km west of the reserve boundary, and directly adjacent to the Nicola River which flows onto the reserve. Both off-site APECs are located on private property. On the southwestern border of the Reserve is the town of Lower Nicola, with residential and agricultural land use. To the west of the central portion of the reserve is a former open pit mine and mine waste area, the tailings area is 220 m down gradient of the site. Road networks and scattered cut blocks are located along the northern portion of the western reserve border.

4.8 VALUED ECOSYSTEM COMPONENTS (VECs)

The Site is located on the floodplain of Nicola River, in Bunchgrass and Interior Douglas Fir (IDF) biogeoclimatic zones. Representative trees in this ecosystem include Douglas fir, trembling Aspen, lodgepole pine, ponderosa pine, hybrid spruce, Rocky Mountain juniper. Shrubs for the area include species such as snowberry, common juniper, Saskatoon, Kinnikinnik, red osier dogwood, black gooseberry, prickly rose and false box. Herbs common to the area include bluebunch wheatgrass, pinegrass, wheatflower, bunchberry, yarrow, sedges (spp) and spike rushes to name a few (Ministry of Forests 1991).

A list of species from the BC Conservation Data Center (CDC) search, indicating species found within the area has been included in Appendix F. Characteristic wildlife in the region (CDC) include, but is not limited to, moose, mule deer, black bear, cougar, elk, grizzly, eagle, big horn sheep, badger, coyote, wolf, marmot, raven, spruce grouse, and various waterfowl.

A number of potential species on-site are considered Species at Risk by COSEWIC² and receive special protection for critical habitats. Provincially, red listed (being considered for designation as threatened or endangered) or blue listed (considered vulnerable) species, by the BC Ministry of the Environment, means that they require special management attention. The semi-pristine natural lands within the area of the Site are favorable Species at Risk Act (SARA) listed species habitat. A biological inventory would be required to further investigate the potential presence of Species at Risk.

4.9 WATER WELLS

The BC MoE water well database³ was searched in a 0.5 km radius from the Site. Fifty seven (57) of the wells are located within the 0.5km radius. Approximately nineteen (19) of these wells are located on-site. The usage of the majority of the wells is unknown with the others listed as private/domestic, abandoned and three (3) listed as water service systems. Due to the large size of the Reserve, and numerous wells located at the Site, it is recommended that

² COSEWIC means the Committee on the Status of Endangered Wildlife in Canada

³ Ministry of Environment. 2010. Water Resource Atlas Web Mapping Application http://www.env.gov.bc.ca/wsd/data_searches/wrbc/index.html

specific water well information be obtained on an “as needed” basis should any of the areas investigated require further assessment.

4.10 HISTORICAL LAND USE

Mameet IR # 1 has historically been utilized for residential and agricultural land use. Hunting, fishing and gathering were and are traditional uses of the Reserve lands. Residences have been historically present in the central portion of the Site. Industrial usage at the sawmill and Mojo’s Gravel pit and gas station has been on-going for more than 10 years, as indicated in the interviews and historical review.

4.11 REGULATORY HISTORY

Between the years of 1995 and 2000, an UST/AST removal program and associated remediation was undertaken at the Site. These activities are detailed in the previous ESAs in Section 3.3 above. Five (5) ESSIMS data sheets were identified for the Site, and have been discussed in Section 3.2.2 above. Copies of previous environmental reports and ESSIMS sheets are included in Appendix G.

5.0 FINDINGS

5.1 FUEL / CHEMICAL HANDLING AND STORAGE

Numerous 205L and 45L drums were observed throughout the Reserve including:

- at the Lot 146 Sawmill,
- Mojos Gas Station and Gravel Pit,
- Rocky Pines Car Crushing,
- adjacent to several ASTs,
- within the Nicola River Dump, and
- occasionally within the buried dump sites.

Smaller, approximately 20L and 4L pails and containers were also observed at these locations, and were observed to contain a variety of oils, grease, paints, and lubricants. The occasional container was open and overflowing. In most cases the storage of petroleum hydrocarbon products were directly over bare soil and lacked secondary containment, with the exception of the sawmill in which containers were observed to be neatly stacked in metal crates or on concrete, and at occasional locations near the asphalt plant at Mojo’ Gas Station and Gravel Pit where a poly liner was noted below leaking equipment and oil containers. Most fuel and oil containers noted within the dump sites were empty, with no obvious odors or staining. Open petroleum hydrocarbon storage and open containers may pose a risk of environmental contamination of contacting media.

Hazardous materials including cleaners, solvents, wet batteries, paint, and miscellaneous petroleum products are stored and used within many of the sites visited, however only areas with poor management or environmental concern are discussed in the table below. Hazardous

materials containers were observed in many dump sites and debris areas, and are discussed within the solid waste inventory.

Table I. Summary of Hazardous Materials

Location (Site ID)	Description of Hazardous Materials
Rocky Pines Car Crushing 652042E 5560471N	Area contains lead acid batteries on the ground, bathtub full of used oil containers, engine blocks on ground, full gas cans, open pan of oil, 20L oil pails full of gear oil, hydraulic oil, and heavy duty oil, 14 empty 205L drums filled with scrap metals and automotive parts, used oil filters, propane tanks, and aerosol cans scattered throughout the area. Site is not paved, is stained in various locations, and is odorous. Vehicle maintenance and repairs are occurring at the Site.
Lot 294 ASTs 654604E 5557801N	Petroleum hydrocarbon storage is occurring at the property surrounding the ASTs, and includes used automotive parts, partially full 20L pails of gear oil, smaller 1L to 4L oil containers, antifreeze, lead acid battery and used oil filters. Area has spotty soil stains and odor.
Lot 146 Sawmill 654216E 5556808N	Electrical room and steel storage containers contained sealed PHC products in a neat and orderly fashion. Abandoned AST not in original location, 205L sealed drum of transformer fluid on concrete in sawmill building. 28x 20L pails of hydraulic fluid are on an unpaved surface south of lunchroom. One of the 20L pails is open and has the potential to overflow.
Lot 265 Mojo's Gravel Pit 654329E 5556808N	2 abandoned ASTs and a tidy tank are empty and discarded in gravel pit, not in original location – no staining or odor. 4 ASTs are in use as part of the portable asphalt plant, and are not included in the logs as they are part of a larger structure – some soil staining noted below hoses, but poly liner observed 30cm below soil. Sulphur staining was noted in soils to the west of the asphalt plant. 7 full sealed 205L drums containing product for heat transfer systems were noted adjacent to the asphalt plant. 4 full pvc drums were noted south of Mojoes Station and labeled as “polyheed”, “MBAE90”, and Pozzolith”. An empty red tank labeled “Caustic Solution” was noted adjacent to the 4 pvc drums. 4L oil containers (1/4 full), 2 empty 205L drums, lead acid battery, and propane tank were noted adjacent to the warehouse. Occasional 20L pails were noted throughout the site.
Lot 208 AST (225E) 654867E 5555589N	Some faming machine parts, 20L oil pails, empty 205L drum, and gas cans were noted in the vicinity of the former AST during the site visit. No soil staining or odor was noted in the area.
Lot 78-2 Johnny's Gas Station 653625E 5556100N	Gas station stores and sells various types of oils, fuels, cleaners, and solvents. No issues regarding the storage of liquids were noted.

Conflicting information from the historical review was not able to clarify whether the USTs at Mojo’s Gas Station have been removed. Monitoring wells installed at the station suggest a monitoring program has been undertaken, however; no report detailing either the tank removal or groundwater monitoring results were identified. In lieu of this supporting documentation, further subsurface investigation in regards to the USTs is recommended.

Thirty-one (31) ASTs are present throughout the Site, and details of the ASTs are provided in the Table below and in Appendix H. Additional ASTs that appear abandoned and not in use are not included in the AST logs. These ASTs are assumed to not be in their original location and are included as solid waste in Section 5.2. Hydrocarbon, chemical, and fuel containers identified within dump sites are discussed in the solid waste inventory, and not included in the table below.

Table J. Fuel and Chemical Details

AST #	Location (Site ID)	Capacity / Description	Contents	Active	Condition
1	Lot 219 AST 652242E 5560564N	4 500L	Diesel	Yes	<ul style="list-style-type: none"> • Spotty soil staining (<10cm) below hose and bung • Wooden support structure is heavily stained • No secondary containment
2	Lot 254 AST 652282E 5560126N	2 500 L	Diesel	Yes	<ul style="list-style-type: none"> • Tank in good condition • Tank on concrete blocks • Double walled • Small spotty stain below hose
3	Lot 279 AST 652293E 5559918N	4 500 L	Diesel – empty	No	<ul style="list-style-type: none"> • Empty for 7 years • Weeping at bung and hose fitting • No secondary containment • No soil staining below • Not in original location – tenant unsure of former location
4	Lot 297 ASTs 655198E 5558332N	1 800L	Diesel	Yes	<ul style="list-style-type: none"> • Slightly rusted • No signs of leakage • Hoses and nozzles in good condition
5		1 800L	Gas	Yes	<ul style="list-style-type: none"> • Slightly rusted • No signs of leakage • Hoses and nozzles in good condition
6		800L	Unknown	No	<ul style="list-style-type: none"> • Tank is rusted, dented, empty, and on the ground. • Not in original location • Open 20L oil pail is adjacent and open with soil staining
7		2000L	Unknown	No	<ul style="list-style-type: none"> • Tank is red and open at fill inlet • Tank is not in original location and no staining or odors were noted. Empty septic tank is adjacent.

AST #	Location (Site ID)	Capacity / Description	Contents	Active	Condition
N/A		2 tidy tanks	Unknown - empty	No	<ul style="list-style-type: none"> Two 300L tidy tanks are in decent condition, and not in use
8	Lot 294 ASTs	1 600L	Diesel	Yes	<ul style="list-style-type: none"> Weeping bung /fill pipe rusted and intact No secondary containment Stain below (1.5 m x 0.5m)
9	654604E 5557801N	1 600L	Diesel	Yes	<ul style="list-style-type: none"> Weeping bung /fill pipe rusted and intact No secondary containment Stain below (1.5m x 0.5m)
10	Lot 146 Sawmill 654216E 5556808N	4 500 L	Diesel	Yes	<ul style="list-style-type: none"> New tank less than a year old Secondary containment – concrete pad Traffic blockades Double walled No stains or odors 4000L new propane tank is within compound with secondary containment
11	Lot 265 Mojo's Gravel Pit	31 000L	Diesel	Yes	<ul style="list-style-type: none"> Double walled Secondary containment Card locked Dual tank sided tank AST new with slight rusting On a concrete pad 0.5m x 0.5m stain on concrete Propane tank on concrete pad behind warehouse
N/A	654329E 5556808N	2 Abandoned empty ASTs and Tidy Tank	Unknown	No	<ul style="list-style-type: none"> 2 Empty open, rusted ASTs are abandoned in gravel pit, and not in use. 1 empty tidy tank is located within metal wastes on the northern portion of the property
12	Lot 87-4 AST 654444E 5556164N	4 500L	Diesel	Yes	<ul style="list-style-type: none"> Rust on support structure Tank is rusted No secondary containment Stain below tank (1.0 m diameter) Tank is partially full Open 20L pail of radiator fluid is adjacent

AST #	Location (Site ID)	Capacity / Description	Contents	Active	Condition
13	Lot 208 AST (213E) 654749E 5555735N	2 300L	Diesel	No	<ul style="list-style-type: none"> Weeping at the nozzle Hose in cracked in two areas Temporary location No secondary containment or barricades to traffic 0.1m diameter stain below tank
14	Lot 208 AST (225E) 654867E 5555589N	1000 L	Diesel	No	<ul style="list-style-type: none"> Weeping bung Tank rusted No secondary containment Possibly not original location No staining or odor
15	Lot 208 AST (225E) 654867E 5555589N	1350L	Gasoline	No	<ul style="list-style-type: none"> Weeping bung Tank rusted No secondary containment Possibly not original location No staining or odor
16		2 300L	Unknown	No	<ul style="list-style-type: none"> Weeping at the bung Tank rusted No secondary containment Possibly not original location No staining or odor
N/A		2 empty tidy tanks	Unknown – empty	No	<ul style="list-style-type: none"> Tidy tanks appear in decent condition No soil staining or odor
17	Lot 58 AST (260E) 654855E 5555240N	900L	Diesel	No	<ul style="list-style-type: none"> Not in use for 10 years Treated wood frame Not locked Weeping at nozzle Rusted tank Second 900L tank is adjacent and on its side – not in original location and is considered waste materials No stains or odor
18	Lot 58 AST (280E) 654900E 5555102N	300L	Heating oil	No	<ul style="list-style-type: none"> Some rust at the bung Weeping at the vent and fill pipe No staining or odors Tank likely not in original location
19	BC 215 Shulus Road AST	1 350L	Gasoline	No	<ul style="list-style-type: none"> Tank is empty Slight rusting on tank No secondary containment No stains or odors observed

AST #	Location (Site ID)	Capacity / Description	Contents	Active	Condition
20	654194E 5554572N	2 400L	Unknown	No	<ul style="list-style-type: none"> No in original location Some rusting on the tank No secondary containment No stains or odors observed
21		1600L	Diesel	No	<ul style="list-style-type: none"> Not in original condition No secondary containment No stains or odors observed 1m diameter diesel stain noted 10m east of current tank location in front of barn
22	Lot 78-2 Johnny's Gas Station	9 000L	Diesel	Yes	<ul style="list-style-type: none"> New tank in excellent condition Double walled Secondary containment Traffic barricades (fence) 1m diameter stain on concrete below nozzle
23		653625E 5556100N	46 000L	Gasoline – Dual Tank	Yes
24	Lot 183 Abandoned Gas Station AST's	13 000L	Unknown-Empty	No	<ul style="list-style-type: none"> On a concrete pad No evidence of staining or odors Double walled Former tank from Johnny's Gas Station
25		653463E 5555698N	5 000L	Unknown-Empty	No
26	Lot 12 AST 652924E 5556138N	900 L	Unknown	No	<ul style="list-style-type: none"> Tank is rusted No weeping, hoses intact No secondary containment Not in use and no stains or odor
27	Lot 197 AST 652604E 5556610N	900 L	Unknown	Yes	<ul style="list-style-type: none"> No site access granted Weeping at nozzle Some rust, concentrated around fill pipe Potential soil staining below tank

AST #	Location (Site ID)	Capacity / Description	Contents	Active	Condition	
28	School AST 652675E 5556806N	24 000 L	Unknown	Yes	<ul style="list-style-type: none"> New double walled tank Fenced & concrete pad No stains or odors All vents hoses and pipes are new 	
29	Lot 200 ASTs	4 500 L	Unknown-Empty	Yes	<ul style="list-style-type: none"> Weeping at bung No secondary containment Some rusting on tank 0.5m diameter stain below 	
30		1 200L	Gasoline	Yes	<ul style="list-style-type: none"> Empty tank Rusted vents, weeping bung No secondary containment 0.5m diameter stain below 	
31		651774E 5557470N	2 300L	Diesel	Yes	<ul style="list-style-type: none"> Rusted vents Fuelling hose is taped up Some rusting on the tank No secondary containment 0.5m diameter stain below
N/A		Empty tidy tank	Unknown	No	<ul style="list-style-type: none"> Tidy tank is stored beneath AST supports. Area surrounds ASTs is odorous with spotty stains 	

A notice of pesticide use was noted for the Spectra Energy Meter Station property, and was reported to be contained within the fenced compound. Pesticides used include the non-selective glyphosate based Vantage Max Plus II (Pest Control Registration #28840), and dicamba based Vanquish (Pest Control Registration #26980), and were applied on July 25, 2010. Both substances are registered under the Pest Control Act, and signs were visible throughout the property indicating the pesticide application had been undertaken.

Representative photographs of ASTs and fuel and chemical handling and storage are included in Appendix B.

Table I is a summary of Former UST/ASTs removed from the Site recorded in historical reports (Appendix G).

Table K. Summary of Former UST/ASTs Removed From the Site

Tank	Type	Location of Heating Oil Tank	Volume (L)	Remediation (October 1999, FNESS)
1	UST	Band Office	1275	UST was cut, cleaned and removed. Tank was intact with no signs of soil contamination. Backfilled with sand/gravel.
2	UST	Kindergarten (Comm. Hall)	3005	UST was cut, cleaned and removed. Tank was intact with no signs of soil contamination. Backfilled with sand/gravel.

Tank	Type	Location of Heating Oil Tank	Volume (L)	Remediation (October 1999, FNESS)
3	UST	Charlotte Joe's House	1135	UST was cut, cleaned and removed.. Small hole noted near filler and 10m ³ of soil was excavated but stopped due to septic tank, house, and fence. Site was backfilled with clean sand/gravel. East wall sample at 2.5m depth was 2450mg/kg LEPH and the only sample to exceed residential guidelines at the time of the report.
4	UST	Shulus School		UST was removed in the early/mid 1980's. No sampling was undertaken for a contamination assessment. In 1999, the site was visually investigated but no signs of the former location or backfill could be located. Not further works were undertaken.
5a	AST	John Shuter's House	445	AST was cut, cleaned and removed. was intact with no signs of soil contamination.
5b	AST	Eddie Toodlican's house	445	AST was cut, cleaned and removed. Tank was intact with no signs of soil contamination.

5.2 SOLID WASTE MATERIALS

Current solid waste is disposed of off-site at the at the regional district dump. There is currently no curbside pickup at the Site, therefore some unauthorized dumping still occurs on the reserve. Solid waste was observed scattered throughout the Site, noted in heavier concentrations within the Rocky Pines Car Crushing area, Four Mile Dump, buried Dump 1 and Buried Dump 2 on Mamit Lake Ranch Road, Lot 146 Sawmill, Mojo's Gravel Pit, Nicola River Dump, Rail tie pile, 3 residential dumps south of Nawishaskin lane, and the Band Firehall Burn Pile. Waste found within the scattered debris areas and debris piles generally included metals, tools, automotive parts, abandoned vehicles, empty oil containers, domestic waste, furniture, dimensional wood waste, building materials, tin cans of various shapes and sizes, insulation, roofing materials, tires, and appliances.

Some surface debris was also noted at the Rocky Pines Residential Dump and was scattered. Debris was also reported from interviews to be at lot 87-4, however no debris was noted during the site visit. Due to the limited nature of waste materials at these sites, they are not retained as an Area of Potential Environmental Concern, and not included in the inventory below.

Details of the debris areas and dump sites from the solid waste investigation are summarized in the table below. Fuel containers, storage of liquids, and storage of chemicals are discussed in the fuel and chemical handling section above, unless they are part of a mix debris pile. Debris included in current and former buildings have been included in the structures inventory above and not listed below.

Table L. Solid Waste Details

Site ID (Location)	Area Details	Content Description
Rocky Pines Car Crushing 652042E 5560471N	<ul style="list-style-type: none"> • 10m x 15m • Stacked Crushed Cars 	<ul style="list-style-type: none"> • Area contains 27 crushed cars stacked in two's. Area has hydrocarbon odor, but no stains could be observed below the vehicles.
	<ul style="list-style-type: none"> • 30m x 10m • Batteries • Car Parts • Hydrocarbon Products 	<ul style="list-style-type: none"> • Area contains 8 vehicles, 2 lead acid batteries on ground, 2 dune buggies, bath tub full of oil containers, 2 engines, 1 vehicle cab, and spotty soil staining and odor throughout
	<ul style="list-style-type: none"> • 5m diameter area • Hydrocarbon Products • 3m diameter tire rim pile adjacent 	<ul style="list-style-type: none"> • Area contains empty and partially full oil containers, jerry cans, open pail of gear oil, open pan of used oil, 20L hydraulic oil pails, and spotty soil staining and odor throughout. • Metal tire rims stacked in pile adjacent to hydrocarbon storage area.
	<ul style="list-style-type: none"> • 50m x 30m • Rubber tire pile (10m x 3m) • Appliances • Automotive parts • Empty 205L drums • Propane tanks • Batteries 	<ul style="list-style-type: none"> • The entire area contains scattered debris that is not within an observable pile. • This debris includes 3 freezers, 3 hot water tanks, 2 fridges, 1 stove, 1 dryer, 18 abandoned vehicles, automotive parts scattered on the ground throughout the area and piled within vehicles, 3 empty 205L drums, 6 propane tanks, 4 computers, scrap metal, BBQ, lawnmower, 2 engine blocks, scattered tires and a large tire pile, and 3 lead acid batteries on the ground. • Spotty soil staining and odor throughout.
	<ul style="list-style-type: none"> • 20m x 5m • Scattered Abandoned vehicles 	<ul style="list-style-type: none"> • Area contains 4 abandoned cars and 2 truck boxes.
	<ul style="list-style-type: none"> • 8m x 4m • Abandoned Vehicles • Automotive Parts • Empty 205L drums 	<ul style="list-style-type: none"> • Area contains 3 trucks filled with automotive parts, and 6 empty 205L drums. • Spotty soil staining and odor throughout.
	<ul style="list-style-type: none"> • 7m diameter • Wood waste pile • Miscellaneous debris 	<ul style="list-style-type: none"> • Area includes dimensional wood waste, shower liner pieces, rubber tires, tarp, rubber hoses, metal pipes, automobile gas tank, chassis, open lead acid battery, and snowboards.
Four Mile Dump	<ul style="list-style-type: none"> • 80m x 15m • Buried Wastes 	<ul style="list-style-type: none"> • Former dump site has been covered with soil. • Dumped materials reportedly buried at the Site include domestic waste, vehicle parts, building materials, appliances, metals, and various other wastes. Dumping was unsupervised and there is the potential for various types of waste within the buried dump.

Site ID (Location)	Area Details	Content Description
653572E 5560186N	<ul style="list-style-type: none"> • 3m diameter • Domestic waste pile 	<ul style="list-style-type: none"> • A recent pile of debris is located at the north gated entrance and includes mostly domestic waste.
Buried Dump 1 Mamit Lake Ranch Road South	<ul style="list-style-type: none"> • 50m x 30m • Buried Wastes 	<ul style="list-style-type: none"> • Former dumpsite has been covered with soil. • Dumped materials reportedly buried at the site includes domestic waste, vehicle parts, building materials, appliances, metals, and various other wastes. Dumping was unsupervised and there is the potential for various types of waste within the buried dump.
	<ul style="list-style-type: none"> • 65m x 10m • Scattered Surface Debris 	<ul style="list-style-type: none"> • Debris includes rubber tires, appliances, limited domestic waste, and an automobile gas tank.
	<ul style="list-style-type: none"> • 30m x 10m • Domestic Waste & surface debris 	<ul style="list-style-type: none"> • An active surface debris area is present on top of the buried dump and contains TV's, microwaves, a couch, appliances, paint cans (4L), gas heater, 2 Jerry cans, concrete pieces containing rebar, insulation, fencing, chicken wire, propane tank, wire cable, old furnace, tile (may contain asbestos), red wagon, sheets of plastic, burnt electronics, mattresses, carpet, metal cable, fan, metal wire, coffee maker, automobile air intake, aerosol cans, animal carcasses, 20 tires, bed frame, wheel barrow, 2 x 20L metal oil cans, tarp and empty antifreeze containers.
Buried Dump 2 Mamit Lake Ranch Road North	<ul style="list-style-type: none"> • 90m x 20m • Buried Wastes 	<ul style="list-style-type: none"> • Former dump site has been covered with soil. • Dumped materials reportedly buried at the site include domestic waste, vehicle parts, building materials, appliances, metals, and various other wastes. Dumping was unsupervised and there is the potential for various types of waste within the buried dump.
	<ul style="list-style-type: none"> • 20m x 10m • Domestic Waste & surface debris 	<ul style="list-style-type: none"> • An active surface debris area is present on top of the buried dump and contains appliances, electronics, 10 tires, empty 205L drum, bed frame, asphalt shingles, paint cans (4L), burnt couch, oil container (10L), bikes, burnt wood, foam, fuel filter, stucco, white tile, oil filters, car parts, domestic waste, antifreeze container, wheel bases, lawn mower bits and cardboard.
	<ul style="list-style-type: none"> • 5m diameter • Building materials 	<ul style="list-style-type: none"> • Pile contains stucco, white fibrous ceiling tiles, 3 - 20L oil pails, 6 used oil filters, inner tube, car parts, and some domestic waste.
	<ul style="list-style-type: none"> • 3m diameter • Concrete blocks 	<ul style="list-style-type: none"> • Pile contains broken concrete pieces.
Lot 146 Sawmill	<ul style="list-style-type: none"> • 10m x 5m • Abandoned mill machinery 	<ul style="list-style-type: none"> • Pile on southeast edge of property contains an old screener and engine. An abandoned AST is located inside the mill building. Pile on northwest edge of property also contains abandoned mill pieces (metal).
654216E 5556808N	<ul style="list-style-type: none"> • 6m x 2m • Metal debris 	<ul style="list-style-type: none"> • Scrap metals pile and empty "caustic solution" tank

Site ID (Location)	Area Details	Content Description
Lot 265 Mojo's Gravel Pit 654329E 5556808N	<ul style="list-style-type: none"> Metals Hydrocarbons Automotive parts 	<ul style="list-style-type: none"> Debris surrounding the warehouse and along the northern border of the property includes; truck box, 2 empty ASTs (one cut in half), empty (205L drums), truck front, car seat, dimensional wood beams, wire, rubber conveyor belt, 3 (205L) empty drums, metal scraps, approximately 8 ASTs within the asphalt plant, steel pipe, barb wire, pallets, welded steel, plastic pipe, conveyor belt, tidy tank and steel frame, lead acid battery, PVC pipes, plastic oil containers, oil burning furnace, motor oil containers (20(5L), 4(20L)), car hood, wheel barrow, compressed gas tank, muffler, an engine, and gear oil.
BC 215 Nicola River Dump 654202E 5554569N	<ul style="list-style-type: none"> 50m x 80m Abandoned vehicles Domestic waste Metals Appliances 	<ul style="list-style-type: none"> Automotive debris consists of 10 cars, fuel filters, rubber tires (30+), batteries and empty oil containers 30m x 30m concentrated area in center of dump includes domestic waste, 2 hot water tanks, computer, 3 TVs, keyboard, organ, furniture, freezers, 205L drum, tidy tank, fridge, jerry cans, washers, dryers, vacuum, PVC pipes, propane tank, steam cleaner, and an oil burning furnace. Miscellaneous debris is scattered throughout the bottom of the ravine and is adjacent to the Nicola River.
Rail Tie Pile 653223E 5555894N	<ul style="list-style-type: none"> 8m diameter Treated rail ties 	<ul style="list-style-type: none"> Former creosote ties are in a pile adjacent to the rail line right of way, within a seasonally wetted area.
Lot 17 & 18 Residential Dump 653223E 5555894N	<ul style="list-style-type: none"> 20m x 8m Domestic waste Scrap metals 	<ul style="list-style-type: none"> Residential dump is buried and contains mostly domestic waste and metals.
Lot 86 Residential Dump 652973E 5556056N	<ul style="list-style-type: none"> 20m x 6m Domestic waste Scrap metals 	<ul style="list-style-type: none"> Residential dump contains mostly tin cans, domestic waste, and one abandoned vehicle.

Site ID (Location)	Area Details	Content Description
Residential Dump south of Lot 3,4,5 652742E 5556145N	<ul style="list-style-type: none"> • 55m x 25m • Domestic waste • Scrap metals 	<ul style="list-style-type: none"> • Residential dump contains glass, building materials, electronics, abandoned vehicles, metals, and domestic waste. Dump has been covered over. Dumping was unsupervised so there are the potential for various unknown substances within the dump.
Fire Hall Burn Pile 652535E 5556181N	<ul style="list-style-type: none"> • 10m x 6m • Electronics • Building Materials • Metals 	<ul style="list-style-type: none"> • Burn pile contains computer tower and monitor, wooden shelves, vinyl siding, drywall, light ballasts, two corrugated steel pieces, bumper, paint cans, car hood, metal window frames, and fencing materials.

5.3 SPILLS AND STAIN AREAS

Minor stains associated with the use and handling of petroleum hydrocarbons were noted the Rocky Pines Car Crushing; Lots 219, 254, 297, 294, 87-4, Plan 215, 197, and 200; ASTs; Mojo's gravel pit; and the off-reserve CP Ore Transfer Station. These soil stains were generally 0.1-1.0m in diameter, and appeared surficial. These spill and stain area have been identified within the AST and Fuel and chemical handling sections above.

Sulphur soil staining was also noted within Mojo's Gravel Pit, and the off-reserve CP Ore Transfer Station. Further investigation should be undertaken at these locations to determine the presence or absence of contaminated media.

5.4 WASTEWATER DISCHARGE

Wastewater produced at the Site is limited to domestic effluent discharged via local septic systems. No concerns with regard to wastewater discharge were noted at the Site during this investigation.

5.5 AIR DISCHARGES

Sources of former air emissions at the Site have historically included the use of diesel and gasoline fuels, heavy equipment, farm equipment, vehicles, oil and wood stoves, and generators. Similar sources of current air emissions are anticipated. No concerns with regard to air discharge were noted at the Site during this investigation.

5.6 POLYCHLORINATED BIPHENYLS (PCB)

There were no records of PCB containing transformers or capacitors on-site. No environmental concerns regarding PCBs were determined during this investigation. BC Hydro has an inventory of transformers that have >50 ppm and are in the process of decommissioning any of these transformers within their network.

5.7 ASBESTOS

The use of friable asbestos as a building material was banned in the U.S. in the mid 1970s. The manufacture of building materials containing asbestos was generally phased out in North America by the mid 1980s.

The presence of asbestos has not been confirmed in the site structures, but it is possible that asbestos may be present in such materials as insulation, cement products, grouts, plaster, compressed papers and boards, linoleum, floor tiles, duct tapes, sealants and protective coatings. Asbestos within the Lot 105 and Lot 72-1 abandoned residences is likely but not confirmed, otherwise material resembling friable asbestos was not observed during the site reconnaissance. If demolition or renovation of structures is considered, the identification and safe removal or containment of asbestos is regulated under Section 20.112 of the OHSR.

When these materials are in use they are not waste materials; however, following removal it is recommended that they be managed in accordance with the *Hazardous Waste Regulation* and the *Environmental Management Act*.

5.8 HEAVY METALS

There is the potential for localized metals impacts to surface soils due to the presence of miscellaneous metal debris and burning of metal and other wastes. A discussion of the potential sources of metals impacts has been included in the solid waste inventory above.

The Nicola Valley Railway was a subsidiary connecting Merritt to Spences Bridge in 1891 and passes through the Site at the south. The railway was a subsidiary of CP Rail. Coal was the reason the railroad was built and coal was its main source of revenue. Lumber soon became the second major source of income and Coyle shipped copper concentrate. Coyle has a small passenger station located on a 20 car passing siding on the east side of the main. Behind this there is a 20 car loading track for loading copper concentrate from the Craigmont Mine. Supply logs and cattle ranching equipment were transported along the rail line. The CP rail Ore Transfer Station site is 600 m up gradient of the reserve and the rail line is adjacent to the Site. The transfer station has coal, sulfur, and copper ore onsite that may also be along the rail line.

The Target Shooting Area had two (2) areas of target practice. Bullet holes are visible on a stump (northern Backstop Area) and one wooden target (southern Backstop Area). There were 5 shell casing found and band members state that local shooting contests have been held in the area. Hunters or gun owners also utilize the area although usage is not monitored.

5.9 OZONE DEPLETING SUBSTANCES (ODS)

No evidence to suggest environmental contamination by ODS were identified. Many of the dump sites contain appliances, and there is the potential for a release of ODS from the decay of these materials. The appliances should be removed and properly disposed at a permitted facility to prevent any release of ODS.

5.10 NOISE

No environmental issues concerning noise were noted during this investigation.

7.0 AREAS OF POTENTIAL ENVIRONMENTAL CONCERN

The Site was assessed with forty-one (41) areas of interest based on information obtained from historical reports, interviews, and on-site visual observations. Of the forty-one (41) areas of interest assessed, 33 were retained as areas of potential environmental concerns (APECs). A summary table of the APECs and their associated contaminants of potential concern is provided below.

Table M. Areas of Potential Environmental Concern

APEC	Description of Contamination or Risk	COPC
<p>APEC 1</p> <p>Rocky Pines Car Crushing</p> <p>652042E 5560471N</p>	<p>The car crushing operation (70m x 70m) contains a large number of crushed and abandoned vehicles. Inadequate petroleum hydrocarbon storage, vehicle maintenance and repairs, and spotty soil staining was noted throughout the area.</p>	<ul style="list-style-type: none"> • Metals • PAH • PHC • VOC • Glycol
<p>APEC 2</p> <p>Lot 219 AST</p> <p>652242E 5560564N</p>	<p>One privately owned 4500L, diesel AST in good condition on wooden support structure appears active. Spotty soil staining was observed below (<10cm).</p>	<ul style="list-style-type: none"> • PAH • PHC
<p>APEC 3</p> <p>Lot 254 AST</p> <p>652282E 5560126N</p>	<p>One privately owned 2500L, diesel AST in good condition on concrete blocks appears active. Spotty soil staining was observed below (<10cm).</p>	<ul style="list-style-type: none"> • PAH • PHC
<p>APEC 4</p> <p>Lot 279 AST</p> <p>652293E 5559918N</p>	<p>One privately owned empty Diesel AST (4500L) in moderate condition. Tank is empty and not in original location (unknown). Original location needs to be verified and investigated.</p>	<ul style="list-style-type: none"> • PAH • PHC
<p>APEC 5</p> <p>Mamit Lake Road Four Mile Dump</p> <p>653572E 5560186N</p>	<p>A buried dump (80m x 15m) was observed within a fenced and gated compound east of Mamit Lake Road. The gate has been removed and some recent dumping has occurred at the gate. Contents and environmental impact of the buried materials is unknown. Two monitoring wells are installed adjacent to the buried debris.</p>	<ul style="list-style-type: none"> • Metals • PAH • PHC • VOC • Ions
<p>APEC 6</p> <p>Buried Dump 1 Mamit Lake Ranch Road South</p> <p>652666E 5558129N</p>	<p>The dump (60 m x 20m) contains buried debris. It is unknown if the one monitoring well to the southeast was installed to monitor the site or not. Recent surface debris includes electronics, appliances, building materials, furniture, paint cans, scrap metals, rubber tires, and domestic waste. Contents and environmental impact of the buried materials is unknown.</p>	<ul style="list-style-type: none"> • Metals • PAH • PHC • VOC • Ions
<p>APEC 7</p> <p>Buried Dump 2 Mamit Lake Ranch Road North</p> <p>652747E 5558858N</p>	<p>The dump (80m x 15m) contains buried debris. It is unknown if the one monitoring well to the southeast was installed to monitor the site or not. Recent surface debris includes electronics, appliances, building materials, furniture, paint cans, scrap metals, rubber tires, and domestic waste. Contents and environmental impact of the buried materials is unknown</p>	<ul style="list-style-type: none"> • Metals • PAH • PHC • VOC • Ions

APEC	Description of Contamination or Risk	COPC
APEC 8 Mamit Lake Road Target Shooting Area 654646E 5558339N	<ul style="list-style-type: none"> • Two (2) areas of target practice were observed (4 targets). • Bullet holes are visible on a stump (northern natural backstop area) and one wooden target (southern natural backstop area) • Shell casings were observed at the southernmost firing area • The area has been used for local shooting contests and is not monitored for use. 	<ul style="list-style-type: none"> • Metals • PAH
APEC 9 Lot 297 ASTs 652293E 5559918N	APEC 9A – 2x 1800L Diesel and Gas ASTs Two privately owned side by side 1800L ASTs (one diesel and one gasoline) appear in use. Tanks were empty at the time of the site visit, and no staining or odour was observed.	<ul style="list-style-type: none"> • PAH • PHC
	APEC 9B – 800L AST One privately owned AST (unknown content) is empty with no stains or odours beneath the tank. An open 20L oil pail is adjacent to the tank and staining was observed.	<ul style="list-style-type: none"> • PAH • PHC
	APEC 9C – 2000L AST One privately owned AST (unknown content) is empty and does not appear in use. No staining or odors were noted.	<ul style="list-style-type: none"> • PAH • PHC
APEC 10 Lot 294 ASTs 654604E 5557801N	2 privately owned 1600L diesel ASTs are in good condition and appear to be in use. Soil staining was observed below. Inadequate storage of petroleum hydrocarbon products was noted adjacent.	<ul style="list-style-type: none"> • Metals • PAH • PHC • VOC
APEC 11 Lot 146 Sawmill 654216E 5556808N	Privately owned diesel AST (4500L) is in new condition and in use. Petroleum hydrocarbon handling and storage at the sawmill appears in good order. Small amounts of scrap metal in the form of mill machinery are located on the northern and southern portions of the site. A heating oil tank is located at the site and its former location is unknown. Heavy equipment is maintained on site. The potential for hydrocarbon spills are a concern at the site.	<ul style="list-style-type: none"> • Metals • PAH • PHC • VOC
APEC 12 Lot 265 Mojo's Gas Station and Gravel Pit 654329E 5556808N	APEC 12A- Mojo's Gas Station It is unknown at this time if the former USTs have been removed from the Gas Station. Station building and limited amounts of metal debris remain at the site. Monitoring wells are installed in the vicinity of the former fueling island and reported UST locations. Some staining is noted around the abandoned warehouse.	<ul style="list-style-type: none"> • Metals • PAH • PHC • VOC
	APEC 12B – Peter Brothers Asphalt Plant & Gravel Pit A privately owned 31000L dual tank (gas/diesel) AST is in good condition and in use at the site. The portable asphalt plant has surficial soil staining and use of hydrocarbon products, but the area appears lined with poly approximately 30cm below surface. Production and recycling of asphalt is occurring at the site. Waste and scrap metals are noted throughout the site.	<ul style="list-style-type: none"> • Metals • PAH • PHC • VOC

APEC	Description of Contamination or Risk	COPC
APEC 13 Lot 105 Abandoned House 654503E 5556175N	The abandoned house contains mould that needs to be evaluated by a qualified mold assessor. There is the potential for asbestos in fibrous ceiling tiles, and fireplace pad. Appliances, furniture, and household debris remain within the house. There is the potential that lead based paints were used on the external portion of the building. Smaller outbuildings also contain debris.	<ul style="list-style-type: none"> • Asbestos • Pb in Paint
APEC 14 Lot 87-4 AST 654444E 5556164N	Privately owned 4500L diesel AST is partially full with soil staining (1m diameter) and odor noted below. Tank is in moderate condition, but has no secondary containment. Open 20L pail adjacent contains used radiator fluid.	<ul style="list-style-type: none"> • PAH • PHC • Glycol
APEC 15 Lot 72-1 Abandoned House 654486E 5556095N	Abandoned house contains suspected asbestos insulation materials (Xenolite).	<ul style="list-style-type: none"> • Asbestos
APEC 16 Lot 208 AST (213E) 654749E 5555735N	Privately owned 2300L diesel AST is empty and in good condition. Some weeping at the nozzle and cracks in the hose were noted. Tank is to be moved to a more permanent location and will be in use.	<ul style="list-style-type: none"> • PAH • PHC
APEC 17 Lot 208 AST (225E) 654867E 5555589N	APEC 17A – Two privately owned ASTs (1000L diesel and 1350L gasoline) are in moderate condition and do not appear in recent use. No soil staining or odour was noted below. Some petroleum hydrocarbon storage is occurring in the vicinity.	<ul style="list-style-type: none"> • PAH • PHC
	APEC 17B – One privately owned AST (2300L unknown contents) appears in good condition and does not appear in use. No soil staining or odors were noted. 2 tidy tanks were noted adjacent.	<ul style="list-style-type: none"> • PAH • PHC
APEC 18 Lot 58 AST (260E) 654855E 5555240N	Privately owned 900L diesel AST is empty and appears in moderate condition. The tank is on a treated wooden support that is rusting and has some weeping at the nozzle. A second adjacent 900L tank is empty and on its side. No staining or odors were observed below the tanks.	<ul style="list-style-type: none"> • PAH • PHC
APEC 19 Lot 58 AST (280E) 654900E 5555102N	Privately owned empty heating oil AST (300L) appears in moderate condition. Tank is rusting, and does not appear to be in use. No staining or odors were noted below the tank.	<ul style="list-style-type: none"> • PAH • PHC

APEC	Description of Contamination or Risk	COPC
APEC 20 BC Plan 215 Nicola River Dump 654202E 5554569N	A 50x80 m area of debris was observed strewn down a bedrock slope between Lindley Creek Road and Nicola River. The area is densely vegetated riparian area at the toe of slope, and is within the floodplain of the Nicola River. Debris includes numerous abandoned vehicles, appliances, domestic waste, scrap metals, furniture, building materials, and rubber tires.	<ul style="list-style-type: none"> • Metals • PAH • PHC
APEC 21 BC Plan 215 Shulus Road ASTs 654194E 5554572N	Three (3) privately owned ASTs (1350L gasoline, 2400L unknown, 1600L diesel) are in moderate condition and do not appear in use. No soil staining was observed below the tanks in the current location, but a 1m diameter soil stain was noted at the front of the storage shed.	<ul style="list-style-type: none"> • PAH • PHC
APEC 22 Lot 78-2 Johnny's Gas Station 653625E 5556100N	The gas station contains a diesel (9000L), gasoline (46,000L), and a propane ASTs with underground lines running to four pumps within one pump island. No spills were reported, and no concerns with current practices were noted. Former USTs were located in same location as current USTs. The gas station is up gradient and approximately 1km from the Nicola River. Former diesel and gasoline ASTs from this site are abandoned on Lot 183.	<ul style="list-style-type: none"> • PAH • PHC
APEC 23 Lot 81 Burnt House 653278E 5556032N	Foundation and surrounding area is littered with scattered burnt debris. Basement portion is open to 2.2m below surface grade, and contains standing water. Area is overgrown and the open basement presents a safety hazard. Adjacent shed contains debris.	<ul style="list-style-type: none"> • Metals • PAH • PHC
APEC 24 Lot 17 & 18 Residential Dump 653223E 5555894N	Buried residential dump (20m x 8m) contains metals and domestic waste, and potential unknown substances. Buried debris is on bank above seasonally wetted area within a residential development.	<ul style="list-style-type: none"> • Metals • PAH • PHC • VOC
APEC 25 Lot 86 Residential Dump 652973E 5556056N	Buried residential dump contains metals and domestic waste, and potential unknown substances. Buried debris is on bank and within seasonally wetted area and within a residential development.	<ul style="list-style-type: none"> • Metals • PAH • PHC • VOC
APEC 26 Residential Dump South of Lots 3,4, and 5 652742E 5556145N	Buried residential dump contains metals and domestic waste, and potential unknown substances. Buried debris is on bank above seasonally wetted area and Nicola River, and within a residential development.	<ul style="list-style-type: none"> • Metals • PAH • PHC • VOC

APEC	Description of Contamination or Risk	COPC
APEC 27 Lot 12 AST 652924E 5556138N	Privately owned empty AST (900L unknown contents) appears in moderate condition. Tank is rusting, and does not appear to be in use. No staining or odors were noted below the tank.	<ul style="list-style-type: none"> • PAH • PHC
APEC 28 Band Firehall Burn Pile 652535E 5556181N	Burn pile includes electronics, light ballasts, dimensional wood waste, vinyl siding, drywall, corrugated metal, car hood, paint cans, metal window frames, and fencing materials. All debris is burnt.	<ul style="list-style-type: none"> • Metals • PAH • PHC • PCB
APEC 29 Lot 197 AST 652604E 5556610N	Privately owned empty AST (900L unknown contents) appears in moderate condition. Tank appears to be in use. The property was not accessible at the time of the site visit, and as such no observations regarding soil conditions beneath the tank were made.	<ul style="list-style-type: none"> • PAH • PHC
APEC 30 LNIB School AST 652675E 5556806N	Empty AST (24000L unknown contents) appears in new condition. Tank appears to be in use. The tank is double walled, on a concrete foundation, within a fenced perimeter. No concerns with current fuel use were identified at the school.	<ul style="list-style-type: none"> • PAH • PHC
APEC 31 Lot 200 ASTs 651774E 5557470N	Three (3) privately owned ASTs (4500L unknown, 1200L gasoline, and 2300L diesel) are immediately adjacent to each other and appear in use. The tanks are in moderate condition with some rust and weeping occurring at the bungs and nozzles. The area has a hydrocarbon odor with spotty soil staining.	<ul style="list-style-type: none"> • PAH • PHC
APEC 32 Former Shulus School AST (ESSIMS 7000086497)	Fuel storage tank was removed from the school property in the 1980's. In 1999, the former location of the AST could not be confirmed during the FNESS UST/AST removal program, and soil conditions below the former AST remain unknown.	<ul style="list-style-type: none"> • PAH • PHC
APEC 33 Soil Contamination Charlotte Joe Residence (ESSIMS 7000086397)	Fuel storage tank was removed from Charlotte Joes residence during the FNESS UST/AST removal program. Contaminated soil was excavated from the property, however, the soil remains contaminated at 2.5m depth, as further excavation was prevented due to the proximity of the house foundation.	<ul style="list-style-type: none"> • PAH • PHC
Off Site APEC 34 CP Rail Right of Way 653577E 5556159N	The right of way was used to transport coal, copper ore concentrate, and had steam engine use on the rail line. Creosote rail ties were used for track foundation and the railway ballast has the potential to be fill imported from an unknown source or mine tailings. There are three right of way widening as it passes through the Site. Metals, Hydrocarbons, and PAHs are a contaminant of concern that may migrate from the right of way to the Site. No additional info to add.	<ul style="list-style-type: none"> • Metals • PAH • PHC

Seven (7) additional sites were visited based on concerns identified during the historical review, but were not retained as APECs. These sites are summarized in the table below.

Table N. Sites of Concern Not Retained as APECs

Site #	Site Name	Location	Observations
1	Rocky Pines Residential Dump East of Lots 252 & 253	Rocky Pines Residential Subdivision	Reported former residential dump down embankment behind residential development. Very limited debris was observed. Better housekeeping practices are recommended.
2	Lot 87-4 Debris	Junction of Highway 8 and Mamit Lake Road (Highway 97C)	Reported to contain residential debris. No wastes were observed at the site.
3	Lot 67 Shulus Spring	100m south of the Junction of Highway 8 and 97C.	Pump house and small wooden shed with generator were noted at the property. A cement barricade runs between the highway right of way and spring below. Impacts from road are anticipated to be low. Given use as potable water, annual monitoring is recommended to confirm water meets Health Canada drinking water quality guidelines.
4	Lot 183 Abandoned Gas Station ASTs	South of Johnny's on the Rez along CP Rail ROW	Two empty ASTs are on a concrete pad and are empty. There were no concerns identified for the current storage of the empty tanks.
5	Rail Tie Pile	South of Lot 81 Burnt house on CP Rail ROW	A small pile of treated ties was in a seasonally wetted area. Many fences along the ROW are constructed of treated rail ties. Impacts from this pile are anticipated to be low but should be removed.
6	Lot 198 Merritt Speedway	North of Highway 8 and LNIB School on Mamit Lake Ranch Road	No concerns pertaining to current site use were noted.
7	Lot 96 Spectra Energy Meter Station	North of Highway 8	Natural gas pipeline runs through Nicola Mameet IR1. Potential concerns for the LNIB were seasonal flow of water over gas lines toward Nicola River. Potential impacts are anticipated to be very low.

Two (2) locations of concern were noted 600m west of the reserve. These include the former CP Rail Ore Transfer Station, and Turtle Tracks Industrial. These sites are on private property, but are adjacent to the Nicola River, which runs through reserve Lands. Turtle Tracks Industrial is reported to have heavy machinery, with fuel/chemical handling and storage. Sulphur staining and oxidized copper ore, a burn pile, and miscellaneous metal debris was noted at the CP Rail Ore Transfer Station.

8.0 RECOMMENDATIONS

A Phase 2 ESA is recommended to determine the presence or absence of contaminated media at the APECs identified by this assessment.

9.0 REPORT USE AND LIMITATIONS

This Phase I ESA report has been prepared for the exclusive use of Indian and Northern Affairs Canada (INAC), and it is intended to provide INAC with an understanding of the potential for environmental contamination by hazardous materials at the property assessed. The scope of services performed in execution of this investigation may not be appropriate to satisfy the needs of other users, and any use or re-use of this document or the findings, conclusions, or recommendations presented herein is at the sole risk of said user. The findings and recommendations in this report are based upon data and information obtained during site visits by Columbia and INAC personnel to the Site identified herein and the condition of the Site on the dates of such visits, supplemented by information and data obtained by Columbia described herein.

The findings and recommendations contained in this report are based on the expertise and experience of Columbia in conducting similar site assessments. In assessing the Site, Columbia has also relied upon representations and information furnished by individuals noted in the report with respect to existing operations and property conditions and the historical uses of the properties to the extent that the information obtained has not been contradicted by data obtained from other sources. Accordingly, Columbia accepts no responsibility for any deficiency, misstatements or inaccuracy contained in this report as a result of misstatements, omissions, misrepresentations or fraudulent information provided by others.

It should be recognized that this study was not intended to be a definitive investigation of contamination at the Site. Given that the limited scope of services for this assessment as stated in the Terms of Reference for the Phase I ESA, it is possible that currently unrecognized contamination may exist at the Site and, if present, that the levels of contamination may vary across the Site. Opinions and recommendations presented herein apply to site conditions existing at the time of our assessment and those reasonably foreseeable. Should environmentally significant changes to the Site or additional information become available, Columbia should be provided the opportunity to review this information/data and amend our opinions, as appropriate. Fungi, mycotoxins, bioaerosols and other indoor air quality issues were not included in the scope of work.

Columbia's objective is to perform our work with care, exercising the customary thoroughness and competence of earth science, environmental, and engineering consulting professionals, in accordance with the standard for professional services at the time and location those services are rendered. It is important to recognize that even the most comprehensive scope of services may fail to detect environmental liability on a particular site. Therefore, Columbia cannot act as insurers and cannot "certify" or "underwrite" that a site is free of environmental contamination, and no expressed or implied representation or warranty is included or intended in our reports, except that our work was performed, within the limits prescribed by our client, with the customary thoroughness and competence of our profession.

10.0 PROFESSIONAL STATEMENT

The information compiled for this document has been prepared in accordance with the requirements of the INAC Scope of Work.

Columbia certifies that the persons signing this document have demonstrable experience in the assessment of commercial and industrial sites. The work has been performed by Columbia staff under the guidance and supervision of the signatories below.

Report prepared by:

COLUMBIA ENVIRONMENTAL CONSULTING LTD.

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11.0 REFERENCES

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Personal Communications

Bob Alexanruck. Division Manager. Ministry of Transportation. Merritt B.C. Regarding Diesel spill and gravel pit on Highway 5.

Dave Shlepee. Ministry of Transportation. Kamloops B.C. Requesting the salt investigation report.

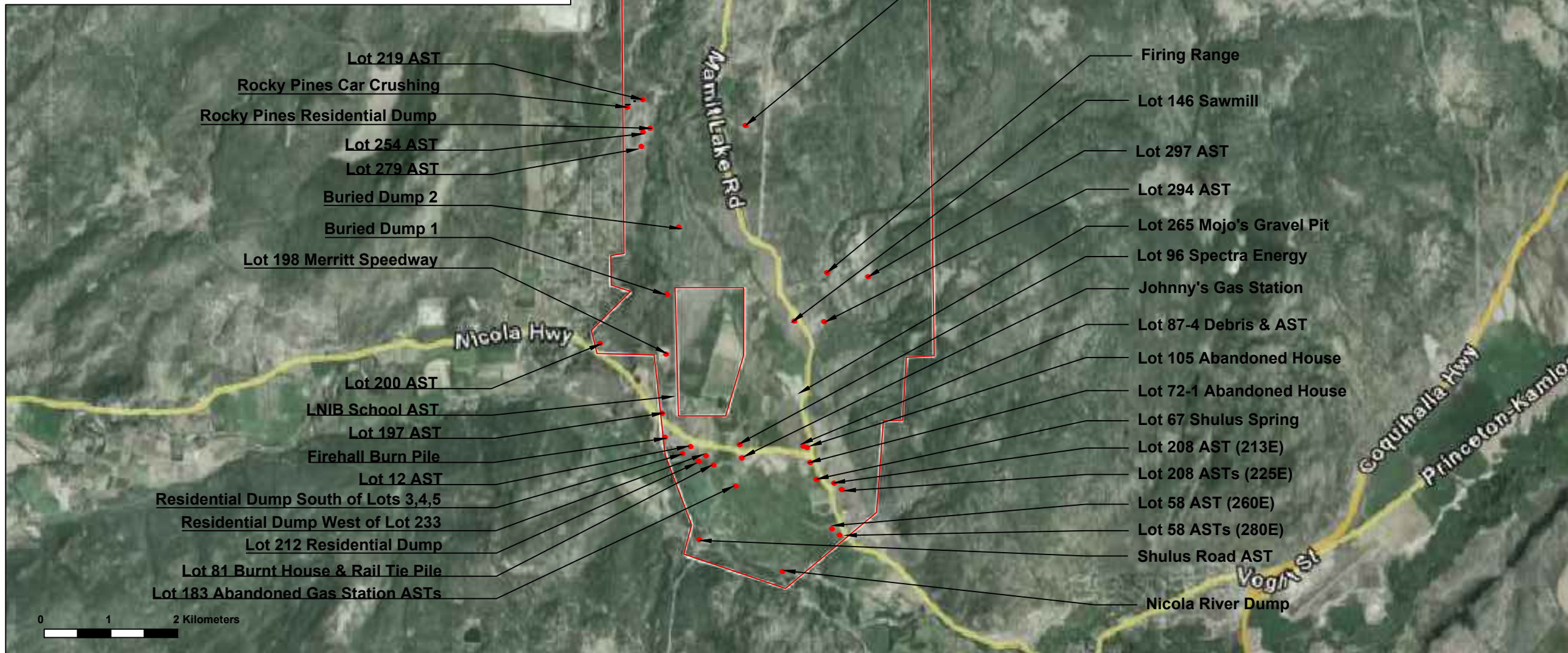
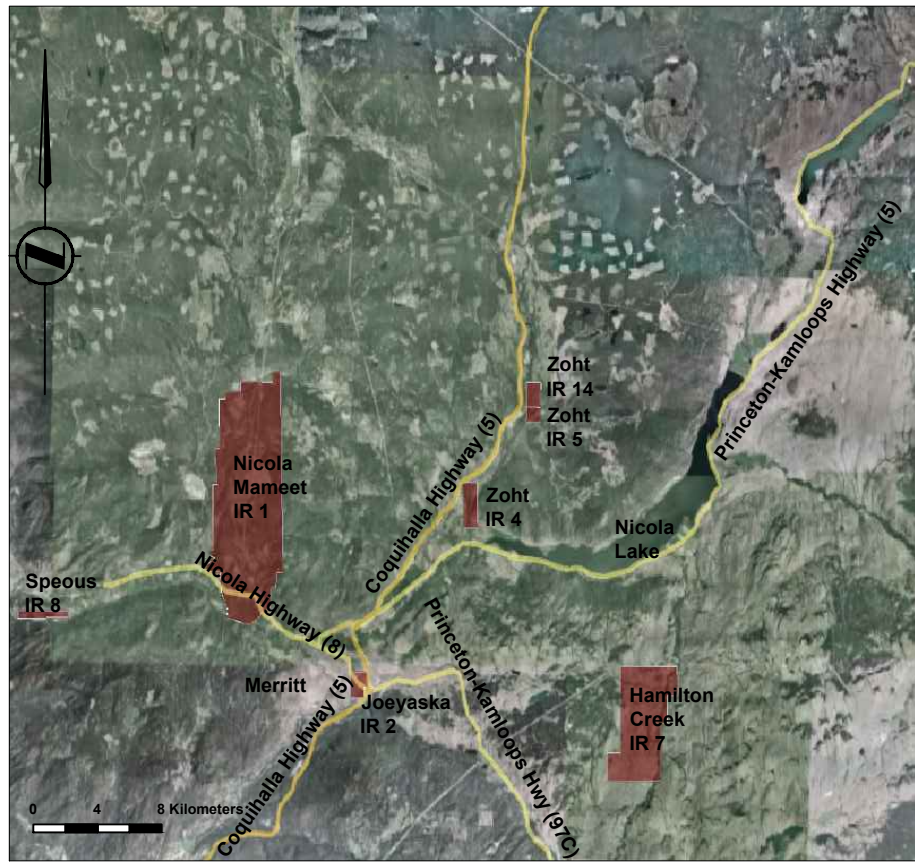
Louise Ouelett. Environmental and Transmission and Distribution Department. Fortis BC. Vancouver B.C. Regarding records and locations of transformers and service dates.

Peter Hughs. Director of Environmental Services. Thompson Nicola Regional District. Regarding Environmental Records.

Sean O'Flaherty. Development Services Officer. City of Merritt. Merritt B.C. Regarding building permits on reserve or environmental issues.

Toni Melliere. Environmental Division. Terasen Gas. Vancouver B.C. Requesting Environmental records and service dates for LNIB.

APPENDIX A
FIGURES



LEGEND

- RESERVE FOOTPRINT
- RESERVE LOT BOUNDARY

NOTES:

Airphoto taken from Google Earth, December 2010

No.	Revision/Issue	Date

COLUMBIA ENVIRONMENTAL

Figure 1
Nicola Mameet IR#1
Site Location & Plan

LNIB / INAC
Phase I
Environmental Site Assessment
Nicola Mameet IR #1

Project: 10-0374	Sheet:
Date: January, 2010	
Drawn By: SZ	Checked By: DS, DD



Agricultural Lands

Inferred Groundwater Flow Direction

Abandoned Cars & PHC Products Spotty Staining

Residential Lands

Yap Skim Drive

Stacked Crushed Vehicles

Metal Debris Pile (Car Parts)

Tire Rim Pile

Soil Staining & Open PHC Containers

Wood Waste & Tire Pile

Abandoned Vehicles, White Goods, 205L Drums, Car Parts, & Metal Debris

Tractor

LNIB IR1 LOT 232-1

Scattered Abandoned Vehicles

6 205L Drums & Vehicles Filled with Car Parts

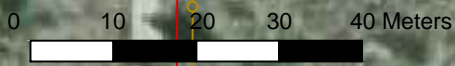
Aberdeen Road

LNIB IR1 LOT 235-1

Wildlands

Residential Lands

LNIB IR1 LOT 236



LEGEND	
	SURFACE DEBRIS
	SOIL STAINING
	FENCE
	GRAVEL ROAD
	RESERVE BOUNDARY
	SURFACE / GROUNDWATER FLOW DIRECTION

NOTES:

All elevations in metres (m)

Locations of site features were taken from:

1. Aerial photographs
2. GPS data points, and
3. Visual observations / adjustments of GPS waypoints and site features

No.	Revision/Issue	Date



Figure 2
Rocky Pines Car Crushing
West of Lot 232-1

LNIB / INAC
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Environmental Site Assessment
Nicola Mameet IR #1

Project	10-0374	Sheet
Date	January, 2011	
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		DS/DD



LEGEND	
	ABOVE GROUND TANK (AST)
	SOIL STAINING
	FENCE
	GRAVEL ROAD
	SURFACE / GROUNDWATER FLOW DIRECTION

NOTES:

All elevations in metres (m)

Locations of site features were taken from:

1. Aerial photographs
2. GPS data points, and
3. Visual observations / adjustments of GPS waypoints and site features

No.	Revision/Issue	Date








Figure 3
Nicola Mameet IR 1
Lot 219 AST

LNIB / INAC
Phase I
Environmental Site Assessment
Nicola Mameet IR #1

Project	10-0374	Sheet
Date	January, 2011	
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LEGEND

-  ABOVE GROUND TANK (AST)
-  SOIL STAINING
-  REPORTED DUMP
-  GRAVEL ROAD
-  SURFACE / GROUNDWATER FLOW DIRECTION

NOTES:

All elevations in metres (m)

Locations of site features were taken from:

1. Aerial photographs
2. GPS data points, and
3. Visual observations / adjustments of GPS waypoints and site features

No.	Revision/Issue	Date



Figure 4

Nicola Mameet IR 1
Lot 254 AST, Lot 279 AST, &
Rocky Pines Residential Dump

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Phase I
Environmental Site Assessment
Nicola Mameet IR #1

Project	10-0374	Sheet
Date	January, 2011	
Drawn By:	SZ	Checked By:
		DS/DD



LEGEND

- SURFACE DEBRIS
- BURIED WASTE
- FENCE
- GRAVEL ROAD
- HILL TOE / CREST
- SURFACE / GROUNDWATER FLOW DIRECTION
- MONITORING WELL

NOTES:

All elevations in metres (m)

Locations of site features were taken from:

1. Aerial photographs
2. GPS data points, and
3. Visual observations / adjustments of GPS waypoints and site features

No.	Revision/Issue	Date



Figure 5
Nicola Mameet IR1
Mamit Lake Road
Four Mile Dump

LNIB / INAC
Phase I
Environmental Site Assessment
Nicola Mameet IR #1

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Date January, 2011	
Drawn By: SZ	



LEGEND

- SURFACE DEBRIS
- BURIED WASTE
- FENCE
- GRAVEL ROAD
- HILL TOE / CREST
- ↙ SURFACE / GROUNDWATER FLOW DIRECTION
- ⊕ MONITORING WELL

NOTES:

All elevations in metres (m)

Locations of site features were taken from:

1. Aerial photographs
2. GPS data points, and
3. Visual observations / adjustments of GPS waypoints and site features

No.	Revision/Issue	Date



Figure 6
 Nicola Mameet IR1
 Buried Dump 1 Mamit Lake
 Ranch Road South

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 Environmental Site Assessment
 Nicola Mameet IR #1

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LEGEND	
	SURFACE DEBRIS
	BURIED WASTE
	FENCE
	GRAVEL ROAD
	HILL TOE / CREST
	SURFACE / GROUNDWATER FLOW DIRECTION
	MONITORING WELL

NOTES:

All elevations in metres (m)

Locations of site features were taken from:

1. Aerial photographs
2. GPS data points, and
3. Visual observations / adjustments of GPS waypoints and site features

No.	Revision/Issue	Date



Figure 7
 Nicola Mameet IR1
 Buried Dump 1 Mamit Lake
 Ranch Road North

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 Environmental Site Assessment
 Nicola Mameet IR #1

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LEGEND

- BACKSTOP
- FIRING AREA
- SEASONAL DRAINAGE
- GRAVEL ROAD
- HILL TOE / CREST
- ↙ SURFACE / GROUNDWATER FLOW DIRECTION

NOTES:

All elevations in metres (m)

Locations of site features were taken from:

1. Aerial photographs
2. GPS data points, and
3. Visual observations / adjustments of GPS waypoints and site features

No.	Revision/Issue	Date



Figure 8
Nicola Mameet IR1
Mamit Lake Road
Firing Range

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Phase I
Environmental Site Assessment
Nicola Mameet IR #1

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Date	January, 2011	
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LEGEND	
	ABOVE GROUND TANK (AST)
	HILL CREST
	FENCE
	GRAVEL ROAD
	SURFACE / GROUNDWATER FLOW DIRECTION

NOTES:

All elevations in metres (m)

Locations of site features were taken from:

1. Aerial photographs
2. GPS data points, and
3. Visual observations / adjustments of GPS waypoints and site features

No.	Revision/Issue	Date








Figure 9
Nicola Mameet IR 1
Lot 297 ASTs

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Environmental Site Assessment
Nicola Mameet IR #1

Project	10-0374	Sheet
Date	January, 2011	
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SZ	DS/DD	



LEGEND

-  ABOVE GROUND TANK (AST)
-  HILL CREST
-  FENCE
-  GRAVEL ROAD
-  SURFACE / GROUNDWATER FLOW DIRECTION

NOTES:

All elevations in metres (m)

Locations of site features were taken from:

1. Aerial photographs
2. GPS data points, and
3. Visual observations / adjustments of GPS waypoints and site features

No.	Revision/Issue	Date



Figure 10
Nicola Mameet IR 1
Lot 294 AST

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Nicola Mameet IR #1

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Date	January, 2011	
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LEGEND	
	SURFACE DEBRIS
	HYDROCARBON STORAGE
	AST - IN USE
	OVERHEAD POWERLINE
	FENCE
	GRAVEL ROAD
	RESERVE LOT BOUNDARY
	SURFACE / GROUNDWATER FLOW DIRECTION
	WOOD CHIP PILE
	STACKED WOOD PILE

NOTES:

All elevations in metres (m)

Locations of site features were taken from:

1. Aerial photographs
2. GPS data points, and
3. Visual observations / adjustments of GPS waypoints and site features

No.	Revision/Issue	Date



Figure 11
Nicola Mameet IR#1
Lot 146 Sawmill

LNIB / INAC
Phase I
Environmental Site Assessment
Nicola Mameet IR #1

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LEGEND	
	SURFACE DEBRIS
	SOIL STAINING
	AST
	HILL TOE / CREST
	FENCE
	GRAVEL ROAD
	OVERHEAD POWERLINE
	RESERVE LOT BOUNDARY
	SURFACE / GROUNDWATER FLOW DIRECTION
	MONITORING WELL
	HYDRANT

NOTES:
 All elevations in metres (m)
 Locations of site features were taken from:
 1. Aerial photographs
 2. GPS data points, and
 3. Visual observations / adjustments of GPS waypoints and site features

No.	Revision/Issue	Date

Figure 12
 Nicola Mameet IR#1
 Lot 265 Mojo's Gravel Pit
 LNB / INAC
 Phase I
 Environmental Site Assessment
 Nicola Mameet IR #1

Project	10-0374	Sheet
Date	January, 2010	
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LEGEND	
	ABOVE GROUND TANK (AST)
	RESERVE LOT BOUNDARY
	REPORTED DEBRIS EXTENT
	GRAVEL ROAD
	SURFACE / GROUNDWATER FLOW DIRECTION

NOTES:

All elevations in metres (m)

Locations of site features were taken from:

1. Aerial photographs
2. GPS data points, and
3. Visual observations / adjustments of GPS waypoints and site features

No.	Revision/Issue	Date



Figure 13
 Lot 105 Abandoned House,
 Lot 87-4 Debris & AST, Lot
 72-1 Abandoned House

LNIB / INAC
 Phase I
 Environmental Site Assessment
 Nicola Mameet IR #1

Project	10-0374	Sheet
Date	January, 2011	
Drawn By:	SZ	Checked By:
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LEGEND

- BUILDINGS
- HILL CREST / TOE
- SURFACE WATER
- RESERVE LOT BOUNDARY
- ↗ SURFACE / GROUNDWATER FLOW DIRECTION

NOTES:

All elevations in metres (m)

Locations of site features were taken from:

1. Aerial photographs
2. GPS data points, and
3. Visual observations / adjustments of GPS waypoints and site features

No.	Revision/Issue	Date



Figure 14
Nicola Mameet IR 1
Lot 67 Shulus Spring

LNIB / INAC
Phase I
Environmental Site Assessment
Nicola Mameet IR #1

Project	10-0374	Sheet
Date	January, 2011	
Drawn By:	Checked By:	
SZ	DS/DD	



LEGEND	
	GRAVEL ROAD
	HILL CREST / TOE
	AST
	RESERVE LOT BOUNDARY
	SURFACE / GROUNDWATER FLOW DIRECTION

NOTES:

All elevations in metres (m)

Locations of site features were taken from:

1. Aerial photographs
2. GPS data points, and
3. Visual observations / adjustments of GPS waypoints and site features

No.	Revision/Issue	Date



Figure 15
Nicola Mameet IR 1
Lot 208 ASTs (213E & 225E)

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Phase I
Environmental Site Assessment
Nicola Mameet IR #1

Project	10-0374	Sheet
Date	January, 2011	
Drawn By:	SZ	Checked By:
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LEGEND	
	GRAVEL ROAD
	FENCE
	AST
	RESERVE LOT BOUNDARY
	SURFACE / GROUNDWATER FLOW DIRECTION

NOTES:

All elevations in metres (m)

Locations of site features were taken from:

1. Aerial photographs
2. GPS data points, and
3. Visual observations / adjustments of GPS waypoints and site features

No.	Revision/Issue	Date



Figure 16
Nicola Mameet IR 1
Lot 58 ASTs (260E & 280E)

LNIB / INAC
Phase I
Environmental Site Assessment
Nicola Mameet IR #1

Project	10-0374	Sheet
Date	January, 2011	
Drawn By:	SZ	Checked By:
		DS/DD



LEGEND

- SURFACE DEBRIS
- CONCENTRATED DEBRIS
- SURFACE WATER
- - - GRAVEL ROAD
- HILL TOE / CREST
- RESERVE LOT BOUNDARY
- ↗ SURFACE / GROUNDWATER FLOW DIRECTION

NOTES:

All elevations in metres (m)

Locations of site features were taken from:

1. Aerial photographs
2. GPS data points, and
3. Visual observations / adjustments of GPS waypoints and site features

No.	Revision/Issue	Date



Figure 17
Nicola Mameet IR1
Plan BC215
Nicola River Dump

LNIB / INAC
Phase I
Environmental Site Assessment
Nicola Mameet IR #1

Project	10-0374	Sheet
Date	January, 2011	
Drawn By:	SZ	Checked By:
		DS/DD



LEGEND

- GRAVEL ROAD
- HILL CREST / TOE
- AST
- RESERVE LOT BOUNDARY
- ↗ SURFACE / GROUNDWATER FLOW DIRECTION

NOTES:

All elevations in metres (m)

Locations of site features were taken from:

1. Aerial photographs
2. GPS data points, and
3. Visual observations / adjustments of GPS waypoints and site features

No.	Revision/Issue	Date



Figure 18
Nicola Mameet IR1
Plan BC215
Shulus Road AST

LNIB / INAC
Phase I
Environmental Site Assessment
Nicola Mameet IR #1

Project	10-0374	Sheet
Date	January, 2011	
Drawn By:	SZ	
Checked By:	DS/DD	



LEGEND	
	ABOVE GROUND TANK (AST)
	RESERVE LOT BOUNDARY
	STEEL FENCE
	GRAVEL ROAD
	SURFACE / GROUNDWATER FLOW DIRECTION

NOTES:

All elevations in metres (m)

Locations of site features were taken from:

1. Aerial photographs
2. GPS data points, and
3. Visual observations / adjustments of GPS waypoints and site features

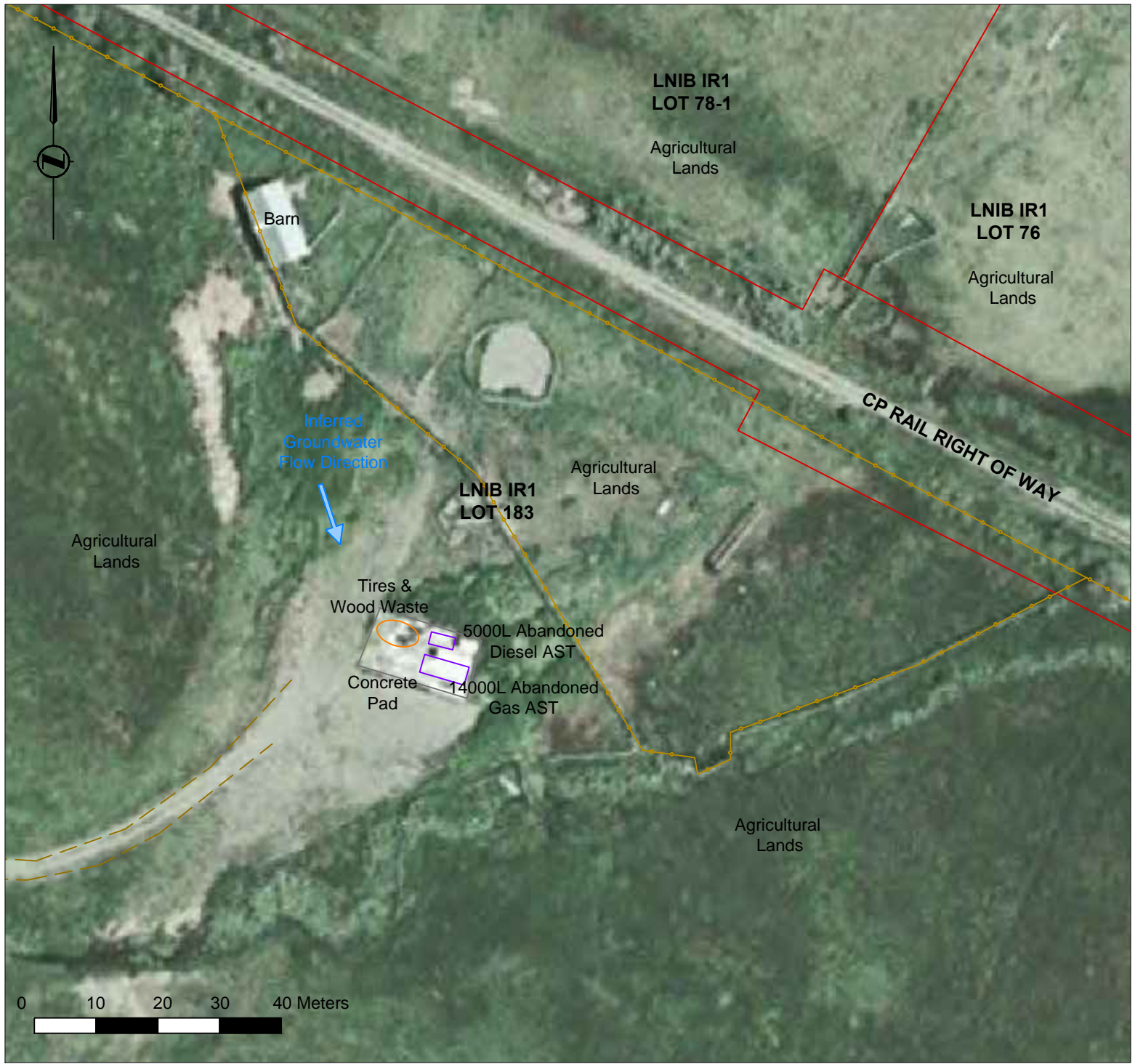
No.	Revision/Issue	Date



Figure 19
 Nicola Mameet IR #1 Lot 96
 Spectra Energy & Lot 78-1 &
 78-2 Johnny's Gas Station

LNIB / INAC
 Phase I
 Environmental Site Assessment
 Nicola Mameet IR #1

Project	10-0374	Sheet	
Date	January, 2011		
Drawn By:	SZ	Checked By:	DS/DD



LEGEND

- ABOVE GROUND TANK (AST)
- SURFACE DEBRIS
- CONCRETE PAD
- RESERVE LOT BOUNDARY
- FENCE
- GRAVEL ROAD
- ↘ SURFACE / GROUNDWATER FLOW DIRECTION

NOTES:

All elevations in metres (m)

Locations of site features were taken from:

1. Aerial photographs
2. GPS data points, and
3. Visual observations / adjustments of GPS waypoints and site features

No.	Revision/Issue	Date



Figure 20
 Nicola Mameet IR #1
 Abandoned Johnny's
 Gas Station ASTs

LNIB / INAC
 Phase I
 Environmental Site Assessment
 Nicola Mameet IR #1

Project 10-0374	Sheet
Date January, 2011	
Drawn By: SZ	Checked By: DS/DD



LEGEND	
	TREATED WOOD WASTE
	SURFACE DEBRIS
	CONCRETE PAD
	RESERVE LOT BOUNDARY
	FENCE
	GRAVEL ROAD
	SURFACE / GROUNDWATER FLOW DIRECTION

NOTES:

All elevations in metres (m)

Locations of site features were taken from:

1. Aerial photographs
2. GPS data points, and
3. Visual observations / adjustments of GPS waypoints and site features

No.	Revision/Issue	Date



Figure 21
Nicola Mameet IR #1
Lot 81 Burnt House

LNIB / INAC
Phase I
Environmental Site Assessment
Nicola Mameet IR #1

Project	10-0374	Sheet
Date	January, 2011	
Drawn By:	SZ	
Checked By:	DS/DD	



LEGEND

- SURFACE WATER
- SURFACE DEBRIS
- RESERVE LOT BOUNDARY
- FENCE
- GRAVEL ROAD
- ↘ SURFACE / GROUNDWATER FLOW DIRECTION

NOTES:

All elevations in metres (m)

Locations of site features were taken from:

1. Aerial photographs
2. GPS data points, and
3. Visual observations / adjustments of GPS waypoints and site features

No.	Revision/Issue	Date



Figure 22
 Nicola Mameet IR #1
 Lot 17, 18, & 86
 Residential Dumps

LNIB / INAC
 Phase I
 Environmental Site Assessment
 Nicola Mameet IR #1

Project 10-0374	Sheet
Date January, 2011	
Drawn By: SZ	Checked By: DS/DD



LEGEND

- SURFACE WATER
- SURFACE DEBRIS
- AST - NOT IN USE
- RESERVE LOT BOUNDARY
- FENCE
- GRAVEL ROAD
- ↘ SURFACE / GROUNDWATER FLOW DIRECTION

NOTES:

All elevations in metres (m)

Locations of site features were taken from:

1. Aerial photographs
2. GPS data points, and
3. Visual observations / adjustments of GPS waypoints and site features

No.	Revision/Issue	Date



Figure 23
 Nicola Mameet IR #1
 Lot 12 AST &
 Lot 86 Residential Dump

LNIB / INAC
 Phase I
 Environmental Site Assessment
 Nicola Mameet IR #1

Project	10-0374	Sheet
Date	January, 2011	
Drawn By:	SZ	Checked By:
		DS/DD



LEGEND	
	SURFACE DEBRIS
	RESERVE LOT BOUNDARY
	SURFACE WATER
	GRAVEL ROAD
	SURFACE / GROUNDWATER FLOW DIRECTION

NOTES:

All elevations in metres (m)

Locations of site features were taken from:

1. Aerial photographs
2. GPS data points, and
3. Visual observations / adjustments of GPS waypoints and site features

No.	Revision/Issue	Date



Figure 24
 Nicola Mameet IR #1
 Residential Dump
 South of Lots 3, 4, & 5

LNIB / INAC
 Phase I
 Environmental Site Assessment
 Nicola Mameet IR #1

Project	10-0374	Sheet
Date	January, 2011	
Drawn By:	SZ	
Checked By:	DS/DD	



LEGEND

- SURFACE DEBRIS
- RESERVE LOT BOUNDARY
- SURFACE WATER
- - - GRAVEL ROAD
- ↘ SURFACE / GROUNDWATER FLOW DIRECTION

NOTES:

All elevations in metres (m)

Locations of site features were taken from:

1. Aerial photographs
2. GPS data points, and
3. Visual observations / adjustments of GPS waypoints and site features
4. NrCAN Lot Boundaries

No.	Revision/Issue	Date



Figure 25
Nicola Mameet IR #1
Band Firehall Burn Pile
(Off Reserve)

LNIB / INAC
Phase I
Environmental Site Assessment
Nicola Mameet IR #1

Project 10-0374	Sheet
Date January, 2011	
Drawn By: SZ	Checked By: DS/DD



LEGEND

- AST
- RESERVE LOT BOUNDARY
- FENCE
- GRAVEL ROAD
- ↗ SURFACE / GROUNDWATER FLOW DIRECTION

NOTES:

All elevations in metres (m)

Locations of site features were taken from:

1. Aerial photographs
2. GPS data points, and
3. Visual observations / adjustments of GPS waypoints and site features
4. NrCAN Lot Boundaries

No.	Revision/Issue	Date









Figure 26
Nicola Mameet IR #1
Lot 197 AST

LNIB / INAC
Phase I
Environmental Site Assessment
Nicola Mameet IR #1

Project	10-0374	Sheet
Date	January, 2011	
Drawn By:	SZ	Checked By:
		DS/DD



LEGEND

-  AST
-  CONCRETE PAD
-  RESERVE LOT BOUNDARY
-  FENCE
-  GRAVEL ROAD
-  SURFACE / GROUNDWATER FLOW DIRECTION

NOTES:

- All elevations in metres (m)
- Locations of site features were taken from:
1. Aerial photographs
 2. GPS data points, and
 3. Visual observations / adjustments of GPS waypoints and site features

No.	Revision/Issue	Date



Figure 27
Nicola Mameet IR #1
LNIB School AST

LNIB / INAC
Phase I
Environmental Site Assessment
Nicola Mameet IR #1

Project	10-0374	Sheet
Date	January, 2011	
Drawn By:	SZ	
Checked By:	DS/DD	



LEGEND

- SURFACE DEBRIS
- RESERVE LOT BOUNDARY
- - - FENCE
- - - GRAVEL ROAD
- ↙ SURFACE / GROUNDWATER FLOW DIRECTION

NOTES:

All elevations in metres (m)

Locations of site features were taken from:

1. Aerial photographs
2. GPS data points, and
3. Visual observations / adjustments of GPS waypoints and site features

No.	Revision/Issue	Date



Figure 28
Nicola Mameet IR #1
Lot 198 Merritt Speedway

LNIB / INAC
Phase I
Environmental Site Assessment
Nicola Mameet IR #1

Project	10-0374	Sheet
Date	January, 2011	
Drawn By:	SZ	Checked By:
		DS/DD



LEGEND

- AST
- RESERVE LOT BOUNDARY
- FENCE
- GRAVEL ROAD
- ↗ SURFACE / GROUNDWATER FLOW DIRECTION

NOTES:

All elevations in metres (m)

Locations of site features were taken from:

1. Aerial photographs
2. GPS data points, and
3. Visual observations / adjustments of GPS waypoints and site features

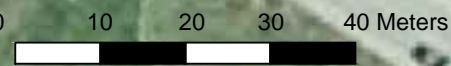
No.	Revision/Issue	Date



Figure 29
Nicola Mameet IR #1
Lot 200 ASTs

LNIB / INAC
Phase I
Environmental Site Assessment
Nicola Mameet IR #1

Project 10-0374	Sheet
Date January, 2011	
Drawn By: SZ	Checked By: DS/DD



APPENDIX B

PHOTOGRAPHIC DOCUMENTATION



Photo 1. View Rocky Pines Car Crushing facing north. Note abandoned vehicles and stack of crushed cars on the right (facing south).



Photo 2. View of open oil containers and soil staining at the Rocky Pines Car Crushing facing southwest.



Photo 3. View of the Lot 219 AST facing northwest.



Photo 4. View Rocky Pines residential dump facing east. Note the limited waste materials.



Photo 5. View of the Lot 254 AST facing east. Note the lack of secondary containment, and good tank condition.



Photo 6. View of the empty Lot 279 AST facing northeast. AST is not in original fueling location with a slight rusting and peeling on tank.



Photo 7. View of the buried Mamit Lake Road Four Mile Dump facing southwest. Note the recently dumped debris.

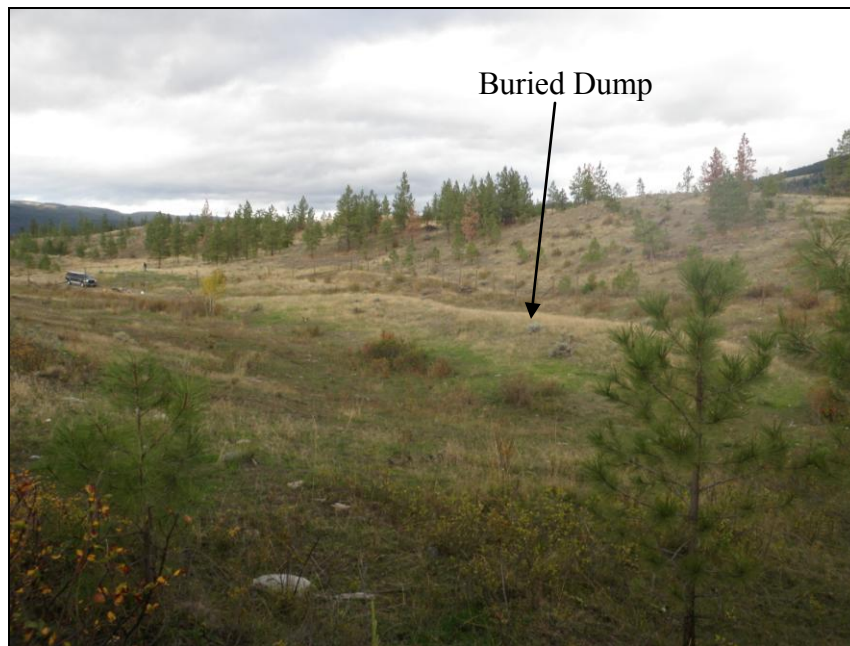


Photo 8. View of the buried Four Mile Dump debris facing northwest. Note the elongated feature in the center of the photo is the buried dump extent.



Photo 9. View of the Buried Dump #1 Mamit Lake Ranch Road South facing west. Note the recent surface debris dumped on the buried wastes.



Photo 10. View of Buried Dump #1 facing east. Note the bank covers the buried debris, and limited scattered surface waste has rolled down the bank.



Photo 11. View of Buried Dump #2 Mamit Lake Ranch Road North facing north. Note the recent dumping of domestic waste. The disturbed area is the reported extent of buried materials.



Photo 12. View of building material pile at Buried Dump #2.



Photo 13. View of the North Firing Range backstop area located east of Mamit Lake Road facing northwest.



Photo 14. View of the South Firing Range backstop area located east of Mamit Lake Road facing north.



Photo 15. View of the Lot 297 ASTs facing northeast. Note the two 1800L ASTs (Diesel and Gas) on the left, the rusted 800L tank (unknown), and the red empty tidy tank.



Photo 16. View of the empty 2000L red AST at Lot 297, and the adjacent septic tank facing north.



Photo 17. View of the two diesel ASTs located on Lot 294 facing northeast. Tanks appear in good working condition with some weeping at the bungs and fill pipes. Note the adjacent hydrocarbon product storage, and staining below tanks.



Photo 18. Overview of the Lot 146 Sawmill facing southeast. Note the chipper, conveyor belts, heavy duty equipment, and sawdust piles. Mill building is located on the left.



Photo 19. Overview of the sawmill de-barker (left) and conveyor to chipper facing northeast. Note the weigh scales and night watchman residence on the left, and the lunchroom on the right.



Photo 20. View of Lot 146 Sawmill ASTs (Diesel on left, propane on right) facing northeast. Note the concrete pad, and position next to lunchroom.



Photo 21. View of chemical storage in steel storage containers at the Sawmill. Note that all chemicals are in sealed in well organized labeled containers.



Photo 22. View of the inoperable sawmill, and limited petroleum product storage within the covered building. Note the concrete pad below.



Photo 23. Overview of the abandoned Mojos Gas Station Building on Lot 265 facing southwest. Note the sump below the treated wood at the front of the building, and remaining concrete pad.



Photo 24. View of the portable asphalt plant at Mojo's Gravel Pit facing north. Note the 205L drums and 20L plastic pails and staining of soil beneath the machine. Stained area is lined with poly 30cm below the surface.



Photo 25. View of the asphalt silo, holding tanks, and office within the portable asphalt plant at Mojo's Gravel Pit facing north.



Photo 26. View of Lot 265 Mojos Gravel Pit Diesel AST facing west. Note the staining on the concrete pad.



Photo 27. View of the warehouse within the gravel pit facing south. Debris and the storage of automotive lubricants and oil are found outside the warehouse.



Photo 28. Overview of the Lot 265 Mojo's Gravel Pit property facing southeast. Note the abandoned AST on the left.



Photo 29. View of the Abandoned House on Lot 105 facing northeast.



Photo 30. View of the interior of the Lot 105 Abandoned House showing mold on walls, and remaining household materials inside.



Photo 31. View of the Lot 87-4 debris area. Note the lack of debris at the Site.



Photo 32. View Lot 87-4 AST facing north. Note small stain in soil below tank, and open 20L pail containing radiator fluid below tank supports.



Photo 33. View the Lot 72-1 Abandoned House facing south. House reportedly contains xenolite (asbestos) insulation.

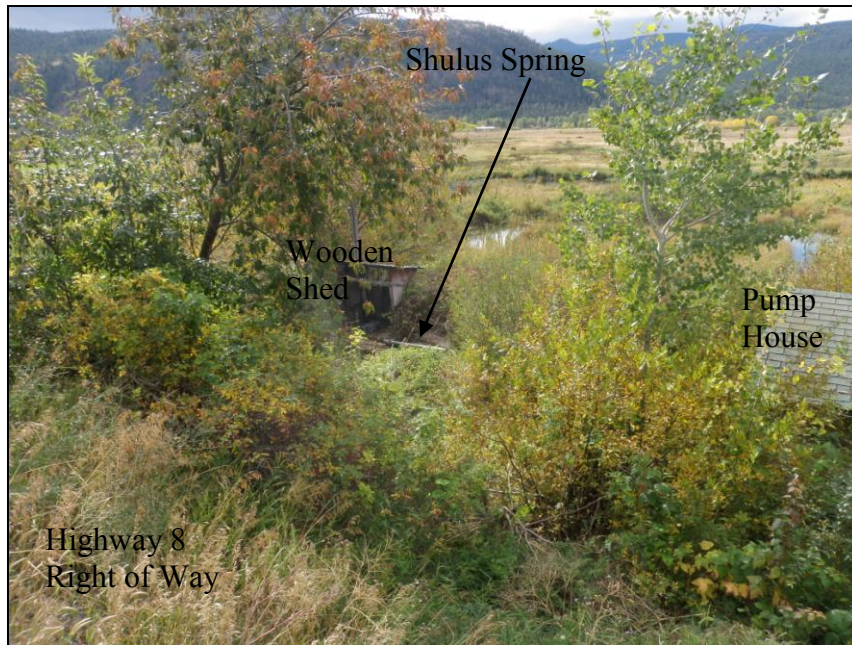


Photo 34. View of Lot 67 Shulus Spring and pump house facing southwest. Note the proximity to the highway right of way.



Photo 35. View of Lot 208 AST (213E) on Highway 8 facing northeast. Note that tank is likely to be moved to a more permanent location near the residence to the east.



Photo 36. View of Lot 208 ASTs (225E) located on Highway 8, facing east. Note the Diesel and Gas AST against the collapsing building, and the unknown AST on a wood pallet in the field.



Photo 37. View of the Lot 58 AST (260E) on Highway 8 facing north. Note the treated wood supports, and second empty tank abandoned in the grass to the right.



Photo 38. View of Lot 58 AST (280E) on Highway 8 at facing southeast. Note the lack of secondary containment, and no staining or odors.



Photo 39. Overview of BC Plan 215 Nicola River Dump facing north. Note the debris scattered down the steep talus slope and close proximity to the Nicola River.



Photo 40. View of typical debris within the BC Plan 215 Nicola River Dump. Note the building materials, metals, wood waste, domestic waste, furniture and white goods and dense vegetation throughout the area.



Photo 41. View of two automobiles within Nicola River Dump facing northeast. Note the proximity to the river and debris scattered within the talus slope.



Photo 42. View of the BC Plan 215 Shulus Road ASTs facing east.



Photo 43. View of the Lot 96 Spectra Energy Power Station located off reserve facing northwest. Note the three meter station buildings, and pesticide use notice on the fence at left.



Photo 44. View of the Lot 78-2 “Johnnys on the Rez” gas station facing southeast. Note the pump island, store, propane, diesel and gas ASTs, and paved parking lot.



Photo 45. View Lot 78-2 “Johnnys on the Rez” gas station ASTs facing south. Note the two ASTs (Diesel at left, Gas at right) are on concrete pad within fenced compound. Note minor diesel staining on concrete below nozzle.



Photo 46. View of Lot 78-2 heavy equipment storage area adjacent to “Jonny’s on the Rez” Gas Station facing southwest.



Photo 47. View of the Lot 183 Abandoned Gas Station ASTs facing east. Note the ASTs are empty and abandoned on a concrete pad south of the “Johnny’s on the Rez” Gas Station.



Photo 48. View of the Lot 81 Burnt House concrete foundation facing west. Note the burnt debris and standing water within the basement (shown on right), and the wooden shed to the west.

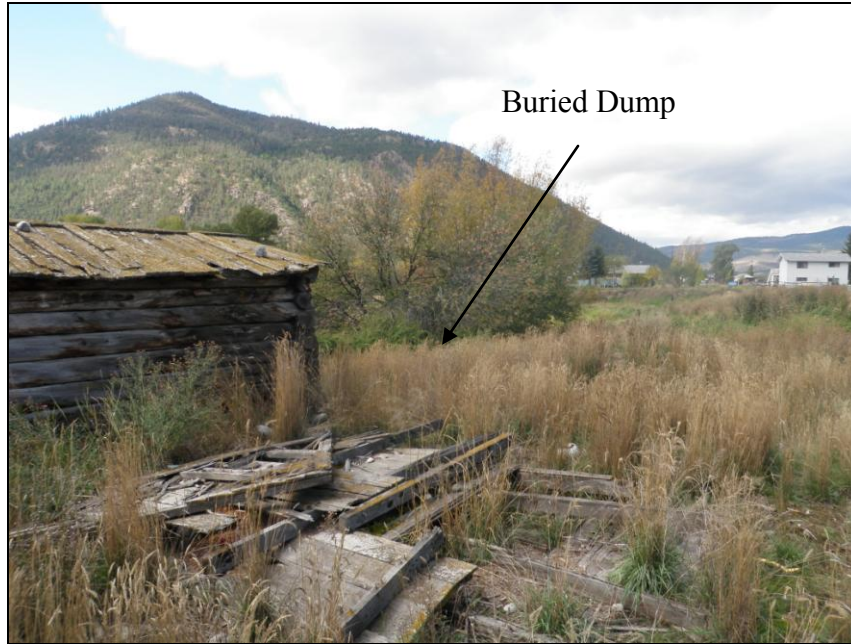


Photo 49. View of Lot 17 & 18 Residential Dump facing west. Note the log cabin and wood waste, and buried dump location west of the cabin.



Photo 50. View of Lot 86 Residential Dump facing west. Note the buried car within the wetland and surface metals along the bank. Wetland is connected to the Nicola River.



Photo 51. View of the Lot 12 AST facing east. The rusted tank and appears empty and without secondary containment.



Photo 52. View of Residential Dump South of Lot 3, 4 and 5 facing west. Note that the dump is buried along the bank, a seasonally wetted area is below, and connected to the adjacent Nicola River.



Photo 53. View of the LNIB Fire hall Burn Pile facing south. Note the burnt electronics, corrugated pipe, paint cans and light ballasts.



Photo 54. View of the Lot 197 AST located at 2196 Highway 8 facing west.



Photo 55. View of the LNIB School AST facing southeast. Note the concrete pad with the fenced compound.



Photo 56. View of the Lot 198 Merritt Speedway facing southeast.



Photo 57. View of the Lot 200 ASTs on Fyall Road facing southeast. Note the lack of secondary containment and the moderate tank condition.



Photo 58. Overview of the former CP Ore Transfer Station (on right facing west) located west of the reserve showing the burn pile, surface debris, and sulphur staining. Overview of the Turtle Tracks Industrial facing northeast, showing heavy equipment storage and fuel and chemical handling and storage.

APPENDIX C

BC ONLINE SITE REGISTRY SEARCH RESULTS

Man

Site Registry

Nil Search

For: [PA95213] [COLUMBIA ENVIRONMENTAL CONSULTING LTD]

Jan 04, 2011

As Of: JAN 02, 2011

Check for Prints

04:13:52 PM

Main Menu	Return			Print	Help?
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Folio:

Area Nil Search

As of JAN 02, 2011, no records from Site Registry fall within 5.0 kilometers of coordinates
 Latitude 50 degrees, 13 minutes, 15.3 seconds, and
 Longitude 120 degrees, 50 minutes, 20.1 seconds.

You have been charged for this information.

Sites may be revealed by searching with alternate search methods. For example, a site not revealed in an Area search may be revealed by searching with another piece of information such as PID, PIN, Address or Crown Lands File Number.

South mameet

As Of: JAN 02, 2011

BC Online: Site Registry

11/01/04

For: PA95213 COLUMBIA ENVIRONMENTAL CONSULTING L 15:27:27

Folio:

Page 1

4 records selected for 5.0 km from latitude 50 deg, 09 min, 46 sec
and Longitude 120 deg, 50 min, 26 sec

Site Id	Lastupd	Address / City
0001624	02JAN31	HIGHWAY 8 LOWER NICOLA
0001628	01APR12	372 HIGHWAY 8 LOWER NICOLA
0004025	01JUL27	2840 VOGHT STREET MERRITT
0011665		2208 COYLE ROAD LOWER NICOLA

→ off reserve 400m.

Turtle tracking

As of: JAN 02, 2011

BC Online: Site Registry

11-01-04

For: PA95213 COLUMBIA ENVIRONMENTAL CONSULTING

15:41:31

Folio:

Page 1

Detail Report

SITE LOCATION

Site ID: 1624

Latitude: 50d 09m 05.2s

Victoria File:

Longitude: 120d 53m 00.6s

Regional File: 26250-20/1624

Region: KAMLOOPS, SOUTHERN INTERIOR

Site Address: HIGHWAY 8

City: LOWER NICOLA

Prov/State: BC

Postal Code: V0K 1Y0

Registered: APR 01, 1998 Updated: JAN 31, 2002 Detail Removed: JAN 30, 2002

Notations: 1 Participants: 4 Associated Sites: 0
Documents: 0 Susp. Land Use: 1 Parcel Descriptions: 1

Location Description: LAT/LONG DERIVED BY BC ENVIRONMENT USING DGPS, ROVER
FILE K012919C.

Record Status: INACTIVE - REMEDIATION COMPLETE
Fee category: UNRANKED

=====
NOTATIONS

Notation Type: LETTER OF COMFORT ISSUED
Notation Class: ADMINISTRATIVE
Initiated: JUL 22, 1992

Approved: JUL 22, 1992

Ministry Contact: LAVIOLETTE, COLLEEN M.

Notation Participants
KUIPER, DANIEL G.

Notation Roles
REQUESTED BY

=====
SITE PARTICIPANTS

Participant: BEVAN, DAVID R.
Role(s): FORMER OPERATOR
FORMER PROPERTY OWNER
Start Date: SEP 14, 1981

End Date: JUL 14, 1993

Participant: KUIPER, DANIEL G.
Role(s): OPERATOR
PROPERTY OWNER
Start Date: JUL 14, 1993

End Date:

Participant: LAVIOLETTE, COLLEEN M.
Role(s): MAIN MINISTRY CONTACT
Start Date: JUN 01, 1992

End Date: JUL 20, 1997

Participant: ZENON ENVIRONMENTAL INC (BURNABY)
Role(s): ANALYTICAL LAB
Start Date: JUL 09, 1992

End Date:

As of: JAN 02, 2011 BC Online: Site Registry 11-01-04
For: PA95213 COLUMBIA ENVIRONMENTAL CONSULTING 15:41:31
Folio: Page 2

=====

Description: PETRO. PROD., /PRODUCE WATER STRG ABVEGRND/UNDERGRND TANK
Notes: =====

PARCEL DESCRIPTIONS

Date Added: DEC 23, 1997 Crown Land PIN#:
LTO PID#: 003470202 Crown Land File#:
Land Desc: LOT 1 DISTRICT LOT 153 KAMLOOPS DIVISION YALE DISTRICT PLAN
32403

No activities were reported for this site

End of Detail Report

Site Registry

Detail Report

For: [PA95213] [COLUMBIA ENVIRONMENTAL CONSULTING LTD]

Jan 04, 2011

As Of: JAN 02, 2011

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SITE LOCATION

Site ID: 11665

Latitude: 50d 08m 32.8s

Victoria File: 26250=20/11665

Longitude: 120d 52m 26.9s

Regional File:

Region: KAMLOOPS, SOUTHERN INTERIOR

Site Address: 2208 COYLE ROAD

City: LOWER NICOLA

Prov/State: BC

Postal Code: V0K 1Y0

Registered: JUN 25, 2009 Updated:

Detail Removed:

Notations: 4 Participants: 2 Associated Sites: 0

Documents: 0 Susp. Land Use: 1 Parcel Descriptions: 1

Location Description: SITE CREATED BY SITE PROFILE, ENTERED 2009-06-24

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Jan 04, 2011

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[Main Menu](#)
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Folio:

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Record Status: INACTIVE - NO FURTHER ACTION

Fee category: UNRANKED

=====

NOTATIONS

Notation Type: SITE PROFILE - NO FURTHER INVESTIGATION REQUIRED BY THE
MINISTRY

Notation Class: WASTE MANAGEMENT ACT: CONTAMINATED SITES NOTATIONS

Initiated: JUN 24, 2009

Approved:

Ministry Contact: WARD, JOHN E H

Notation Type: SITE PROFILE REVIEWED - NO FURTHER INVESTIGATION REQUIRED BY
THE MINISTRY

Notation Class: ENVIRONMENTAL MANAGEMENT ACT: GENERAL

Initiated: JUN 24, 2009

Approved:

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[Main Menu](#)

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[Profile History](#)

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[Page Forward](#)

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NOTATIONS

Ministry Contact: WARD, JOHN E H

Notation Type: SITE PROFILE RECEIVED

Notation Class: WASTE MANAGEMENT ACT: CONTAMINATED SITES NOTATIONS

Initiated: JUN 23, 2009

Approved:

Ministry Contact: WARD, JOHN E H

Notation Participants

FLETT, BURMAN A

FLETT, BURMAN A

Notation Roles

SITE PROFILE SUBMITTED

BY

SITE PROFILE SUBMITTED

BY

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Jan 04, 2011

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[Main Menu](#)

[Return](#)

[Profile History](#)

[Page Back](#)

[Page Forward](#)

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NOTATIONS

Notation Type: SITE PROFILE RECEIVED

Notation Class: ENVIRONMENTAL MANAGEMENT ACT: GENERAL

Initiated: JUN 23, 2009

Approved:

Ministry Contact: WARD, JOHN E H

Notation Participants

FLETT, BURMAN A

FLETT, BURMAN A

Notation Roles

SITE PROFILE SUBMITTED

BY

SITE PROFILE SUBMITTED

BY

=====

SITE PARTICIPANTS

Participant: FLETT, BURMAN A

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[Main Menu](#)
[Return](#)
[Profile History](#)
[Page Back](#)
[Page Forward](#)
[Help ?](#)

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SITE PARTICIPANTS

Roles(s): PROPERTY OWNER
 SITE PROFILE COMPLETOR
 SITE PROFILE CONTACT

Start Date: JUN 23, 2009

End Date:

Participant: WARD, JOHN E H

Roles(s): MAIN MINISTRY CONTACT

Start Date: JUN 23, 2009

End Date:

SUSPECTED LAND USE

Description: TRUCK, RAIL OR MARINE BULK FREIGHT HANDLING

Notes: INSERTED FOR SITE PROFILE DATED 2009-06-05 (described on Site Profile dated 09-06-05)

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[Main Menu](#)

[Return](#)

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[Page Back](#)

[Page Forward](#)

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PARCEL DESCRIPTIONS

Date Added: JUN 05, 2009

Crown Land PIN#:

LTO PID#: 001762583

Crown Land File#:

Land Desc: LOT 2 DISTRICT LOT 131 KAMLOOPS DIVISION YALE DISTRICT PLAN
11559

=====

CURRENT SITE PROFILE INFORMATION (Sec. III to X)

Site Profile Completion Date: JUN 05, 2009

Local Authority

Received: JUN 18, 2009

Ministry Regional Manager Received:

Decision: JUN 24, 2009

Decision: INVESTIGATION NOT REQUIRED

Site Registrar

Received: JUN 23, 2009

Entry Date: JUN 24, 2009

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Site Registry

Detail Report

For: [PA95213] [COLUMBIA ENVIRONMENTAL CONSULTING LTD]

Jan 04, 2011

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III COMMERCIAL AND INDUSTRIAL PURPOSES OR ACTIVITIES ON SITE

Schedule 2

Reference	Description
G7	TRUCK, RAIL OR MARINE BULK FREIGHT HANDLING

AREAS OF POTENTIAL CONCERN

- Petroleum, solvent or other polluting substance spills to the environment greater than 100 litres?.....NO
- Residue left after removal of piled materials such as chemicals, coal, ore, smelter slag, air quality control system baghouse dust?.....NO
- Discarded barrels, drums or tanks?.....NO
- Contamination resulting from migration of substances from other properties?.....NO

FILL MATERIALS

Fill dirt, soil, gravel, sand or like materials from a contaminated site or from a source used for any of the activities listed under Schedule

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[Main Menu](#)

[Return](#)

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[Page Back](#)

[Page Forward](#)

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2?.....NO
 Discarded or waste granular materials such as sand blasting grit, asphalt paving or roofing material, spent foundry casting sands, mine ore, waste rock or float?.....NO
 Dredged sediments, or sediments and debris materials originating from locations adjacent to foreshore industrial activities, or municipal sanitary or stormwater discharges?.....NO

WASTE DISPOSAL (QUESTIONS AS OF JANUARY 1 2009)

Materials such as household garbage, mixed municipal refuse, or demolition debris?.....NO
 Waste or byproducts such as tank bottoms, residues, sludge, or flocculation precipitates from industrial processes or wastewater treatment?.....NO
 Waste products from smelting or mining activities, such as smelter slag, mine tailings, or cull materials from coal processing?.....NO
 Waste products from natural gas and oil well drilling activities, such as

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[Main Menu](#)

[Return](#)

[Profile History](#)

[Page Back](#)

[Page Forward](#)

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drilling fluids and muds?.....NO

Waste products from photographic developing or finishing laboratories;
 asphalt tar manufacturing; boilers, incinerators or other thermal
 facilities (eg. ash); appliance, small equipment or engine repair or
 salvage; dry cleaning operations (eg. solvents); for from the cleaning
 or repair of parts of boats, ships, barges, automobiles or trucks,
 including sandblasting grit or paint scrapings?.....NO

TANKS OR CONTAINERS USED OR STORED, OTHER THAN TANKS USED FOR RESIDENTIAL
 HEATING FUEL

Underground fuel or chemical storage tanks other than storage tanks for
 compressed gases?.....NO

Above ground fuel or chemical storage tanks other than storage tanks for
 compressed gases?.....NO

HAZARDOUS WASTES OR HAZARDOUS SUBSTANCES

PCB-containing electrical transformers or capacitors either at grade,

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attached above ground to poles, located within buildings, or stored?....NO

Waste asbestos or asbestos containing materials such as pipe wrapping,
blown-in insulation or panelling buried?.....NO

Paints, solvents, mineral spirits or waste pest control products or pest
control product containers stored in volumes greater than 205 litres?...NO

LEGAL OR REGULATORY ACTIONS OR CONSTRAINTS

Government orders or other notifications pertaining to environmental
conditions or quality of soil, water, groundwater or other
environmental media?.....NO

Liens to recover costs, restrictive covenants on land use, or other
charges or encumbrances, stemming from contaminants or wastes remaining
onsite or from other environmental conditions?.....NO

Government notifications relating to past or recurring environmental
violations at the site or any facility located on the site?.....NO

X ADDITIONAL COMMENTS AND EXPLANATIONS

Click for more...

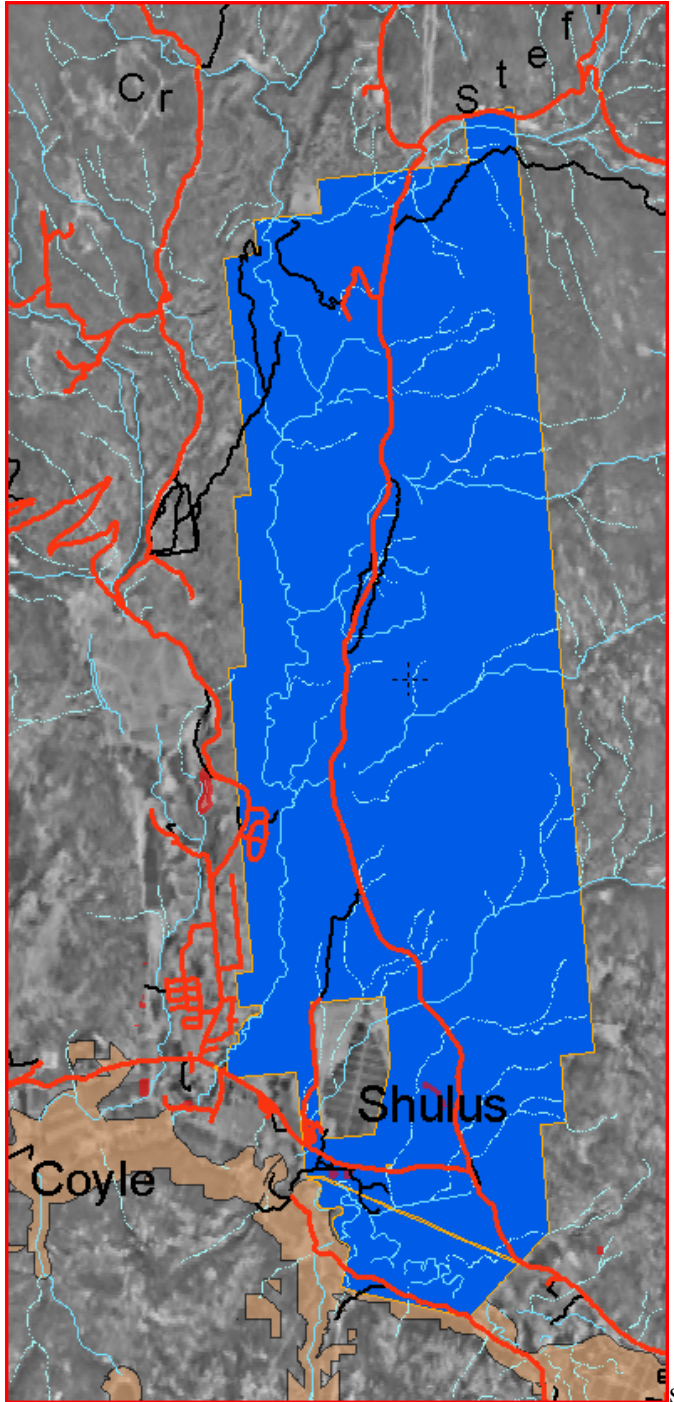
APPENDIX D
CORRESPONDANCE

Below are screenshots for each area and the information about sites (if any) and AOA potential. If you have any questions, please let me know.

Regards,

Diana

Nicola Mameet IR#1 (Center 654066.16 5561953.37) 12 archaeological sites (3 inside IR boundary, 9 outside but nearby), no AOA potential data for this area:



Hi Carmen here is the info you requested last Friday I hope this helps with your assessment. The information is from 2005-2010.

2005	88 total calls 18 on the reserve land and 8 of those were grass and debris fires
2006	97 total calls 26 on the reserve land and 2 were structural 2 natural gas leaks and 8 grass/debris fires
2007	66 total calls 14 on the reserve land and 4 were structural and 2 grass/debris fires
2008	97 total calls 31 on the reserve land and 1 car fire 8grass/debris and 1 natural gas leak
2009	145 total calls 21 on the reserve land 2grass/debris and 7 chip piles (industrial type)
2010	130 total calls 31 on the reserve land 2 natural gas leaks 6 chip piles (industrial type) and 7 grass/debris

The remaining on the reserve would be medical type calls.

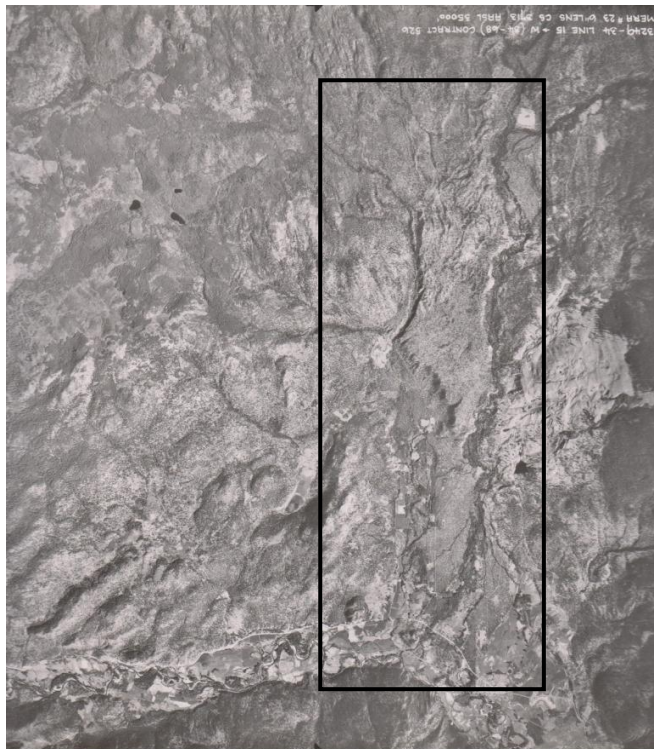
Thanks, Lindsay Tighe

Fire Chief L.N.I.B

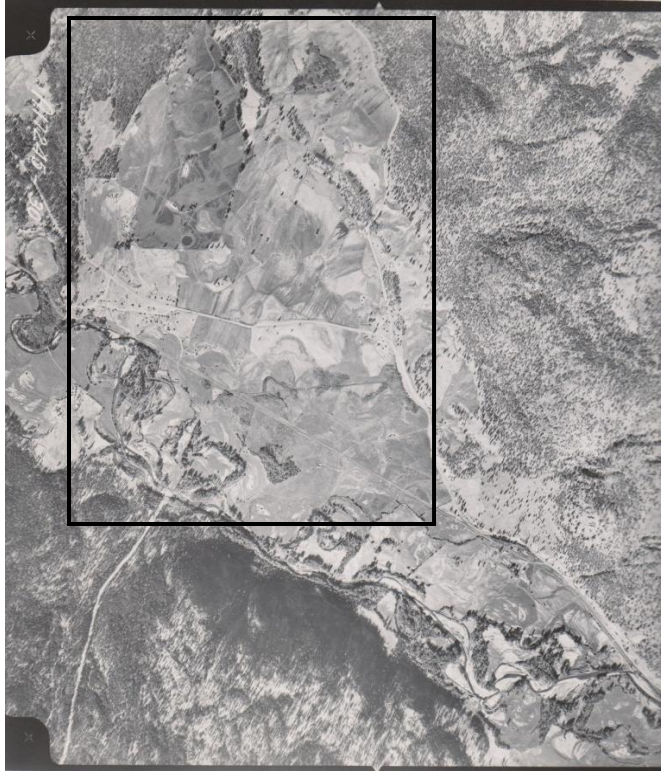
APPENDIX E
AERIAL PHOTOGRAPHS



Photograph 1. 1948 Aerial Photograph BC 613_2 001



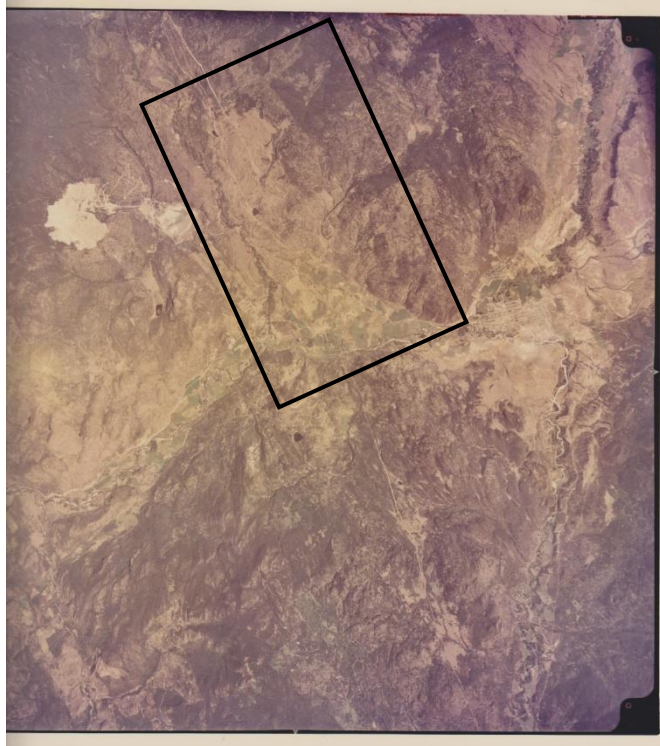
Photograph 2. 1951 Aerial Photograph A13249-34 001



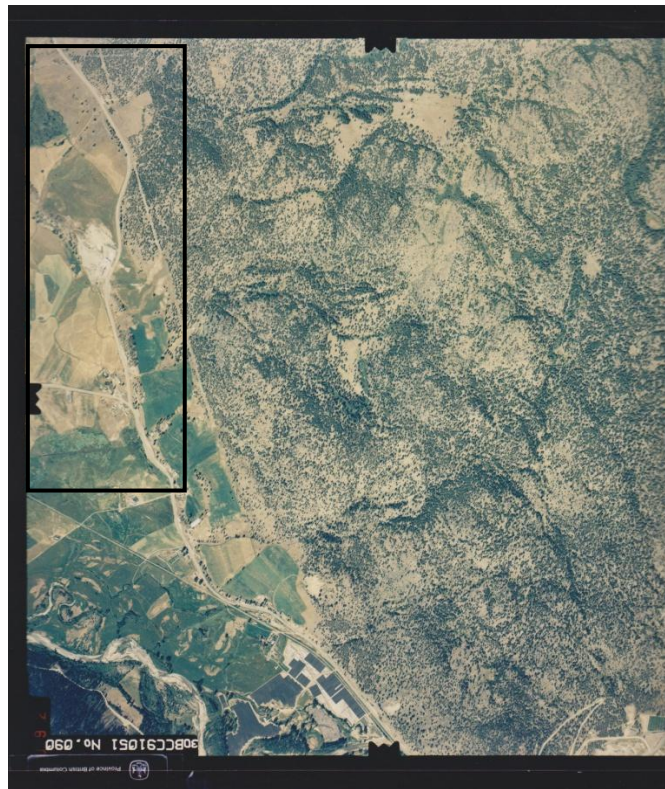
Photograph 3. 1960 Aerial Photograph BC A17245 30-001



Photograph 4. 1968 Aerial Photograph BC 5185-227 001



Photograph 5. 1972 Aerial Photograph RSA30518-24 001



Photograph 6. 1991 Aerial Photograph 30 BCC91051-090 001



Photograph 7. 2000 Aerial Photograph 30 BCC 00117-170

APPENDIX F
POTENTIAL SPECIES AT RISK

Table B: BC CDC Search Results for Species within the Bunchgrass Ecosystem (CDC, 2010)¹

Scientific Name	English Name	COSEWIC*	BC List**
Amphibians			
<i>Spea intermontana</i>	Great Basin Spadefoot	T (Apr 2007)	Blue
<i>Chrysemys picta pop. 2</i>	Western Painted Turtle - Intermountain - Rocky Mountain Population	SC (Apr 2006)	Blue
Fish			
<i>Acrocheilus alutaceus</i>	Chiselmouth	NAR (May 2003)	Blue
<i>Catostomus platyrhynchus</i>	Mountain Sucker	NAR (May 1991)	Blue
<i>Salvelinus confluentus</i>	Bull Trout		Blue
Reptiles			
<i>Coluber constrictor</i>	Racer	SC (Nov 2004)	Blue
<i>Pituophis catenifer deserticola</i>	Gopher Snake, <i>deserticola</i> subspecies	T (May 2002)	Blue
<i>Crotalus oreganus</i>	Western Rattlesnake	T (May 2004)	Blue
Birds			
<i>Ardea herodias herodias</i>	Great Blue Heron, <i>herodias</i> subspecies		Blue
<i>Buteo swainsoni</i>	Swainson's Hawk		Red
<i>Falco mexicanus</i>	Prairie Falcon	NAR (May 1996)	Red
<i>Falco peregrinus anatum</i>	Peregrine Falcon, <i>anatum</i> subspecies	SC (Apr 2007)	Red
<i>Grus canadensis</i>	Sandhill Crane	NAR (May 1979)	Yellow
<i>Numenius americanus</i>	Long-billed Curlew	SC (Nov 2002)	Blue
<i>Asio flammeus</i>	Short-eared Owl	SC (Mar 2008)	Blue
<i>Athene cunicularia</i>	Burrowing Owl	E (Apr 2006)	Red
<i>Megascops kennicottii macfarlanei</i>	Western Screech-Owl, <i>macfarlanei</i> subspecies	E (May 2002)	Red
<i>Otus flammeolus</i>	Flammulated Owl	SC (Apr 2010)	Blue
<i>Melanerpes lewis</i>	Lewis's Woodpecker	T (Apr 2010)	Red
<i>Sphyrapicus thyroideus thyroideus</i>	Williamson's Sapsucker, <i>thyroideus</i> subspecies	E (May 2005)	Red

Scientific Name	English Name	COSEWIC*	BC List**
<i>Contopus cooperi</i>	Olive-sided Flycatcher	T (Nov 2007)	Blue
<i>Eremophila alpestris merrilli</i>	Horned Lark, <i>merrilli</i> subspecies		Blue
<i>Hirundo rustica</i>	Barn Swallow		Blue
<i>Catherpes mexicanus</i>	Canyon Wren	NAR (May 1992)	Blue
<i>Oreoscoptes montanus</i>	Sage Thrasher	E (Nov 2000)	Red
<i>Chondestes grammacus</i>	Lark Sparrow		Red
<i>Spizella breweri breweri</i>	Brewer's Sparrow, <i>breweri</i> subspecies		Red
<i>Dolichonyx oryzivorus</i>	Bobolink	T (Apr 2010)	Blue
<i>Euphagus carolinus</i>	Rusty Blackbird	SC (Apr 2006)	Blue
Mammals			
<i>Perognathus parvus</i>	Great Basin Pocket Mouse		Red
<i>Corynorhinus townsendii</i>	Townsend's Big-eared Bat		Blue
<i>Euderma maculatum</i>	Spotted Bat	SC (May 2004)	Blue
<i>Myotis ciliolabrum</i>	Western Small-footed Myotis		Blue
<i>Myotis thysanodes</i>	Fringed Myotis	DD (May 2004)	Blue
<i>Gulo gulo luscus</i>	Wolverine, <i>luscus</i> subspecies	SC (May 2003)	Blue
<i>Martes pennanti</i>	Fisher		Blue
<i>Taxidea taxus</i>	American Badger	E (May 2000)	Red
<i>Ursus arctos</i>	Grizzly Bear	SC (May 2002)	Blue
<i>Ovis canadensis</i>	Bighorn Sheep		Blue
Invertebrates			
<i>Stylurus olivaceus</i>	Olive Clubtail		Red
<i>Hesperia nevada</i>	Nevada Skipper		Blue
<i>Pholisora catullus</i>	Common Sootywing		Blue
<i>Satyrium californica</i>	California Hairstreak		Blue
<i>Danaus plexippus</i>	Monarch	SC (Apr 2010)	Blue
<i>Promenetus umbilicatellus</i>	Umbilicate Sprite		Blue
<i>Vallonia cyclophorella</i>	Silky Vallonia		Blue
<i>Hemphillia camelus</i>	Pale Jumping-slug		Blue
Vascular Plants			
<i>Azolla mexicana</i>	Mexican mosquito fern	T (Nov 2008)	Red

Scientific Name	English Name	COSEWIC*	BC List**
<i>Dryopteris cristata</i>	crested wood fern		Blue
<i>Ophioglossum pusillum</i>	northern adder's-tongue		Blue
<i>Agoseris lackschewitzii</i>	pink agoseris		Blue
<i>Arabis lignifera</i>	woody-branched rockcress		Blue
<i>Arabis sparsiflora</i>	sickle-pod rockcress		Red
<i>Astragalus lentiginosus</i>	freckled milk-vetch		Blue
<i>Atriplex argentea</i> ssp. <i>argentea</i>	silvery orache		Red
<i>Atriplex truncata</i>	wedgescale orache		Red
<i>Castilleja cusickii</i>	Cusick's paintbrush		Red
<i>Centaurium exaltatum</i>	western centaury		Red
<i>Chamaerhodos erecta</i> ssp. <i>nuttallii</i>	American chamaerhodos		Blue
<i>Chamaesyce serpyllifolia</i> ssp. <i>serpyllifolia</i>	thyme-leaved spurge		Blue
<i>Chenopodium atrovirens</i>	dark lamb's-quarters		Red
<i>Crepis atribarba</i> ssp. <i>atribarba</i>	slender hawksbeard		Red
<i>Crepis modocensis</i> ssp. <i>modocensis</i>	low hawksbeard		Red
<i>Crepis modocensis</i> ssp. <i>rostrata</i>	western low hawksbeard		Red
<i>Epilobium halleanum</i>	Hall's willowherb		Blue
<i>Gaura coccinea</i>	scarlet gaura		Red
<i>Gayophytum humile</i>	dwarf groundsmoke		Blue
<i>Hackelia diffusa</i>	spreading stickseed		Blue
<i>Hedeoma hispida</i>	mock-pennyroyal		Red
<i>Hutchinsia procumbens</i>	hutchinsia		Blue
<i>Hypericum scouleri</i> ssp. <i>nortoniae</i>	western St. John's-wort		Blue
<i>Iva axillaris</i>	poverty-weed		Red

Scientific Name	English Name	COSEWIC*	BC List**
<i>Leptosiphon septentrionalis</i>	northern linanthus		Blue
<i>Lupinus argenteus</i> var. <i>laxiflorus</i>	silvery lupine		Red
<i>Lupinus bingenensis</i> var. <i>subsaccatus</i>	Suksdorf's lupine		Red
<i>Mimulus breviflorus</i>	short-flowered monkey-flower		Red
<i>Myriophyllum ussuriense</i>	Ussurian water-milfoil		Blue
<i>Navarretia intertexta</i>	needle-leaved navarretia		Red
<i>Polygonum polygaloides</i> ssp. <i>kelloggii</i>	Kellogg's knotweed		Blue
<i>Pyrola elliptica</i>	white wintergreen		Blue
<i>Salix boothii</i>	Booth's willow		Blue
<i>Salix tweedyi</i>	Tweedy's willow		Blue
<i>Sidalcea oregana</i> var. <i>procera</i>	Oregon checker-mallow		Red
<i>Sphaeralcea coccinea</i>	scarlet globe-mallow		Red
<i>Allium geyeri</i> var. <i>tenerum</i>	Geyer's onion		Blue
<i>Carex hystericina</i>	porcupine sedge		Blue
<i>Carex sychnocephala</i>	many-headed sedge		Blue
<i>Cyperus squarrosus</i>	awned cyperus		Blue
<i>Epipactis gigantea</i>	giant helleborine	SC (May 1998)	Blue
<i>Hesperostipa spartea</i>	porcupinegrass		Red
<i>Juncus confusus</i>	Colorado rush		Red
<i>Melica spectabilis</i>	purple oniongrass		Blue
<i>Olsynium douglasii</i> var. <i>inflatum</i>	satinflower		Red
<i>Poa fendleriana</i> ssp. <i>fendleriana</i>	mutton grass		Red
<i>Sphenopholis obtusata</i>	prairie wedgegrass		Red
<i>Sporobolus compositus</i> var. <i>compositus</i>	rough dropseed		Blue

Scientific Name	English Name	COSEWIC*	BC List**
<i>Stuckenia vaginata</i>	sheathing pondweed		Blue
Non Vascular Plants			
<i>Bryoerythrophyllum columbianum</i>	Columbian carpet moss	SC (May 2004)	Blue
<i>Microbryum vlassovii</i>	nugget moss	E (Nov 2006)	Red
<i>Pterygoneurum kozlovii</i>	alkaline wing-nerved moss	T (Nov 2004)	Red

* SC=Special Concern; T=Threatened; E=Endangered; XT=extirpated

** Blue= of special concern, Red= extirpated, endangered or threatened in British Columbia

APPENDIX G
HISTORICAL REPORTS

APPENDIX H

AST LOGS

CHECKLIST FOR ROUTINE INSPECTIONS OF ABOVEGROUND STORAGE TANKS

Location: Lot 219 AST

Date: 09/27/2010

Tank Size: 4500 L

Distance from Buildings or other tanks: > 10m

Stain Area: Small Spotty Stains & Stained Wood Supports

Tank ID #: None

Question					Comments/Observations
Tanks, pipes and dispensing stations are appropriately labeled, with labels in good condition.				N	"Diesel" , "1202" MSDS stickers
Tank support structure and vents are free of rust, weeps, wet spots, or excessive dents on the tank's surface.				Y	Wooden support structure heavily stained below hose
Tank is free of drips or signs of leakage around valves, piping and gauges.				Y	
Tank gauges are in good repair, with no evidence of cracking, sticking or freezing.				-	No gauges
Tank fill pipe is free of blockage and in good condition.				Y	
Tank vents are in good repair and free of obstructions (e.g.: ice or snow)				Y	
Automatic shutoff devices, overfill alarms, float valves and similar spill prevention equipment operating are in good repair				-	No alarms, nozzle in good working order
Tank and pipe coating is in good condition.				Y	
Corrosion protection and grounding systems are functioning properly and in good repair.				N	No protection or grounding on tank
Vehicular impact protection measures are in good repair.				N	No fence surrounding tank
Secondary containment dikes, bunkers and berms are in good repair and free of cracks.				Y	No secondary containment
Drainage valves and pumps are locked in the closed/off position.				N	No locks-Tank is empty
Secondary containment dikes, bunkers and berms are free from debris accumulated water or snow and cracks and corrosion.				N	No secondary containment
Precautionary signs (e.g.: emergency response requirements, "No Smoking" signs) are present and in good repair.				N	Not on tank
Spill prevention measures (i.e.: spill kits) are available and in close proximity?				N	No spill kit
Inventory control records are maintained in accordance with established procedures.				N	Records not collected
Additional Notes:	Located at 2956 Yap Skim Road in Rocky Pines Subdivision				

Inspection Completed By: Summer Zawacky and Carmen Marshall

CHECKLIST FOR ROUTINE INSPECTIONS OF ABOVEGROUND STORAGE TANKS

Location: Lot 254 AST

Date: 09/27/2010

Tank Size: 2500 L m Diesel

Distance from Buildings or other tanks: > 10m

Stain Area: 0.05 m stain below hose

Tank ID #:

Question					Comments/Observations
Tanks, pipes and dispensing stations are appropriately labeled, with labels in good condition.				Y	Diesel
Tank support structure and vents are free of rust, weeps, wet spots, or excessive dents on the tank's surface.				Y	
Tank is free of drips or signs of leakage around valves, piping and gauges.				Y	Small stain below hose
Tank gauges are in good repair, with no evidence of cracking, sticking or freezing.				Y	
Tank fill pipe is free of blockage and in good condition.				Y	
Tank vents are in good repair and free of obstructions (e.g.: ice or snow)				Y	
Automatic shutoff devices, overfill alarms, float valves and similar spill prevention equipment operating are in good repair				Y	
Tank and pipe coating is in good condition.				Y	
Corrosion protection and grounding systems are functioning properly and in good repair.				Y	
Vehicular impact protection measures are in good repair.				N	No fence surrounding tank
Secondary containment dikes, bunkers and berms are in good repair and free of cracks.				Y	Tank is on concrete blocks
Drainage valves and pumps are locked in the closed/off position.				Y	
Secondary containment dikes, bunkers and berms are free from debris accumulated water or snow and cracks and corrosion.				Y	
Precautionary signs (e.g.: emergency response requirements, "No Smoking" signs) are present and in good repair.				Y	
Spill prevention measures (i.e.: spill kits) are available and in close proximity?				N	No spill kit
Inventory control records are maintained in accordance with established procedures.				N	Records not collected
Additional Notes:	Lucinda Seward's Lot at 2852 Yap Skim Road				

Inspection Completed By: Summer Zawacky and Carmen Marshall

CHECKLIST FOR ROUTINE INSPECTIONS OF ABOVEGROUND STORAGE TANKS

Location: Lot 279 AST

Date: 09/27/2010

Tank Size: 4500 L

Distance from Buildings or other tanks: > 10m

Stain Area: None

Tank ID #:

Question					Comments/Observations
Tanks, pipes and dispensing stations are appropriately labeled, with labels in good condition.				Y	1202 MSDS label
Tank support structure and vents are free of rust, weeps, wet spots, or excessive dents on the tank's surface.				N	Weeping bung at hose fitting
Tank is free of drips or signs of leakage around valves, piping and gauges.				N	Cracked hose, nozzle in good shape
Tank gauges are in good repair, with no evidence of cracking, sticking or freezing.				-	No gauges
Tank fill pipe is free of blockage and in good condition.				Y	
Tank vents are in good repair and free of obstructions (e.g.: ice or snow)				-	No tank vent
Automatic shutoff devices, overfill alarms, float valves and similar spill prevention equipment operating are in good repair				-	No alarms
Tank and pipe coating is in good condition.				Y	Tank is rusted, shows signs of peeling
Corrosion protection and grounding systems are functioning properly and in good repair.				N	No protection or grounding on tank
Vehicular impact protection measures are in good repair.				N	No fence surrounding tank
Secondary containment dikes, bunkers and berms are in good repair and free of cracks.				Y	No secondary containment
Drainage valves and pumps are locked in the closed/off position.				N	No locks-Tank is empty
Secondary containment dikes, bunkers and berms are free from debris accumulated water or snow and cracks and corrosion.				N	No secondary containment
Precautionary signs (e.g.: emergency response requirements, "No Smoking" signs) are present and in good repair.				N	Not on tank
Spill prevention measures (i.e.: spill kits) are available and in close proximity?				N	No spill kit
Inventory control records are maintained in accordance with established procedures.				N	Records not collected
Additional Notes:	AST observed at 2796 Yap Skim road, not the original fuelling location				

Inspection Completed By: Summer Zawacky and Carmen Marshall

CHECKLIST FOR ROUTINE INSPECTIONS OF ABOVEGROUND STORAGE TANKS

Location: Lot 297 AST 1

Date: 09/27/2010

Tank Size: 1800 L

Distance from Buildings or other tanks: > 10m

Stain Area: None

Tank ID #:

Question					Comments/Observations
Tanks, pipes and dispensing stations are appropriately labeled, with labels in good condition.				N	Diesel Label, No MSDS
Tank support structure and vents are free of rust, weeps, wet spots, or excessive dents on the tank's surface.				Y	Vents not visible
Tank is free of drips or signs of leakage around valves, piping and gauges.				Y	Weeping Bung rusted and intact
Tank gauges are in good repair, with no evidence of cracking, sticking or freezing.				-	No gauges
Tank fill pipe is free of blockage and in good condition.				Y	Rusted Intact fill pipes
Tank vents are in good repair and free of obstructions (e.g.: ice or snow)				Y	
Automatic shutoff devices, overfill alarms, float valves and similar spill prevention equipment operating are in good repair				Y	
Tank and pipe coating is in good condition.				Y	
Corrosion protection and grounding systems are functioning properly and in good repair.				Y	
Vehicular impact protection measures are in good repair.				N	No vehicular impact protection
Secondary containment dikes, bunkers and berms are in good repair and free of cracks.				N	No secondary containment
Drainage valves and pumps are locked in the closed/off position.				Y	
Secondary containment dikes, bunkers and berms are free from debris accumulated water or snow and cracks and corrosion.				N	No secondary containment
Precautionary signs (e.g.: emergency response requirements, "No Smoking" signs) are present and in good repair.				N	No signs
Spill prevention measures (i.e.: spill kits) are available and in close proximity?				N	No spill kit not visible- may be on machines
Inventory control records are maintained in accordance with established procedures.				N	Records not collected
Additional Notes:	Located adjacent to Gas AST at 2961 Highway 97C				

Inspection Completed By: Summer Zawacky and Carmen Marshall

CHECKLIST FOR ROUTINE INSPECTIONS OF ABOVEGROUND STORAGE TANKS

Location: Lot 297 AST 2

Date: 09/27/2010

Tank Size: 1800 L

Distance from Buildings or other tanks: > 10m

Stain Area: None

Tank ID #:

Question					Comments/Observations
Tanks, pipes and dispensing stations are appropriately labeled, with labels in good condition.				N	"Regular Fuel" Label, No MSDS
Tank support structure and vents are free of rust, weeps, wet spots, or excessive dents on the tank's surface.				Y	Vents not visible
Tank is free of drips or signs of leakage around valves, piping and gauges.				Y	Weeping Bung rusted and intact
Tank gauges are in good repair, with no evidence of cracking, sticking or freezing.				-	No gauges
Tank fill pipe is free of blockage and in good condition.				Y	Rusted Intact fill pipes
Tank vents are in good repair and free of obstructions (e.g.: ice or snow)				Y	
Automatic shutoff devices, overfill alarms, float valves and similar spill prevention equipment operating are in good repair				Y	
Tank and pipe coating is in good condition.				Y	
Corrosion protection and grounding systems are functioning properly and in good repair.				Y	
Vehicular impact protection measures are in good repair.				N	No vehicular impact protection
Secondary containment dikes, bunkers and berms are in good repair and free of cracks.				N	No secondary containment
Drainage valves and pumps are locked in the closed/off position.				Y	
Secondary containment dikes, bunkers and berms are free from debris accumulated water or snow and cracks and corrosion.				N	No secondary containment
Precautionary signs (e.g.: emergency response requirements, "No Smoking" signs) are present and in good repair.				N	No signs
Spill prevention measures (i.e.: spill kits) are available and in close proximity?				N	No spill kit not visible- may be on machines
Inventory control records are maintained in accordance with established procedures.				N	Records not collected
Additional Notes:	AST observed directly adjacent to Diesel AST at 2961 Highway 97C				

Inspection Completed By: Summer Zawacky and Carmen Marshall

CHECKLIST FOR ROUTINE INSPECTIONS OF ABOVEGROUND STORAGE TANKS

Location: Lot 297 AST 3

Date: 09/27/2010

Tank Size: 800L

Distance from Buildings or other tanks: > 10m

Stain Area: Staining around adjacent 20L oil pail

Tank ID #:

Question					Comments/Observations
Tanks, pipes and dispensing stations are appropriately labeled, with labels in good condition.				N	No labels
Tank support structure and vents are free of rust, weeps, wet spots, or excessive dents on the tank's surface.				Y	
Tank is free of drips or signs of leakage around valves, piping and gauges.				Y	Weeping Bung
Tank gauges are in good repair, with no evidence of cracking, sticking or freezing.				-	No gauges
Tank fill pipe is free of blockage and in good condition.				Y	
Tank vents are in good repair and free of obstructions (e.g.: ice or snow)				Y	
Automatic shutoff devices, overfill alarms, float valves and similar spill prevention equipment operating are in good repair				Y	
Tank and pipe coating is in good condition.				Y	
Corrosion protection and grounding systems are functioning properly and in good repair.				Y	
Vehicular impact protection measures are in good repair.				N	No vehicular impact protection
Secondary containment dikes, bunkers and berms are in good repair and free of cracks.				N	No secondary containment
Drainage valves and pumps are locked in the closed/off position.				Y	
Secondary containment dikes, bunkers and berms are free from debris accumulated water or snow and cracks and corrosion.				N	No secondary containment
Precautionary signs (e.g.: emergency response requirements, "No Smoking" signs) are present and in good repair.				N	No signs
Spill prevention measures (i.e.: spill kits) are available and in close proximity?				N	Not in use
Inventory control records are maintained in accordance with established procedures.				N	Records not collected
Additional Notes:	Tanks were observed at 2961 highway 97C. Tank is on ground with open 20L oil pail containing product adjacent. A former heating oil tank is on its side, strapped to wooden skid and not in use at the original location. Two empty tidy tanks were noted adjacent.				

Inspection Completed By: Summer Zawacky and Carmen Marshall

CHECKLIST FOR ROUTINE INSPECTIONS OF ABOVEGROUND STORAGE TANKS

Location: Lot 297 AST 4

Date: 09/27/2010

Tank Size: 2000L

Distance from Buildings or other tanks: > 10m

Stain Area: None

Tank ID #:

Question					Comments/Observations
Tanks, pipes and dispensing stations are appropriately labeled, with labels in good condition.				N	No labels
Tank support structure and vents are free of rust, weeps, wet spots, or excessive dents on the tank's surface.				Y	
Tank is free of drips or signs of leakage around valves, piping and gauges.				Y	
Tank gauges are in good repair, with no evidence of cracking, sticking or freezing.				-	No gauges
Tank fill pipe is free of blockage and in good condition.				Y	
Tank vents are in good repair and free of obstructions (e.g.: ice or snow)				Y	
Automatic shutoff devices, overfill alarms, float valves and similar spill prevention equipment operating are in good repair				Y	
Tank and pipe coating is in good condition.				Y	
Corrosion protection and grounding systems are functioning properly and in good repair.				Y	
Vehicular impact protection measures are in good repair.				N	No vehicular impact protection
Secondary containment dikes, bunkers and berms are in good repair and free of cracks.				N	No secondary containment
Drainage valves and pumps are locked in the closed/off position.				Y	
Secondary containment dikes, bunkers and berms are free from debris accumulated water or snow and cracks and corrosion.				N	No secondary containment
Precautionary signs (e.g.: emergency response requirements, "No Smoking" signs) are present and in good repair.				N	No signs
Spill prevention measures (i.e.: spill kits) are available and in close proximity?				N	Not in use
Inventory control records are maintained in accordance with established procedures.				N	Records not collected
Additional Notes:	Tanks were observed at 2961 highway 97C. Tank is red, dented, and not in use at original location. An empty septic tank is located adjacent.				

Inspection Completed By: Summer Zawacky and Carmen Marshall

CHECKLIST FOR ROUTINE INSPECTIONS OF ABOVEGROUND STORAGE TANKS

Location: Lot 294 AST 1

Date: 09/27/2010

Tank Size: 1600 L

Distance from Buildings or other tanks: > 10m

Stain Area: 1.5m x 0.5m

Tank ID #:

Question					Comments/Observations
Tanks, pipes and dispensing stations are appropriately labeled, with labels in good condition.				N	Diesel Label, No MSDS
Tank support structure and vents are free of rust, weeps, wet spots, or excessive dents on the tank's surface.				Y	Vents not visible
Tank is free of drips or signs of leakage around valves, piping and gauges.				Y	Weeping Bung rusted and intact
Tank gauges are in good repair, with no evidence of cracking, sticking or freezing.				-	No gauges
Tank fill pipe is free of blockage and in good condition.				N	Weeping fill pipe
Tank vents are in good repair and free of obstructions (e.g.: ice or snow)				Y	
Automatic shutoff devices, overfill alarms, float valves and similar spill prevention equipment operating are in good repair				Y	
Tank and pipe coating is in good condition.				Y	
Corrosion protection and grounding systems are functioning properly and in good repair.				Y	
Vehicular impact protection measures are in good repair.				N	No Vehicular impact protection
Secondary containment dikes, bunkers and berms are in good repair and free of cracks.				Y	
Drainage valves and pumps are locked in the closed/off position.				Y	
Secondary containment dikes, bunkers and berms are free from debris accumulated water or snow and cracks and corrosion.				Y	
Precautionary signs (e.g.: emergency response requirements, "No Smoking" signs) are present and in good repair.				Y	
Spill prevention measures (i.e.: spill kits) are available and in close proximity?				N	No spill kit not visible- may be on machines
Inventory control records are maintained in accordance with established procedures.				N	Records not collected
Additional Notes:	Tank observed directly adjacent to second diesel AST of same shape and volume at 2957 Highway 97C.				

Inspection Completed By: Summer Zawacky and Carmen Marshall

CHECKLIST FOR ROUTINE INSPECTIONS OF ABOVEGROUND STORAGE TANKS

Location: Lot 294 AST 2

Date: 09/27/2010

Tank Size: 1600 L

Distance from Buildings or other tanks: > 10m

Stain Area: 1.5m x 0.5m

Tank ID #:

Question					Comments/Observations
Tanks, pipes and dispensing stations are appropriately labeled, with labels in good condition.				N	Diesel Label, No MSDS
Tank support structure and vents are free of rust, weeps, wet spots, or excessive dents on the tank's surface.				Y	Vents not visible
Tank is free of drips or signs of leakage around valves, piping and gauges.				Y	Weeping Bung rusted and intact
Tank gauges are in good repair, with no evidence of cracking, sticking or freezing.				-	No gauges
Tank fill pipe is free of blockage and in good condition.				N	Weeping fill pipe
Tank vents are in good repair and free of obstructions (e.g.: ice or snow)				Y	
Automatic shutoff devices, overfill alarms, float valves and similar spill prevention equipment operating are in good repair				Y	
Tank and pipe coating is in good condition.				Y	
Corrosion protection and grounding systems are functioning properly and in good repair.				Y	
Vehicular impact protection measures are in good repair.				N	No Vehicular impact protection
Secondary containment dikes, bunkers and berms are in good repair and free of cracks.				Y	
Drainage valves and pumps are locked in the closed/off position.				Y	
Secondary containment dikes, bunkers and berms are free from debris accumulated water or snow and cracks and corrosion.				Y	
Precautionary signs (e.g.: emergency response requirements, "No Smoking" signs) are present and in good repair.				Y	
Spill prevention measures (i.e.: spill kits) are available and in close proximity?				N	No spill kit not visible- may be on machines
Inventory control records are maintained in accordance with established procedures.				N	Records not collected
Additional Notes:	Tank observed directly adjacent to second diesel AST of same shape and volume at 2957 Highway 97C.				

Inspection Completed By: Summer Zawacky and Carmen Marshall

CHECKLIST FOR ROUTINE INSPECTIONS OF ABOVEGROUND STORAGE TANKS

Location: Lot 146 Sawmill AST 1

Date: 09/27/2010

Tank Size: 4500 L

Distance from Buildings or other tanks: > 2m

Stain Area: None

Tank ID #:

Question					Comments/Observations
Tanks, pipes and dispensing stations are appropriately labeled, with labels in good condition.				Y	Diesel tank labels
Tank support structure and vents are free of rust, weeps, wet spots, or excessive dents on the tank's surface.				Y	
Tank is free of drips or signs of leakage around valves, piping and gauges.				Y	
Tank gauges are in good repair, with no evidence of cracking, sticking or freezing.				Y	
Tank fill pipe is free of blockage and in good condition.				Y	
Tank vents are in good repair and free of obstructions (e.g.: ice or snow)				Y	
Automatic shutoff devices, overfill alarms, float valves and similar spill prevention equipment operating are in good repair				Y	
Tank and pipe coating is in good condition.				Y	
Corrosion protection and grounding systems are functioning properly and in good repair.				Y	
Vehicular impact protection measures are in good repair.				Y	Cement barricades block traffic
Secondary containment dikes, bunkers and berms are in good repair and free of cracks.				Y	Double-walled tank
Drainage valves and pumps are locked in the closed/off position.				Y	
Secondary containment dikes, bunkers and berms are free from debris accumulated water or snow and cracks and corrosion.				Y	
Precautionary signs (e.g.: emergency response requirements, "No Smoking" signs) are present and in good repair.				Y	
Spill prevention measures (i.e.: spill kits) are available and in close proximity?				N	No spill kit not visible- may be on machines
Inventory control records are maintained in accordance with established procedures.				N	Records not collected
Additional Notes:	New double walled tank is on concrete. Mill has been in operation for 11 months				

Inspection Completed By: Summer Zawacky and Carmen Marshall

CHECKLIST FOR ROUTINE INSPECTIONS OF ABOVEGROUND STORAGE TANKS

Location: Mojo's Lot 265 AST

Date: 09/29/2010

Tank Size: 31 000 L

Distance from Buildings or other tanks: > 10m

Stain Area: 0.5m x 0.5m

Tank ID #:

Question					Comments/Observations
Tanks, pipes and dispensing stations are appropriately labeled, with labels in good condition.				Y	Diesel
Tank support structure and vents are free of rust, weeps, wet spots, or excessive dents on the tank's surface.				Y	New tank
Tank is free of drips or signs of leakage around valves, piping and gauges.				Y	
Tank gauges are in good repair, with no evidence of cracking, sticking or freezing.				-	No gauges
Tank fill pipe is free of blockage and in good condition.				Y	Tank is new
Tank vents are in good repair and free of obstructions (e.g.: ice or snow)				Y	
Automatic shutoff devices, overfill alarms, float valves and similar spill prevention equipment operating are in good repair				Y	
Tank and pipe coating is in good condition.				Y	
Corrosion protection and grounding systems are functioning properly and in good repair.				Y	
Vehicular impact protection measures are in good repair.				N	No vehicular impact protection
Secondary containment dikes, bunkers and berms are in good repair and free of cracks.				Y	secondary containment is a concrete pad (8m x 8m)
Drainage valves and pumps are locked in the closed/off position.				Y	
Secondary containment dikes, bunkers and berms are free from debris accumulated water or snow and cracks and corrosion.				Y	secondary containment is new
Precautionary signs (e.g.: emergency response requirements, "No Smoking" signs) are present and in good repair.				N	No signs
Spill prevention measures (i.e.: spill kits) are available and in close proximity?				N	No spill kit not visible- may be on machines
Inventory control records are maintained in accordance with established procedures.				N	Records not collected
Additional Notes:	AST associated with the Peter Bros operations at the gravel pit and asphalt plant				

Inspection Completed By: Summer Zawacky and Carmen Marshall

CHECKLIST FOR ROUTINE INSPECTIONS OF ABOVEGROUND STORAGE TANKS

Location: Lot 87-4 AST

Date: 09/27/2010

Tank Size: 4500 L

Distance from Buildings or other tanks: > 50m

Stain Area: 1.0 m diameter

Tank ID #:

Question					Comments/Observations
Tanks, pipes and dispensing stations are appropriately labeled, with labels in good condition.				N	No MSDS label only label "Diesel clear"
Tank support structure and vents are free of rust, weeps, wet spots, or excessive dents on the tank's surface.				N	Rust on support structure
Tank is free of drips or signs of leakage around valves, piping and gauges.				N	Below the nozzle is a stain on the ground. Leaking nozzle, cracked hose
Tank gauges are in good repair, with no evidence of cracking, sticking or freezing.				N	No gauges
Tank fill pipe is free of blockage and in good condition.				N	Not visible due to elevation
Tank vents are in good repair and free of obstructions (e.g.: ice or snow)				-	No vent pipe
Automatic shutoff devices, overfill alarms, float valves and similar spill prevention equipment operating are in good repair				-	No alarms
Tank and pipe coating is in good condition.				N	Tank is rusted
Corrosion protection and grounding systems are functioning properly and in good repair.				N	Not on tank
Vehicular impact protection measures are in good repair.				N	No fence, only steel support structure
Secondary containment dikes, bunkers and berms are in good repair and free of cracks.				N	No secondary containment
Drainage valves and pumps are locked in the closed/off position.				Y	
Secondary containment dikes, bunkers and berms are free from debris accumulated water or snow and cracks and corrosion.				N	No secondary containment
Precautionary signs (e.g.: emergency response requirements, "No Smoking" signs) are present and in good repair.				N	No signs
Spill prevention measures (i.e.: spill kits) are available and in close proximity?				N	No spill kit
Inventory control records are maintained in accordance with established procedures.				N	None available
Additional Notes:	Open 20L pail of used radiator fluid is adjacent.				

Inspection Completed By: Summer Zawacky and Carmen Marshall

CHECKLIST FOR ROUTINE INSPECTIONS OF ABOVEGROUND STORAGE TANKS

Location: Lot 208 AST (213E)

Date: 09/30/2010

Tank Size: 2300L

Distance from Buildings or other tanks: > 2.0m

Stain Area: 0.1 meter diameter stain below

Tank ID #:

Question					Comments/Observations
Tanks, pipes and dispensing stations are appropriately labeled, with labels in good condition.				N	No labels
Tank support structure and vents are free of rust, weeps, wet spots, or excessive dents on the tank's surface.				Y	
Tank is free of drips or signs of leakage around valves, piping and gauges.				N	Hose is cracked in 2 locations, weeping at nozzle
Tank gauges are in good repair, with no evidence of cracking, sticking or freezing.				N	No gauges
Tank fill pipe is free of blockage and in good condition.				Y	
Tank vents are in good repair and free of obstructions (e.g.: ice or snow)				Y	
Automatic shutoff devices, overfill alarms, float valves and similar spill prevention equipment operating are in good repair				N	No alarms
Tank and pipe coating is in good condition.				Y	
Corrosion protection and grounding systems are functioning properly and in good repair.				Y	New tank with grounding system
Vehicular impact protection measures are in good repair.				N	No barricades to traffic
Secondary containment dikes, bunkers and berms are in good repair and free of cracks.				Y	
Drainage valves and pumps are locked in the closed/off position.				Y	
Secondary containment dikes, bunkers and berms are free from debris accumulated water or snow and cracks and corrosion.				Y	New secondary containment
Precautionary signs (e.g.: emergency response requirements, "No Smoking" signs) are present and in good repair.				N	Visible signs
Spill prevention measures (i.e.: spill kits) are available and in close proximity?				N	Not in use
Inventory control records are maintained in accordance with established procedures.				N	Not in use
Additional Notes:	Not in permanent location. Tank was located at 213E Highway 8 at the time of the site visit.				

Inspection Completed By: Summer Zawacky and Carmen Marshall

CHECKLIST FOR ROUTINE INSPECTIONS OF ABOVEGROUND STORAGE TANKS

Location: Lot 208 (225E AST 1)

Date: 09/30/2010

Tank Size: 1000L Diesel

Distance from Buildings or other tanks: > 2.0m

Stain Area: No staining or odor

Tank ID #:

Question					Comments/Observations
Tanks, pipes and dispensing stations are appropriately labeled, with labels in good condition.				Y	
Tank support structure and vents are free of rust, weeps, wet spots, or excessive dents on the tank's surface.				N	Weeping bung, tank rusting, hose is cracked
Tank is free of drips or signs of leakage around valves, piping and gauges.				Y	
Tank gauges are in good repair, with no evidence of cracking, sticking or freezing.				N	No gauges
Tank fill pipe is free of blockage and in good condition.				Y	
Tank vents are in good repair and free of obstructions (e.g.: ice or snow)				N	Vent pipe is rusting
Automatic shutoff devices, overfill alarms, float valves and similar spill prevention equipment operating are in good repair				N	No alarms
Tank and pipe coating is in good condition.				N	Tank is rusting
Corrosion protection and grounding systems are functioning properly and in good repair.				N	No grounding system or corrosive protection
Vehicular impact protection measures are in good repair.				N	No barricades to traffic
Secondary containment dikes, bunkers and berms are in good repair and free of cracks.				N	No secondary containment
Drainage valves and pumps are locked in the closed/off position.				Y	
Secondary containment dikes, bunkers and berms are free from debris accumulated water or snow and cracks and corrosion.				N	No secondary containment
Precautionary signs (e.g.: emergency response requirements, "No Smoking" signs) are present and in good repair.				N	Visible signs
Spill prevention measures (i.e.: spill kits) are available and in close proximity?				N	Not in use
Inventory control records are maintained in accordance with established procedures.				N	Not in use
Additional Notes:	AST 1 is one of 3 tanks stacked adjacent to a barn at 225E Highway 8, and do not appear in use.				

Inspection Completed By: Summer Zawacky and Carmen Marshall

CHECKLIST FOR ROUTINE INSPECTIONS OF ABOVEGROUND STORAGE TANKS

Location: Lot 208 (225E AST 2)

Date: 09/30/2010

Tank Size: 1350L

Distance from Buildings or other tanks: > 2.0m

Stain Area: No odor or staining

Tank ID #:

Question					Comments/Observations
Tanks, pipes and dispensing stations are appropriately labeled, with labels in good condition.				N	Only label states "Gasoline"
Tank support structure and vents are free of rust, weeps, wet spots, or excessive dents on the tank's surface.				N	Weeping bung, tank rusting, weeps on side of tank near fill pipe
Tank is free of drips or signs of leakage around valves, piping and gauges.				Y	No hoses attached to AST
Tank gauges are in good repair, with no evidence of cracking, sticking or freezing.				N	No gauges
Tank fill pipe is free of blockage and in good condition.				Y	
Tank vents are in good repair and free of obstructions (e.g.: ice or snow)				Y	
Automatic shutoff devices, overfill alarms, float valves and similar spill prevention equipment operating are in good repair				N	No alarms
Tank and pipe coating is in good condition.				N	Tank is rusting
Corrosion protection and grounding systems are functioning properly and in good repair.				N	No grounding system or corrosive protection
Vehicular impact protection measures are in good repair.				N	No barricades to traffic
Secondary containment dikes, bunkers and berms are in good repair and free of cracks.				N	No secondary containment
Drainage valves and pumps are locked in the closed/off position.				Y	
Secondary containment dikes, bunkers and berms are free from debris accumulated water or snow and cracks and corrosion.				N	No secondary containment
Precautionary signs (e.g.: emergency response requirements, "No Smoking" signs) are present and in good repair.				N	Visible signs
Spill prevention measures (i.e.: spill kits) are available and in close proximity?				N	Not in use
Inventory control records are maintained in accordance with established procedures.				N	Not in use
Additional Notes:	AST 2 is one of three tanks stacked next to a barn at 225E Highway 8. Tanks do not appear in use.				

Inspection Completed By: Summer Zawacky and Carmen Marshall

CHECKLIST FOR ROUTINE INSPECTIONS OF ABOVEGROUND STORAGE TANKS

Location: Lot 208 (225E AST 3)

Date: 09/30/2010

Tank Size: 2300L

Distance from Buildings or other tanks: > 4.0m

Stain Area: No odor or staining

Tank ID #:

Question					Comments/Observations
Tanks, pipes and dispensing stations are appropriately labeled, with labels in good condition.				N	Only label states "Pacific 66"
Tank support structure and vents are free of rust, weeps, wet spots, or excessive dents on the tank's surface.				N	Tank rusting
Tank is free of drips or signs of leakage around valves, piping and gauges.				Y	No weeping
Tank gauges are in good repair, with no evidence of cracking, sticking or freezing.				N	No gauges
Tank fill pipe is free of blockage and in good condition.				Y	
Tank vents are in good repair and free of obstructions (e.g.: ice or snow)				Y	
Automatic shutoff devices, overfill alarms, float valves and similar spill prevention equipment operating are in good repair				N	No alarms
Tank and pipe coating is in good condition.				N	Tank is rusting
Corrosion protection and grounding systems are functioning properly and in good repair.				N	No grounding system or corrosive protection
Vehicular impact protection measures are in good repair.				N	No barricades to traffic
Secondary containment dikes, bunkers and berms are in good repair and free of cracks.				N	No secondary containment
Drainage valves and pumps are locked in the closed/off position.				Y	
Secondary containment dikes, bunkers and berms are free from debris accumulated water or snow and cracks and corrosion.				N	No secondary containment
Precautionary signs (e.g.: emergency response requirements, "No Smoking" signs) are present and in good repair.				N	Visible signs
Spill prevention measures (i.e.: spill kits) are available and in close proximity?				N	Not in use
Inventory control records are maintained in accordance with established procedures.				N	Not in use
Additional Notes:	AST is one of three ASTs piled against a barn at 225E Highway 8. Tanks do not appear in use.				

Inspection Completed By: Summer Zawacky and Carmen Marshall

CHECKLIST FOR ROUTINE INSPECTIONS OF ABOVEGROUND STORAGE TANKS

Location: Lot 58 AST (260E)

Date: 09/30/2010

Tank Size: 900L

Distance from Buildings or other tanks: > 15.0m

Stain Area: None

Tank ID #:

Question					Comments/Observations
Tanks, pipes and dispensing stations are appropriately labeled, with labels in good condition.				N	Diesel AST
Tank support structure and vents are free of rust, weeps, wet spots, or excessive dents on the tank's surface.				Y	Some rust
Tank is free of drips or signs of leakage around valves, piping and gauges.				Y	Weeping at nozzle
Tank gauges are in good repair, with no evidence of cracking, sticking or freezing.				Y	
Tank fill pipe is free of blockage and in good condition.				Y	
Tank vents are in good repair and free of obstructions (e.g.: ice or snow)				Y	
Automatic shutoff devices, overfill alarms, float valves and similar spill prevention equipment operating are in good repair				N	No alarms
Tank and pipe coating is in good condition.				N	Tank is rusted in moderate condition
Corrosion protection and grounding systems are functioning properly and in good repair.				N	
Vehicular impact protection measures are in good repair.				N	No protection
Secondary containment dikes, bunkers and berms are in good repair and free of cracks.				N	No secondary containment
Drainage valves and pumps are locked in the closed/off position.				N	No visible locks
Secondary containment dikes, bunkers and berms are free from debris accumulated water or snow and cracks and corrosion.				N	No secondary containment
Precautionary signs (e.g.: emergency response requirements, "No Smoking" signs) are present and in good repair.				Y	No visible signs
Spill prevention measures (i.e.: spill kits) are available and in close proximity?				N	Not noted
Inventory control records are maintained in accordance with established procedures.				Y	Records not retrieved
Additional Notes:	2 nd tank of similar size with no stain or odor onsite. ASTs observed at 260E Highway 8				

Inspection Completed By: Summer Zawacky and Carmen Marshall

CHECKLIST FOR ROUTINE INSPECTIONS OF ABOVEGROUND STORAGE TANKS

Location: Lot 58 AST (280E)

Date: 09/30/2010

Tank Size: 300L

Distance from Buildings or other tanks: > 15.0m

Stain Area: No stains

Tank ID #:

Question					Comments/Observations
Tanks, pipes and dispensing stations are appropriately labeled, with labels in good condition.				N	Heating oil tank
Tank support structure and vents are free of rust, weeps, wet spots, or excessive dents on the tank's surface.				Y	Some rust at the bung
Tank is free of drips or signs of leakage around valves, piping and gauges.				Y	Weeping at vent and fill pipe
Tank gauges are in good repair, with no evidence of cracking, sticking or freezing.				Y	
Tank fill pipe is free of blockage and in good condition.				Y	
Tank vents are in good repair and free of obstructions (e.g.: ice or snow)				Y	
Automatic shutoff devices, overfill alarms, float valves and similar spill prevention equipment operating are in good repair				N	No alarms
Tank and pipe coating is in good condition.				N	Tank is rusted in moderate condition
Corrosion protection and grounding systems are functioning properly and in good repair.				N	Both not on tank
Vehicular impact protection measures are in good repair.				N	No protection
Secondary containment dikes, bunkers and berms are in good repair and free of cracks.				N	No secondary containment
Drainage valves and pumps are locked in the closed/off position.				N	No visible locks
Secondary containment dikes, bunkers and berms are free from debris accumulated water or snow and cracks and corrosion.				N	No secondary containment
Precautionary signs (e.g.: emergency response requirements, "No Smoking" signs) are present and in good repair.				Y	No visible signs
Spill prevention measures (i.e.: spill kits) are available and in close proximity?				N	Not noted
Inventory control records are maintained in accordance with established procedures.				Y	Records not retrieved
Additional Notes:	AST observed at 280E Highway 8. Heating oil AST is likely not in original location				

Inspection Completed By: Summer Zawacky and Carmen Marshall

CHECKLIST FOR ROUTINE INSPECTIONS OF ABOVEGROUND STORAGE TANKS

Location: BC 215 Shulus Road AST 1

Date: 09/27/2010

Tank Size: 1350 L

Distance from Buildings or other tanks: > 10m

Stain Area: None

Tank ID #:

Question					Comments/Observations
Tanks, pipes and dispensing stations are appropriately labeled, with labels in good condition.				N	Label reads "Clear Regular"
Tank support structure and vents are free of rust, weeps, wet spots, or excessive dents on the tank's surface.				Y	
Tank is free of drips or signs of leakage around valves, piping and gauges.				Y	
Tank gauges are in good repair, with no evidence of cracking, sticking or freezing.				-	No gauges
Tank fill pipe is free of blockage and in good condition.				Y	
Tank vents are in good repair and free of obstructions (e.g.: ice or snow)				Y	Not in original location
Automatic shutoff devices, overfill alarms, float valves and similar spill prevention equipment operating are in good repair				-	No alarms, nozzle in good working order
Tank and pipe coating is in good condition.				Y	Some rusting on tank
Corrosion protection and grounding systems are functioning properly and in good repair.				N	No protection or grounding on tank
Vehicular impact protection measures are in good repair.				N	No fence, surrounding tank
Secondary containment dikes, bunkers and berms are in good repair and free of cracks.				Y	No secondary containment
Drainage valves and pumps are locked in the closed/off position.				N	No locks-Tank is empty
Secondary containment dikes, bunkers and berms are free from debris accumulated water or snow and cracks and corrosion.				N	No secondary containment
Precautionary signs (e.g.: emergency response requirements, "No Smoking" signs) are present and in good repair.				N	Not on tank
Spill prevention measures (i.e.: spill kits) are available and in close proximity?				N	No spill kit
Inventory control records are maintained in accordance with established procedures.				N	Records not collected
Additional Notes:	AST was noted with two adjacent ASTs stacked against a barn at 114 Shulus Road				

Inspection Completed By: Summer Zawacky and Carmen Marshall

CHECKLIST FOR ROUTINE INSPECTIONS OF ABOVEGROUND STORAGE TANKS

Location: BC 215 Shulus Road AST 2

Date: 09/27/2010

Tank Size: 2400 L

Distance from Buildings or other tanks: > 10m

Stain Area: None

Tank ID #:

Question					Comments/Observations
Tanks, pipes and dispensing stations are appropriately labeled, with labels in good condition.				N	No labels, contents unknown
Tank support structure and vents are free of rust, weeps, wet spots, or excessive dents on the tank's surface.				Y	
Tank is free of drips or signs of leakage around valves, piping and gauges.				Y	
Tank gauges are in good repair, with no evidence of cracking, sticking or freezing.				-	No gauges
Tank fill pipe is free of blockage and in good condition.				Y	
Tank vents are in good repair and free of obstructions (e.g.: ice or snow)				Y	Not in original location
Automatic shutoff devices, overfill alarms, float valves and similar spill prevention equipment operating are in good repair				-	No alarms, nozzle in good working order
Tank and pipe coating is in good condition.				Y	Some rusting on tank
Corrosion protection and grounding systems are functioning properly and in good repair.				N	No protection or grounding on tank
Vehicular impact protection measures are in good repair.				N	No fence, surrounding tank
Secondary containment dikes, bunkers and berms are in good repair and free of cracks.				Y	No secondary containment
Drainage valves and pumps are locked in the closed/off position.				N	No locks-Tank is empty
Secondary containment dikes, bunkers and berms are free from debris accumulated water or snow and cracks and corrosion.				N	No secondary containment
Precautionary signs (e.g.: emergency response requirements, "No Smoking" signs) are present and in good repair.				N	Not on tank
Spill prevention measures (i.e.: spill kits) are available and in close proximity?				N	No spill kit
Inventory control records are maintained in accordance with established procedures.				N	Records not collected
Additional Notes:	AST was noted with two adjacent ASTs stacked against a barn at 114 Shulus Road				

Inspection Completed By: Summer Zawacky and Carmen Marshall

CHECKLIST FOR ROUTINE INSPECTIONS OF ABOVEGROUND STORAGE TANKS

Location: BC215 Shulus Road AST 3

Date: 09/27/2010

Tank Size: 1600 L

Distance from Buildings or other tanks: > 10m

Stain Area: None

Tank ID #:

Question					Comments/Observations
Tanks, pipes and dispensing stations are appropriately labeled, with labels in good condition.				N	Only label is "Diesel"
Tank support structure and vents are free of rust, weeps, wet spots, or excessive dents on the tank's surface.				Y	
Tank is free of drips or signs of leakage around valves, piping and gauges.				Y	
Tank gauges are in good repair, with no evidence of cracking, sticking or freezing.				-	No gauges
Tank fill pipe is free of blockage and in good condition.				Y	
Tank vents are in good repair and free of obstructions (e.g.: ice or snow)				Y	Not in original location
Automatic shutoff devices, overfill alarms, float valves and similar spill prevention equipment operating are in good repair				-	No alarms, nozzle in good working order
Tank and pipe coating is in good condition.				Y	Some rusting on tank
Corrosion protection and grounding systems are functioning properly and in good repair.				N	No protection or grounding on tank
Vehicular impact protection measures are in good repair.				N	No fence, surrounding tank
Secondary containment dikes, bunkers and berms are in good repair and free of cracks.				Y	No secondary containment
Drainage valves and pumps are locked in the closed/off position.				N	No locks-Tank is empty
Secondary containment dikes, bunkers and berms are free from debris accumulated water or snow and cracks and corrosion.				N	No secondary containment
Precautionary signs (e.g.: emergency response requirements, "No Smoking" signs) are present and in good repair.				N	Not on tank
Spill prevention measures (i.e.: spill kits) are available and in close proximity?				N	No spill kit
Inventory control records are maintained in accordance with established procedures.				N	Records not collected
Additional Notes:	AST was noted with two adjacent ASTs stacked against a barn at 114 Shulus Road				

Inspection Completed By: Summer Zawacky and Carmen Marshall

LIQUID STORAGE INFORMATION ON BOROBN TORONT

Liquor Licence 2 T 1

092

2010

Tank Capacity 9000L

BoroBn

1

Tank ID 00009

Inspection Item	Pass	Fail	Not Inspected	Notes
Tanks, pipes and dispensing stations are appropriately labeled, with labels in good condition.			Y	Diesel
Tank support structure and vents are free of rust, weeps, wet spots, or excessive dents on the tank's surface.			Y	
Tank is free of drips or signs of leakage around valves, piping and gauges.			Y	
Tank gauges are in good repair, with no evidence of cracking, sticking or freezing.			Y	
Tank fill pipe is free of blockage and in good condition.			Y	
Tank vents are in good repair and free of obstructions (e.g.: ice or snow)			Y	
Automatic shutoff devices, overfill alarms, float valves and similar spill prevention equipment operating are in good repair			Y	
Tank and pipe coating is in good condition.			Y	
Corrosion protection and grounding systems are functioning properly and in good repair.			Y	Tank sits on a concrete pad
Vehicular impact protection measures are in good repair.			Y	Tank is surrounded by a steel fence
Secondary containment dikes, bunkers and berms are in good repair and free of cracks.			Y	Small stain on concrete below nozzle
Drainage valves and pumps are locked in the closed/off position.			Y	
Secondary containment dikes, bunkers and berms are free from debris accumulated water or snow and cracks and corrosion.			Y	
Precautionary signs (e.g.: emergency response requirements, "No Smoking" signs) are present and in good repair.			Y	
Spill prevention measures (i.e.: spill kits) are available and in close proximity?			Y	Spill kit 1m away
Inventory control records are maintained in accordance with established procedures.			Y	Registry records on tanks
Additional Notes:	Tank is currently used for Gas station (Johnny's on the Rez), area fenced, not able to take size measurements of tanks.			

Inspection Date: BoroBn

LIQUID STORAGE INFORMATION ON BORON TERN

Liquor License 2

092

2010

Tax ID 000L

B

Tax ID 000091 000009

N

<input type="checkbox"/>					<input type="checkbox"/>
Tanks, pipes and dispensing stations are appropriately labeled, with labels in good condition.				Y	Gasoline
Tank support structure and vents are free of rust, weeps, wet spots, or excessive dents on the tank's surface.				Y	
Tank is free of drips or signs of leakage around valves, piping and gauges.				Y	
Tank gauges are in good repair, with no evidence of cracking, sticking or freezing.				Y	
Tank fill pipe is free of blockage and in good condition.				Y	
Tank vents are in good repair and free of obstructions (e.g.: ice or snow)				Y	
Automatic shutoff devices, overfill alarms, float valves and similar spill prevention equipment operating are in good repair				Y	
Tank and pipe coating is in good condition.				Y	
Corrosion protection and grounding systems are functioning properly and in good repair.				Y	Tank sits on a concrete pad
Vehicular impact protection measures are in good repair.				Y	Tank is surrounded by a steel fence
Secondary containment dikes, bunkers and berms are in good repair and free of cracks.				Y	Tank is new, double-walled
Drainage valves and pumps are locked in the closed/off position.				Y	
Secondary containment dikes, bunkers and berms are free from debris accumulated water or snow and cracks and corrosion.				Y	
Precautionary signs (e.g.: emergency response requirements, "No Smoking" signs) are present and in good repair.				Y	
Spill prevention measures (i.e.: spill kits) are available and in close proximity?				Y	Spill kit 1m away
Inventory control records are maintained in accordance with established procedures.				Y	Registry records on tanks
Additional Notes:	Tank is currently used for Gas station (Johnny's on the Rez), area fenced				

B

CHECKLIST FOR ROUTINE INSPECTIONS OF ABOVEGROUND STORAGE TANKS

Location: Lot 183 Abandoned Gas Station AST 1

Date: 09/27/2010

Tank Size: 5000L

Distance from Buildings or other tanks: > 800m SW of Gas station

Stain Area: no visible staining or odour

Tank ID #:

Question					Comments/Observations
Tanks, pipes and dispensing stations are appropriately labeled, with labels in good condition.				N	One MSDS Label
Tank support structure and vents are free of rust, weeps, wet spots, or excessive dents on the tank's surface.				N	Little rust
Tank is free of drips or signs of leakage around valves, piping and gauges.				N	Some weep on line to generators
Tank gauges are in good repair, with no evidence of cracking, sticking or freezing.				N	No gauges
Tank fill pipe is free of blockage and in good condition.				Y	
Tank vents are in good repair and free of obstructions (e.g.: ice or snow)				Y	
Automatic shutoff devices, overfill alarms, float valves and similar spill prevention equipment operating are in good repair				N	No alarms
Tank and pipe coating is in good condition.				Y	
Corrosion protection and grounding systems are functioning properly and in good repair.				Y	Tank sits on a concrete pad
Vehicular impact protection measures are in good repair.				N	Tanks is located in an empty farm field
Secondary containment dikes, bunkers and berms are in good repair and free of cracks.				Y	
Drainage valves and pumps are locked in the closed/off position.				Y	
Secondary containment dikes, bunkers and berms are free from debris accumulated water or snow and cracks and corrosion.				Y	
Precautionary signs (e.g.: emergency response requirements, "No Smoking" signs) are present and in good repair.				N	MSDS is only sign 1202
Spill prevention measures (i.e.: spill kits) are available and in close proximity?				N	Not in use
Inventory control records are maintained in accordance with established procedures.				N	Not in use
Additional Notes:	Tank is currently not used, was previous tank for Gas station (Johnny's on the Rez)				

Inspection Completed By: Summer Zawacky and Carmen Marshall

CHECKLIST FOR ROUTINE INSPECTIONS OF ABOVEGROUND STORAGE TANKS

Location: Lot 183 Abandoned Gas Station AST 2

Date: 09/27/2010

Tank Size: 13,000L

Distance from Buildings or other tanks: > 800m SW of Gas station

Stain Area: no visible staining or odor

Tank ID #:

Question					Comments/Observations
Tanks, pipes and dispensing stations are appropriately labeled, with labels in good condition.				N	One MSDS Label
Tank support structure and vents are free of rust, weeps, wet spots, or excessive dents on the tank's surface.				N	Little rust
Tank is free of drips or signs of leakage around valves, piping and gauges.				N	Some weep on line to generators
Tank gauges are in good repair, with no evidence of cracking, sticking or freezing.				N	No gauges
Tank fill pipe is free of blockage and in good condition.				Y	
Tank vents are in good repair and free of obstructions (e.g.: ice or snow)				Y	
Automatic shutoff devices, overfill alarms, float valves and similar spill prevention equipment operating are in good repair				N	No alarms
Tank and pipe coating is in good condition.				Y	
Corrosion protection and grounding systems are functioning properly and in good repair.				Y	Tank sits on a concrete pad
Vehicular impact protection measures are in good repair.				N	Tanks is located in an empty farm field
Secondary containment dikes, bunkers and berms are in good repair and free of cracks.				Y	
Drainage valves and pumps are locked in the closed/off position.				Y	
Secondary containment dikes, bunkers and berms are free from debris accumulated water or snow and cracks and corrosion.				Y	
Precautionary signs (e.g.: emergency response requirements, "No Smoking" signs) are present and in good repair.				N	MSDS is only sign 1202
Spill prevention measures (i.e.: spill kits) are available and in close proximity?				N	Not in use
Inventory control records are maintained in accordance with established procedures.				N	Not in use
Additional Notes:	Tank is currently not used, was previous tank for Gas station (Johnny's on the Rez)				

Inspection Completed By: Summer Zawacky and Carmen Marshall

CHECKLIST FOR ROUTINE INSPECTIONS OF ABOVEGROUND STORAGE TANKS

Location: Lot 12 AST

Date: 09/30/2010

Tank Size: 900L

Distance from Buildings or other tanks: > 1.0m

Stain Area: No odor or staining

Tank ID #:

Question					Comments/Observations
Tanks, pipes and dispensing stations are appropriately labeled, with labels in good condition.				N	No labels
Tank support structure and vents are free of rust, weeps, wet spots, or excessive dents on the tank's surface.				N	Tank rusting
Tank is free of drips or signs of leakage around valves, piping and gauges.				Y	No weeping, no hoses intact
Tank gauges are in good repair, with no evidence of cracking, sticking or freezing.				N	No gauges
Tank fill pipe is free of blockage and in good condition.				Y	
Tank vents are in good repair and free of obstructions (e.g.: ice or snow)				Y	
Automatic shutoff devices, overfill alarms, float valves and similar spill prevention equipment operating are in good repair				N	No alarms
Tank and pipe coating is in good condition.				N	Tank is rusting slightly
Corrosion protection and grounding systems are functioning properly and in good repair.				N	No grounding system or corrosive protection
Vehicular impact protection measures are in good repair.				Y	Surrounded by fence
Secondary containment dikes, bunkers and berms are in good repair and free of cracks.				N	No secondary containment
Drainage valves and pumps are locked in the closed/off position.				N	No locks
Secondary containment dikes, bunkers and berms are free from debris accumulated water or snow and cracks and corrosion.				N	No secondary containment
Precautionary signs (e.g.: emergency response requirements, "No Smoking" signs) are present and in good repair.				N	No Visible signs
Spill prevention measures (i.e.: spill kits) are available and in close proximity?				N	Not in use
Inventory control records are maintained in accordance with established procedures.				N	Not in use
Additional Notes:	Partially full but not in use as advised by owner. AST was observed at 238 Nawashaskin Lane.				

Inspection Completed By: Summer Zawacky and Carmen Marshall

CHECKLIST FOR ROUTINE INSPECTIONS OF ABOVEGROUND STORAGE TANKS

Location: Lot 197 AST

Date: 09/30/2010

Tank Size: 900L

Distance from Buildings or other tanks: > 15.0m

Stain Area: unknown, no access

Tank ID #:

Question					Comments/Observations
Tanks, pipes and dispensing stations are appropriately labeled, with labels in good condition.				N	Unknown contents
Tank support structure and vents are free of rust, weeps, wet spots, or excessive dents on the tank's surface.				Y	Some rust
Tank is free of drips or signs of leakage around valves, piping and gauges.				Y	Weeping at Nozzle
Tank gauges are in good repair, with no evidence of cracking, sticking or freezing.				Y	
Tank fill pipe is free of blockage and in good condition.				Y	
Tank vents are in good repair and free of obstructions (e.g.: ice or snow)				Y	
Automatic shutoff devices, overflow alarms, float valves and similar spill prevention equipment operating are in good repair				N	No alarms
Tank and pipe coating is in good condition.				N	Tank is rusted in moderate condition
Corrosion protection and grounding systems are functioning properly and in good repair.				N	Both not on tank
Vehicular impact protection measures are in good repair.				N	No protection
Secondary containment dikes, bunkers and berms are in good repair and free of cracks.				N	No secondary containment
Drainage valves and pumps are locked in the closed/off position.				N	No visible locks
Secondary containment dikes, bunkers and berms are free from debris accumulated water or snow and cracks and corrosion.				N	No secondary containment
Precautionary signs (e.g.: emergency response requirements, "No Smoking" signs) are present and in good repair.				Y	No visible signs
Spill prevention measures (i.e.: spill kits) are available and in close proximity?				N	Not noted
Inventory control records are maintained in accordance with established procedures.				Y	Records not retrieved
Additional Notes:	AST was observed at 2196 Highway 8. No access was provided to the property – home owner not home, and AST was not on original list of Sites.				

Inspection Completed By: Summer Zawacky and Carmen Marshall

CHECKLIST FOR ROUTINE INSPECTIONS OF ABOVEGROUND STORAGE TANKS

Location: School AST

Date: 09/30/2010

Tank Size: 24 000L

Distance from Buildings or other tanks: > 2.0m

Stain Area: No odor or staining

Tank ID #:

Question					Comments/Observations
Tanks, pipes and dispensing stations are appropriately labeled, with labels in good condition.				Y	
Tank support structure and vents are free of rust, weeps, wet spots, or excessive dents on the tank's surface.				Y	
Tank is free of drips or signs of leakage around valves, piping and gauges.				Y	
Tank gauges are in good repair, with no evidence of cracking, sticking or freezing.				Y	
Tank fill pipe is free of blockage and in good condition.				Y	
Tank vents are in good repair and free of obstructions (e.g.: ice or snow)				Y	
Automatic shutoff devices, overfill alarms, float valves and similar spill prevention equipment operating are in good repair				Y	
Tank and pipe coating is in good condition.				Y	Tank is new and double walled
Corrosion protection and grounding systems are functioning properly and in good repair.				Y	
Vehicular impact protection measures are in good repair.				Y	Surrounded by a chain link fence
Secondary containment dikes, bunkers and berms are in good repair and free of cracks.				Y	
Drainage valves and pumps are locked in the closed/off position.				Y	
Secondary containment dikes, bunkers and berms are free from debris accumulated water or snow and cracks and corrosion.				Y	
Precautionary signs (e.g.: emergency response requirements, "No Smoking" signs) are present and in good repair.				Y	No Visible signs
Spill prevention measures (i.e.: spill kits) are available and in close proximity?				N	Not noted
Inventory control records are maintained in accordance with established procedures.				Y	Records not retrieved
Additional Notes:	School AST				

Inspection Completed By: Summer Zawacky and Carmen Marshall

CHECKLIST FOR ROUTINE INSPECTIONS OF ABOVEGROUND STORAGE TANKS

Location: Lot 200 AST 1

Date: 09/27/2010

Tank Size: 4500 L

Distance from Buildings or other tanks: > 10m

Stain Area: 0.5 m diameter stain

Tank ID #:

Question					Comments/Observations
Tanks, pipes and dispensing stations are appropriately labeled, with labels in good condition.				N	No Labels
Tank support structure and vents are free of rust, weeps, wet spots, or excessive dents on the tank's surface.				N	Weeping at Bung
Tank is free of drips or signs of leakage around valves, piping and gauges.				N	Weeping at Bung, stain below
Tank gauges are in good repair, with no evidence of cracking, sticking or freezing.				-	No gauges
Tank fill pipe is free of blockage and in good condition.				Y	
Tank vents are in good repair and free of obstructions (e.g.: ice or snow)				Y	
Automatic shutoff devices, overfill alarms, float valves and similar spill prevention equipment operating are in good repair				-	No alarms, nozzle in good working order
Tank and pipe coating is in good condition.				Y	
Corrosion protection and grounding systems are functioning properly and in good repair.				N	No protection or grounding on tank
Vehicular impact protection measures are in good repair.				N	No fence surrounding tank
Secondary containment dikes, bunkers and berms are in good repair and free of cracks.				Y	No secondary containment
Drainage valves and pumps are locked in the closed/off position.				N	No locks-Tank is empty
Secondary containment dikes, bunkers and berms are free from debris accumulated water or snow and cracks and corrosion.				N	No secondary containment
Precautionary signs (e.g.: emergency response requirements, "No Smoking" signs) are present and in good repair.				N	Not on tank
Spill prevention measures (i.e.: spill kits) are available and in close proximity?				N	No spill kit
Inventory control records are maintained in accordance with established procedures.				N	Records not collected
Additional Notes:	AST observed adjacent to two other ASTs at residence on Fyall Road. Empty tidy tank is adjacent and not in use.				

Inspection Completed By: Summer Zawacky and Carmen Marshall

CHECKLIST FOR ROUTINE INSPECTIONS OF ABOVEGROUND STORAGE TANKS

Location: Lot 200 AST 2 (Red tank)

Date: 09/27/2010

Tank Size: 1200 L

Distance from Buildings or other tanks: > 10m

Stain Area: 0.5m diameter stain

Tank ID #:

Question					Comments/Observations
Tanks, pipes and dispensing stations are appropriately labeled, with labels in good condition.				N	"Clear Regular" only sticker
Tank support structure and vents are free of rust, weeps, wet spots, or excessive dents on the tank's surface.				N	Rusted vents
Tank is free of drips or signs of leakage around valves, piping and gauges.				N	Weeping bung, stain below
Tank gauges are in good repair, with no evidence of cracking, sticking or freezing.				-	No gauges
Tank fill pipe is free of blockage and in good condition.				Y	
Tank vents are in good repair and free of obstructions (e.g.: ice or snow)				Y	
Automatic shutoff devices, overfill alarms, float valves and similar spill prevention equipment operating are in good repair				-	No alarms, nozzle in good working order
Tank and pipe coating is in good condition.				Y	Some rusting on tank
Corrosion protection and grounding systems are functioning properly and in good repair.				N	No protection or grounding on tank
Vehicular impact protection measures are in good repair.				N	No fence, surrounding tank
Secondary containment dikes, bunkers and berms are in good repair and free of cracks.				Y	No secondary containment
Drainage valves and pumps are locked in the closed/off position.				N	No locks-Tank is empty
Secondary containment dikes, bunkers and berms are free from debris accumulated water or snow and cracks and corrosion.				N	No secondary containment
Precautionary signs (e.g.: emergency response requirements, "No Smoking" signs) are present and in good repair.				N	Not on tank
Spill prevention measures (i.e.: spill kits) are available and in close proximity?				N	No spill kit
Inventory control records are maintained in accordance with established procedures.				N	Records not collected
Additional Notes:	AST observed adjacent to two other ASTs at residence on Fyall Road. Empty tidy tank is adjacent and not in use.				

Inspection Completed By: Summer Zawacky and Carmen Marshall

CHECKLIST FOR ROUTINE INSPECTIONS OF ABOVEGROUND STORAGE TANKS

Location: Lot 200 AST 3 (Diesel)

Date: 09/27/2010

Tank Size: 2300 L

Distance from Buildings or other tanks: > 10m

Stain Area: 0.5m diameter stain below

Tank ID #:

Question					Comments/Observations
Tanks, pipes and dispensing stations are appropriately labeled, with labels in good condition.				N	"Diesel" only sticker
Tank support structure and vents are free of rust, weeps, wet spots, or excessive dents on the tank's surface.				N	Rusted vents
Tank is free of drips or signs of leakage around valves, piping and gauges.				N	Fueling hose is taped up, stain below
Tank gauges are in good repair, with no evidence of cracking, sticking or freezing.				-	No gauges
Tank fill pipe is free of blockage and in good condition.				Y	
Tank vents are in good repair and free of obstructions (e.g.: ice or snow)				Y	
Automatic shutoff devices, overfill alarms, float valves and similar spill prevention equipment operating are in good repair				-	No alarms, nozzle in good working order
Tank and pipe coating is in good condition.				Y	Some rusting on tank
Corrosion protection and grounding systems are functioning properly and in good repair.				N	No protection or grounding on tank
Vehicular impact protection measures are in good repair.				N	No fence, surrounding tank
Secondary containment dikes, bunkers and berms are in good repair and free of cracks.				Y	No secondary containment
Drainage valves and pumps are locked in the closed/off position.				N	No locks-Tank is empty
Secondary containment dikes, bunkers and berms are free from debris accumulated water or snow and cracks and corrosion.				N	No secondary containment
Precautionary signs (e.g.: emergency response requirements, "No Smoking" signs) are present and in good repair.				N	Not on tank
Spill prevention measures (i.e.: spill kits) are available and in close proximity?				N	No spill kit
Inventory control records are maintained in accordance with established procedures.				N	Records not collected
Additional Notes:	AST observed adjacent to two other ASTs at residence on Fyall Road. Empty tidy tank is adjacent and not in use.				

Inspection Completed By: Summer Zawacky and Carmen Marshall