



**NWB LICENCE No. 2BE-PBP1520 – Amendment No. 1**

**2019 REPORT OF ACTIVITIES**

## TABLE OF CONTENTS

	Page
Executive Summary of Report on 2018 Activities- - - - -	1
Executive Summary-Inuktitut - - - - -	3
Excel NWB Annual Report - - - - -	6
Detailed Summary of Activities as per Item 2 of PART B - - - - -	11
Map of Property Claims, Exploration Targets and Camp Location - - - - -	13
Sketch Map of Camp Layout - - - - -	14
Appendix 1 – TABLES RECORDING WATER USE AND GARBAGE DISPOSAL - - - - -	15
- Daily Camp Water Use Record - 2018 - - - - -	16
- Daily Diamond Drilling Water Use Record – 2019 - - - - -	20
- Hamlet of Whale Cove Letter: Waste Management for Nordgold's Camp - - - - -	23
- Garbage Disposal Records - - - - -	24
Appendix 2 WILDLIFE LOG - - - - -	26
Appendix 3 Hamlet of Whale Cove Letter: Storage of Containers - - - - -	28
Appendix 4 PHOTOGRAPHS OF JET A-1 FUEL IN BERMS AND PROPANE STORED FOR WINTER - - - - -	29
Appendix 5 SPILL CONTINGENCY PLAN - - - - -	32
Appendix 6 ABANDONMENT AND RESTORATION PLAN- - - - -	74
Appendix 7 PHOTOGRAPHS OF PISTOL BAY CAMP AND PUMP SITE - - - - -	83
Appendix 8 PHOTOGRAPHS OF DRILL SITES BEFORE, DURING AND AFTER DRILLING - - - - -	85
Appendix 9 PHOTOGRAPHS OF DRILL WATER PUMPS AT WATER SOURCES - - - - -	93

## List of Figures

Figure 1.	Claim Map, Exploration Targets and Camp Location. - - - - -	13
Figure 2.	Sketch Map of Camp Layout. - - - - -	14
Figure 3.	Fuel berm Number 1, at the camp generator shack, with diesel gasoline, waste oil and water heater fuel stored for the winter. - - - - -	30
Figure 4.	Fuel berm Number 2, near generator, with Jet A-1 fuel stored for the winter. - - - - -	30
Figure 5.	Propane cylinders stored at the Pistol Bay camp. - - - - -	31
Figure 6.	Aerial View of the Pistol Bay Camp and water source - - - - -	84
Figure 7.	View of the Pistol Bay Camp water pump installation - - - - -	84
Figure 8.	Photo of pre-drilling collar site for DDH 19PB072. - - - - -	85
Figure 9.	Photo after drilling for collar site of DDH 19PB072. - - - - -	85
Figure 10.	Photo of pre drilling collar site for DDH 19PB073. - - - - -	86
Figure 11.	Photo of DDH 19PB074 drilling in progress. - - - - -	86
Figure 12.	Photo of DDH 19PB075 drilling in progress. - - - - -	87
Figure 13.	Photo of after drilling collar site of DDH 19PB975 and DDH 19PB079 drilling in progress. - - - - -	87
Figure 14.	Photo of collar site of DDH 19PB075 after drilling. - - - - -	88

Figure 15.	Photo of DDH 19PB076A drilling in progress.	-	-	-	-	89
Figure 16.	Photo of pre-drilling collar site for DDH 19PB077.	-	-	-	-	89
Figure 17.	Photo of DDH 19PB077 drilling in progress.	-	-	-	-	90
Figure 18.	Photo of DDH 19PB078 drilling in progress.	-	-	-	-	90
Figure 19.	Photo of DDH 19PB079 drilling in progress.	-	-	-	-	91
Figure 20.	Photo of DDH 19PB080 drilling in progress.	-	-	-	-	91
Figure 21.	Photo of pre drilling collar site for DDH 19PB081.	-	-	-	-	92
Figure 22.	Photo of water pump site for DDH 19PB072.-	-	-	-	-	93
Figure 23.	Photo of water pump site for DDH 19PB073.-	-	-	-	-	93
Figure 24.	Photo of water pump site for DDH 19PB074.-	-	-	-	-	94
Figure 25.	Photo of water pump site for DDH 19PB075.-	-	-	-	-	94
Figure 26.	Photo of water pump site for DDH 19PB076 and DDH 19PB076A.	-	-	-	-	95
Figure 27.	Photo of water pump site for DDH 19PB077.-	-	-	-	-	95
Figure 28.	Photo of water pump site for DDH 19PB078.-	-	-	-	-	96
Figure 29.	Photo of water pump site for DDH 19PB079.-	-	-	-	-	96
Figure 30.	Photo of water pump site for DDHs 19PB080 and 19PB081.	-	-	-	-	97

## **Water Licence 2BE-PBP1520 – Amendment No. 1 Northquest Ltd.**

### **Executive Summary of Report on 2019 Activities**

The Pistol Bay Project camp was opened on June 16<sup>th</sup> by Nordgold (Northquest Ltd.) personnel.

The camp is comprised of turn-key style Weatherhaven tents for accommodation, office and storage as well as plywood buildings for the kitchen, core logging facility, generator shacks and drillers' change room ("dry"). As a result, only a few hours of work were required to make the camp fully operational. The camp was in operation from June 16<sup>th</sup> to August 4<sup>th</sup> and from August 12<sup>th</sup> to September 8<sup>th</sup> 2019.

The number of personnel in camp reached a maximum of 23 during the busiest portion of the program. Personnel consisted, from time to time, of four geologists, two surveyors, one camp manager, three pilots, two helicopter engineers, nine diamond drillers, two diamond drill foremen, one communications technician, eight camp/field assistants, two kitchen staff that also served as the qualified medic and two INAC representatives. Due to duration requirements for some activities not all of the personnel listed herein were present all of the time.

Matrix Aviation Solutions Inc., ("Matrix") was contracted to provide the camp cooks that also served as the qualified medics. A CasCom technician re-established the on-site communications system.

The camp/field assistants were hired from Whale Cove. A total of eight Whale Cove residents were used to fill these positions at various times during the field season.

The F250 pick-up truck, that has been on-site since 2013, was utilized to make trips to Whale Cove to deliver garbage and pick up groceries and fuel. As well, it was utilized to transport locally hired employees during crew rotations.

The pick-up truck and ATVs were also used by field crews to access areas being worked by travel on well-established roads and trails.

An A-Star B2 helicopter owned and operated by Custom Helicopters ("Custom") was used to transport all drills and personnel during the program.

Diamond drilling by Top Rank Management Services Ltd., occurred between June 24<sup>th</sup> and July 27<sup>th</sup> as well as August 17<sup>th</sup> to September 5<sup>th</sup> on the Vickers target. Two Discovery 2 drill rigs were used during the period of June 24<sup>th</sup> to July 9<sup>th</sup>; one drill rig was used subsequent to July 9<sup>th</sup>. Double-walled fuel tanks were used on the drill. A total of 4,608 metres was completed in 11 diamond drill holes, including one that was abandoned and re-drilled within one metre of the original collar site.

Upon completion of the 2019 drill program, the two Discovery 2 drills were stored on the site of their respective last hole drilled.

The camp drew drinking and wash water from a nearby pond. A total of 66.97 cubic metres of water were utilized during the 73 days of operation. Camp water consumption averaged 0.917 cubic metres per day.

The drilling operation drew water from a total of six small lakes on the Vickers prospect. A total of 4,239 cubic metres of water was pumped from these lakes. The drill(s) was operational for a total of 55 days and consumed an average of 77.073 cubic metres per day.

All non-hazardous waste including most paper and cardboard was transported to the Whale Cove municipal dump by truck every few days during the program.

One hundred twenty six 50 kg bags of CaCl are stored inside a Weatherhaven tent on the Vickers Prospect. This tent is also used for storage of other equipment, and serves as an emergency shelter for personnel working on the Vickers Prospect.

A total of 42 drums of Jet A-1 fuel, four drums of fuel suitable for use in drill water heaters, four drums of waste oil, one drum of gasoline and 15 empty drums are currently stored near the base camp generator in a tarpaulin covered fuel berm.

There are a total of 147 full 100 lb propane cylinders, 31 partial 100 lb propane cylinders, and 202 empty 100 lb propane cylinders stored at the base camp.

In addition, a total of 66 drums of Jet A-1 fuel are currently stored in a second tarpaulin covered fuel berm in the vicinity of the base camp generator.

A total of 83 empty fuel drums are stored as follows: 21 in a sea container in Whale Cove, 25 in the storage tent, 22 near the camp generator and 15 in a berm, as noted above. An additional 163 crushed drums are stored in a sea container in Whale Cove.

Each of the two diesel generators has their own double-walled fuel supply tank and each is approximately half full with an estimated 75 imperial gallons. In addition, three full drums of diesel fuel are stored in a berm inside the shack housing the older generator.

Written authorization allowing Northquest Ltd., to store empty fuel drums and drums containing waste oil at the Whale Cove airport was obtained from the Hamlet of Whale Cove on March 16, 2016; written authorization is presented herein on page 28. No drums or propane cylinders were stored there at any time in 2019.

All grey-water generated in camp was dumped into a sump containing perforated drums and rocks within a pit dug in sand.

Sewage was contained in pits dug beneath the three outhouses.

No unauthorized discharges occurred in 2019.

A log of wildlife observations was made during the 2019 field season and is included herein.

A legal survey of the boundaries of eight claims was completed during the 2019 field season.

ΔΛΓΓΥ ΓΔΥΠ 2BE-PBP1520 - ΔΙΟΡΙΣΜΟΣ ΣΥΝΟΧΗΣ 1 ΣΥΝΟΧΗΣ ΓΕΩΓΡΑΦΙΚΗΣ

၁၃၁ နှစ် ၂၀၁၉-၂၀၂၀ ခုနှစ်

[illegible][illegible][illegible][illegible][illegible][illegible][illegible][illegible][illegible]

Λ<σ<sup>u</sup>LC 2019 ΔdCΔσ<sup>r</sup>Γ<sup>c</sup>, L<sup>s</sup>ḡ<sup>b</sup> ΔdĈ<sup>b</sup> ጋፍፅፍር፲ረ፲፭ጋር Δσ፲ዝፎ ፆሃይሮፍ<ፎ  
ΔdĈΔ<sup>e</sup>፳፻፲፯፲፭ጋፎ.

ርኚኛል፡፡ ለፍርኖኔርረፍጋፍ ላሊጋ ለፍጋጠፍ ለፍግፍ ፍፁጋግ ርገኖኛ፡፡ ከጋፍጋግ  
 66.97 ምላፍ ፍግፍ ላሊጋፍ 73 ምላፍ ላሊጋፍ፡፡ ርኚኛል፡፡  
 ለፍጋፍፍ ከፍጋግ ላሊጋፍ 0.917 ምላፍ ፍጋፍፍ ምላፍ፡፡

[illegible][illegible][illegible][illegible]

ከጋህርኤጋቦር 147 ርርኤጋር 100 <ፊሰር >ረፈር, 31 ርርኤጋቦር 100 <ፊሰር >ረፈር, ለዚህ  
 202 ልጋርኤጋቦር 100 <ፊሰር >ረፈር ጋህርኤጋቦር ርርኤጋቦር.

[illegible]

ከጋህርጅ 83 ልጅ የሆኑትን የህግ ልማት ልማት፡ 21 ስራውን በየሰዓቱ፣  
25 ጋህርጅ፣ 22 የህግ ልማት ስራውን በሰዓቱ ልማት 15 ልማት፣ ስራውን ለማድረግ  
ሚችሉ፡ 163-ኛውን የህግ ልማት ስራውን በየሰዓቱ፣

[illegible][illegible]

ፖሊሲዎችን በፍጥነት ለማሻሻልና ለማረጋገጥ ማህበራዊና ስራ ምክንያቶችን በጥንቃቄ ማረጋገጥ ይቻላል።

[illegible]

ᐃᖃᓯᖃᑕᐅᓯᒐᓐᓯᓯᓂᖃ ᐃᐱᓯᐱᓯᓂᓐᑕᓐᑕᐅᖃᓯᓂᓂᖃ 2019-ᓯᓯ.

በበዓል ልማት ማረጋገጫ ስራ ላይ የተሳተፉት ሰራተኛ ሰዎች 2019-2020 ለጥራት ልማት ስራ ላይ ተሳትፈው ይገኛሉ፡፡

ፊርማዎን በዚህ ሪፖርት ላይ ያስቀመጡ፡



**NWB Annual Report****Year being reported:**

2019

Select ▼

**License No:**

2BE-PBP1520/Amendment No.1

**Issued Date:**

July 27, 2017

**Expiry Date:**

July 22, 2020

**Project Name:**

Pistol Bay

**Licensee:**

Northquest Ltd.

**Mailing Address:**

Suite 301 - 82 Richmond Street East  
 Toronto  
 Ontario, Canada  
 M5C 1P1

**Name of Company filing Annual Report (if different from Name of Licensee please****General Background Information on the Project (\*optional):****Licence Requirements: the licensee must provide the following information in accordance with**

Select ▼ Select ▼

**A summary report of water use and waste disposal activities, including, but not limited to: methods of obtaining water; sewage and greywater management; drill waste management; solid and hazardous waste management.**

Water Source(s):

Water Quantity:

5.00 / day

0.917 / day

300.00 / day

77.073 / day

Quantity Allowable Domestic (cu.m)

Actual Quantity Used Domestic (cu.m)

Quantity Allowable Drilling (cu.m)

Total Quantity Used Drilling (cu.m)

**Waste Management and/or Disposal**☐ Solid Waste Disposal☐ Sewage☐ Drill Waste☐ Greywater☐ Hazardous☐ Other:

Additional Details:

**A list of unauthorized discharges and a summary of follow-up actions taken.**

Spill No.:  (as reported to the Spill Hot-line)

Date of Spill:

Date of Notification to an Inspector:

Additional Details: (impacts to water, mitigation measures, short/long term monitoring, etc)

**Revisions to the Spill Contingency Plan**

Select

**Revisions to the Abandonment and Restoration Plan**

Select



Additional Details:

**Progressive Reclamation Work Undertaken**

Additional Details (i.e., work completed and future works proposed)

**Results of the Monitoring Program including:**

The GPS Co-ordinates (in degrees, minutes and seconds of latitude and longitude) of each location where sources of water are utilized;

Select



Additional Details:

**The GPS Co-ordinates (in degrees, minutes and seconds of latitude and longitude) of each location where wastes associated with the licence are deposited;**

Additional Details:

**Results of any additional sampling and/or analysis that was requested by an Inspector**

Additional Details: (date of request, analysis of results, data attached, etc)

**Any other details on water use or waste disposal requested by the Board by November 1 of the year being reported.**

Additional Details: (Attached or provided below)

**Any responses or follow-up actions on inspection/compliance reports**

Additional Details: (Dates of Report, Follow-up by the Licensee)

**Any additional comments or information for the Board to consider**

--

**Date Submitted:**

28/11/2019

**Submitted/Prepared by:**

Stanley Robinson

**Contact Information:****Tel:**

1-416-306-0954

**Fax:****email:**[stan.robinson@ca.inter.net](mailto:stan.robinson@ca.inter.net)**GPS Coordinates for water sources utilized**

Source Description	Latitude			Longitude		
	Deg °	Min '	Sec "	Deg °	Min '	Sec "
Camp Water	62	20	58.00	92	44	47.00
For DDH 19PB072	62	19	27.046	92	50	58.192
For DDH 19PB073	62	19	26.358	92	50	48.817
For DDH 19PB074	62	19	29.543	92	50	36.088
For DDH 19PB075	62	19	21.289	92	50	53.081
For DDH 19PB076	62	19	25.906	92	50	49.514
For DDH 19PB076A	62	19	25.906	92	50	49.514
For DDH 19PB077	62	19	31.234	92	51	15.957
For DDH 19PB078	62	19	20.975	92	51	1.557
For DDH 19PB079	62	19	19.498	92	50	40.516
For DDH 19PB080	62	19	21.298	92	51	1.695
For DDH 19PB081	62	19	21.298	92	51	1.695

### GPS Locations of areas of waste disposal

Location Description (type)	Latitude			Longitude		
	Deg °	Min '	Sec "	Deg °	Min '	Sec "
Kitchen and Shower Sump	62	21	0.00	92	44	58.00
Outhouse Pit	62	21	0.80	92	45	0.60
Outhouse Pit	62	21	0.60	92	44	59.90
Outhouse Pit	62	21	0.50	92	44	59.80
For DDH 19PB072 - Sump	62	19	24.978	92	50	57.786
For DDH 19PB073 - Sump	62	19	25.035	92	50	50.491
For DDH 19PB074 - Sump	62	19	30.673	92	50	35.526
For DDH 19PB075 - Sump	62	19	23.026	92	50	45.639
For DDH 19PB076 - Sump	62	19	24.617	92	50	53.064
For DDH 19PB076A - Sump	62	19	24.650	92	50	53.064
For DDH 19PB077 - Sump	62	19	31.450	92	51	6.091
For DDH 19PB078 - Sump	62	19	19.329	92	51	3.719
For DDH 19PB079 - Sump	62	19	21.795	92	50	43.144
For DDH 19PB080 - Sump	62	19	20.948	92	51	6.420
For DDH 19PB081 - Sump	62	19	21.407	92	51	21.407

## Detailed Summary of Activities as per item 2 of PART B

Northquest Ltd's., Pistol Bay camp was in operation from June 16<sup>th</sup> to August 4<sup>th</sup> and from August 12<sup>th</sup> to September 8<sup>th</sup>, 2019. Water was used for the camp and for diamond drilling.

- 2.a. The camp obtained drinking and washing water from a nearby pond and utilized 66.97 cubic metres during the 73 days of operation, averaging 0.917 cubic metres per day based on the daily flow metre readings. A table of the log recording daily use is provided in Appendix 1.

The diamond drills obtained water from six small lakes on the Vickers prospect. A total of 4,239 cubic metres of water was pumped during the 55 days the drills were in operation averaging 77.073 cubic metres per day.

All non-hazardous waste, including some paper and cardboard was transported to the Whale Cove municipal dump by truck every few days during the program. A table of the log recording quantities of trash and dates of transport is provided in Appendix 1.

One hundred twenty six 50 kg bags of Calcium Chloride (CaCl) are stored inside a Weatherhaven tent on the Vickers Prospect. This tent is used for storage of other equipment, and it also serves as an emergency shelter for personnel working on the Vickers Prospect.

A total of 42 drums of Jet A-1 fuel and four drums of fuel suitable for use in drill water heaters, four drums of waste oil and one drum of gasoline as well as 15 empty drums are currently stored at the base camp in a tarpaulin covered fuel berm near the generator.

One hundred forty seven full 100 lb cylinders of propane are currently stored at the northwest corner of the base camp. In addition, thirty one partial, in service, 100 lb cylinders are in various locations in the base camp.

A total of 83 empty fuel drums are stored as follows: 21 in a sea container in Whale Cove, 25 in the storage tent, 22 near the camp generator and 15 in a berm, as noted above. An additional 163 crushed drums are stored in a sea container in Whale Cove.

Each of the two diesel generators has their own fuel supply tank and each is approximately half full with an estimated 75 imperial gallons. In addition, three full drums of diesel fuel are stored inside the shack housing the oldest generator.

66 drums of Jet A-1 fuel are stored in a second tarpaulin covered berm in the vicinity of the generators at the base camp.

202 empty propane cylinders are stored at the north side of the camp.

Written authorization to store empty fuel drums, and drums with waste oil at a designated area at the Whale Cove airport was obtained from the Hamlet of Whale Cove on March 16, 2016 and it is presented herein on page 28; no drums or propane cylinders have been stored there since October 2017.

All grey-water was dumped into a sump containing five perforated drums and rocks within a pit dug in sand.

Sewage was contained in pits dug beneath the outhouses.

- 2.b. No unauthorized discharges occurred in 2019.
- 2.c. Revisions were made to the Spill Contingency Plan and Abandonment and Restoration Plan in 2015, 2017, 2018 and 2019. For the purpose of completeness the plans are provided herein in Appendices 4 and 5 respectively.
- 2.d. Photographs of selected drill hole collar sites before and/or after drilling as well as a photograph of drilling in progress are presented in Appendix 8. Photographs of the drill water pump at the water sources are presented in Appendix 9.
- 2.e. No artesian flow occurrences were noted during the 2019 drilling.
- 2.f. Photographs of the camp water supply pump site are presented in Appendix 7.
- 2.g. Monitoring was not requested. Therefore, no monitoring results are provided.



Stanley D. Robinson, P.Ge



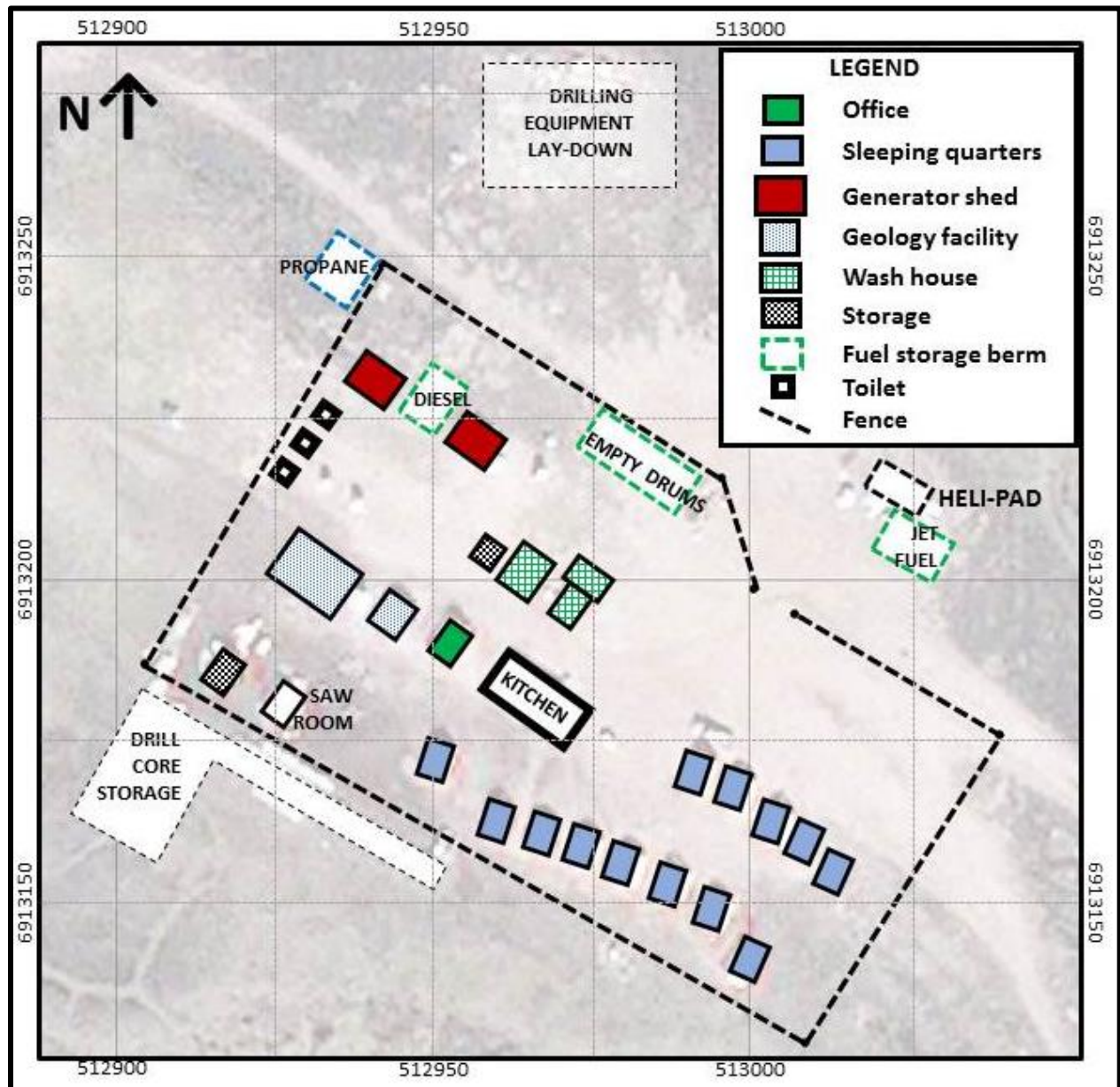
**Sketch Map of Camp Layout**

Figure 2. Sketch Map of Camp Layout.

## **APPENDIX 1**

### **TABLES RECORDING WATER USE AND GARBAGE DISPOSAL**

- DAILY WATER USE RECORDS
  - Camp Water
- DAILY WATER USE RECORDS
  - Diamond Drilling Water
- Hamlet of Whale Cove Letter: Waste Management for Nordgold's Camp
- GARBAGE DISPOSAL RECORDS

**Daily Camp Water Use Record – 2019  
Pistol Bay Project Camp**

**Month of June**

<b>JUNE</b>		<b>Monthly total 6.78 m3</b>		
		<b>Maximum 1.89 m3</b>		
		<b>Average daily use 0.484 m3</b>		
<b>Date</b>	<b>Reading</b>	<b>Net US Gal</b>	<b>Net m<sup>3</sup></b>	<b>Notes</b>
17-Jun	500	500	1.89	camp opened
18-Jun	500	0	0.00	
19-Jun	600	100	0.38	
20-Jun	700	100	0.38	
21-Jun	110	110	0.42	
22-Jun	180	70	0.26	
23-Jun	220	40	0.15	
24-Jun	350	130	0.49	
25-Jun	480	130	0.49	
26-Jun	600	120	0.45	
27-Jun	880	280	1.06	
28-Jun	920	40	0.15	
29-Jun	980	60	0.23	
30-Jun	1090	110	0.42	

**Daily Camp Water Use Record – 2019**  
**Pistol Bay Project Camp** *(continued)*

**Month of July**

<b>JULY</b>		<b>Monthly total 33.31 m3</b>		
		<b>Maximum 2.23 m3</b>		
		<b>Average daily use 1.075 m3</b>		
<b>Date</b>	<b>Reading</b>	<b>Net US Gal</b>	<b>Net m<sup>3</sup></b>	<b>Notes</b>
01-Jul	1230	140	0.53	
02-Jul	1360	130	0.49	
03-Jul	1510	150	0.57	
04-Jul	1640	130	0.49	
05-Jul	1780	140	0.53	
06-Jul	1930	150	0.57	
07-Jul	2150	220	0.83	
08-Jul	2280	130	0.49	
09-Jul	2450	170	0.64	
10-Jul	2630	180	0.68	
11-Jul	2790	160	0.61	
12-Jul	2810	20	0.08	
13-Jul	3150	340	1.29	
14-Jul	3290	140	0.53	
15-Jul	3670	380	1.44	
16-Jul	4090	420	1.59	
17-Jul	4500	410	1.55	
18-Jul	5090	590	2.23	
19-Jul	5500	410	1.55	
20-Jul	5790	290	1.10	
21-Jul	6270	480	1.82	
22-Jul	6750	480	1.82	
23-Jul	7230	480	1.82	
24-Jul	7510	280	1.06	
25-Jul	7880	370	1.40	
26-Jul	8380	500	1.89	
27-Jul	8690	310	1.17	
28-Jul	9250	560	2.12	
29-Jul	9470	220	0.83	
30-Jul	9700	230	0.87	
31-Jul	9890	190	0.72	

**Daily Camp Water Use Record – 2019**  
**Pistol Bay Project Camp** *(continued)*

**Month of August**

AUGUST		Monthly total 19.91 m3		
		Maximum 1.78 m3		
		0.905		
Date	Reading	Net US Gal	Net m <sup>3</sup>	Notes
01-Aug	10060	170	0.64	
02-Aug	10220	160	0.61	Camp closed
03-Aug		0	0.00	
04-Aug		0	0.00	
05-Aug		0	0.00	
06-Aug		0	0.00	
07-Aug		0	0.00	
08-Aug		0	0.00	
09-Aug		0	0.00	
10-Aug		0	0.00	
11-Aug		0	0.00	
12-Aug	10310	90	0.34	Camp opened
13-Aug	10330	20	0.08	
14-Aug	10370	40	0.15	
15-Aug	10520	150	0.57	
16-Aug	10710	190	0.72	
17-Aug	10930	220	0.83	
18-Aug	11110	180	0.68	
19-Aug	11500	390	1.48	
20-Aug	11680	180	0.68	
21-Aug	11920	240	0.91	
22-Aug	12390	470	1.78	
23-Aug	12850	460	1.74	
24-Aug	13260	410	1.55	
25-Aug	13520	260	0.98	
26-Aug	13750	230	0.87	
27-Aug	14080	330	1.25	
28-Aug	14370	290	1.10	
29-Aug	14680	310	1.17	
30-Aug	14950	270	1.02	
31-Aug	15150	200	0.76	

**Daily Camp Water Use Record – 2019**  
**Pistol Bay Project Camp** *(continued)*

**Month of September**

SEPTEMBER		Monthly total 6.97 m3		
		Maximum 1.70 m3		
		Average daily use 1.161 m3		
Date	Reading	Net US Gal	Net m <sup>3</sup>	Notes
01-Sep	15520	370	1.40	
02-Sep	15810	290	1.10	
03-Sep	16060	250	0.95	
04-Sep	16310	250	0.95	
05-Sep	16760	450	1.70	
06-Sep	16990	230	0.87	Camp closing

Total water use was 66.97 cubic metres for an average daily usage amount of 0.917 cubic metres per day.

**Daily Diamond Drill Water Use Record – 2019**  
**Pistol Bay Project**

<b>Diamond Drill Number 1 - PHASE I Drilling</b>					
<b>Date</b>	<b>US Gallons</b>			<b>Net m3</b>	<b>Comments</b>
	<b>Day Shift</b>	<b>Night Shift</b>	<b>24 Hours</b>		
23-Jun					Drill set-up
24-Jun		2845.2	2845.2	10.77	drilling started
25-Jun	6870.9	10750	3879.1	14.68	
26-Jun	13050	23800	13050	49.40	
27-Jun	3546.4	3648	7194.4	27.23	
28-Jun			<b>3480</b>	13.17	
29-Jun	69307.9		0	0.00	weather & equip delay
30-Jun			0	0.00	weather & equip delay
01-Jul	69307.9		0	0.00	weather & equip delay
02-Jul			0	0.00	weather & equip delay
03-Jul			0	0.00	weather & equip delay
04-Jul	69607.3		0	0.00	weather & equip delay
05-Jul	89885.6	<b>100667.6</b>	20278.3	76.76	
06-Jul	110052	120518.3	20166.4	76.34	
07-Jul	130228	140113	20176	76.37	
08-Jul	148321	159723	18093	68.49	
09-Jul	170077	180730	21756	82.36	
10-Jul	187351		17274	65.39	
11-Jul	211567	189148	24216	91.67	
12-Jul	235783		<b>24216</b>	91.67	
13-Jul	259999	275174	<b>24216</b>	91.67	
14-Jul	284215		<b>24216</b>	91.67	
15-Jul	314734		30519	115.53	
16-Jul	345253	<b>199275</b>	30519	115.53	
17-Jul	375773		30520	115.53	
18-Jul		601806	24000	90.85	
19-Jul	688142	779251	24000	90.85	
20-Jul	892547		23000	87.06	
21-Jul			21000	79.49	
22-Jul			<b>21000</b>	79.49	
23-Jul		137374	21000	79.49	
24-Jul	146944	160000	25000	94.64	
25-Jul	175000	190000	28056	106.20	
26-Jul	210000	220000	35000	132.49	
27-Jul	227666		<b>17666</b>	<b>66.87</b>	Drilling suspended

**Daily Diamond Drill Water Use Record – 2019**  
**Pistol Bay Project**  
*(continued)*

<b>Summary Drill #1 - PHASE I Drilling</b>	
Total cubic meters	2181.67
Days	28
Cubic meters per day	77.917

<b>Diamond Drill Number 1 - PHASE II Drilling</b>					
<b>Date</b>	<b>US Gallons</b>			<b>Net m3</b>	<b>Comments</b>
	<b>Day Shift</b>	<b>Night Shift</b>	<b>24 Hours</b>		
16-Aug		227665		29.56	drilling resumed
17-Aug	236607	245845	8942	33.85	
18-Aug	255268	265080	18661	70.64	
19-Aug	274002	284377	18734	70.92	
20-Aug	293865	303735	19863	75.19	
21-Aug	312852	323405	18987	71.87	
22-Aug	332179	342819	19327	73.16	
23-Aug	346293	355201	14114	53.43	
24-Aug	364982	374201	18689	70.75	
25-Aug	384163	394751	19181	72.61	
26-Aug	402851	413005	18688	70.74	
27-Aug	422488	432102	19637	74.33	
28-Aug	441334	450134	18846	71.34	
29-Aug	460238	471483	18904	71.56	
30-Aug	466119		5881	22.26	
31-Aug	472960		6841	25.90	
01-Sep	490992	499051	18032	68.26	
02-Sep	505621	509831	14629	55.38	
03-Sep	516839		11218	42.46	
04-Sep	540362	544881	23523	89.04	
05-Sep	563885		23523	89.04	Drilling ended

<b>Summary – Drill #1 – PHASE II Drilling</b>	
Total cubic meters	1,302.29
Days	21
Cubic meters per day	62.014



**Daily Diamond Drill Water Use Record – 2019**  
**Pistol Bay Project**  
*(continued)*

<b>Diamond Drill Number 2 - PHASE I Drilling</b>					
<b>Date</b>	<b>US Gallons</b>			<b>Net m3</b>	<b>Comments</b>
	<b>Day Shift</b>	<b>Night Shift</b>	<b>24 Hours</b>		
23-Jun					
24-Jun	8333.74		177.6	0.67	Drilling started
25-Jun	18052.7	996	10714.96	40.56	
26-Jun	8667	4680	13347	50.52	
27-Jun	4700	4260	8960	33.92	
28-Jun	58974	62403	<b>3429</b>	12.98	
29-Jun	110276		10276	38.90	
30-Jun	121269	<b>121269</b>	10993	41.61	
01-Jul	130000	135000	13731	51.98	
02-Jul	141381	150000	15000	56.78	
03-Jul	155000	159124	9124	34.54	
04-Jul	168000	176574	17450	66.06	
05-Jul	179523	187023	10449	39.55	
06-Jul	189403	205052	18029	68.25	
07-Jul	205207	208028	2976	11.27	
08-Jul	229347	222100	14072	53.27	
09-Jul	244255	254774	32674	123.68	
10-Jul	262832	262832	8058	30.50	Drilling ended

<b>Summary - Drill #2 - PHASE I Drilling</b>	
Total cubic meters	755.04
Days	17
Cubic meters per day	44.414

<b>Summary –TOTAL DRILL WATER USAGE</b>	
Total cubic meters	4,239
Days	55
Cubic meters per Day	<b>77.073</b>

# HAMLET OF WHALE COVE

PO BOX 120  
WHALE COVE, NUNAVUT, X0C 0J0  
Telephone: (867) 896-9961 ~ Fax: (867) 896-9109



June 7, 2017

David Smith  
Exploration Manager, Canada  
Nordgold

## **Re: Waste Management for Nordgold's Camp**

Thank you for your letter of February 1, 2017. The only change that the Hamlet has made is to introduce under By-law a tipping fee of \$50.00 per truck load of camp wastes. We would also like to see Nordgold contribute to the maintenance and upgrading of the access road to the Wilson River(Akkuq). No other changes to the 2016 procedures are necessary at this time.

Sincerely,

Ian Copland, SAO  
Hamlet of Whale Cove.

### Garbage Taken to Whale Cove Dump – 2019

During the 2019 exploration program, garbage was transported to the Whale Cove waste disposal site pursuant to the conditions of the Hamlet as set forth in a letter from the Hamlet of Whale Cove presented herein on the previous page (page 23).

Pistol Bay Camp					
2019 Whale Cove Dump runs					
JUNE			JULY		
Date	Trips	Notes	Date	Trips	Notes
16-Jun	1		01-Jul		
17-Jun			02-Jul		
18-Jun			03-Jul		
19-Jun			04-Jul	1	
20-Jun	1		05-Jul	1	
21-Jun			06-Jul		
22-Jun			07-Jul	1	
23-Jun			08-Jul		
24-Jun	1		09-Jul		
25-Jun			10-Jul		
26-Jun	2		11-Jul	1	
27-Jun			12-Jul		
28-Jun	1		13-Jul		
29-Jun	1		14-Jul		
30-Jun			15-Jul		
			16-Jul	1	
			17-Jul		
			18-Jul	1	
			19-Jul		
			20-Jul		
			21-Jul		
			22-Jul		
			23-Jul		
			24-Jul	1	
			25-Jul	1	
			26-Jul	1	
			27-Jul		
			28-Jul		
			29-Jul		
			30-Jul		
			31-Jul		

**Garbage Taken to Whale Cove Dump – 2019 (continued)**

<b>Pistol Bay Camp</b>					
<b>2019 Whale Cove Dump runs</b>					
<b>AUGUST</b>			<b>SEPTEMBER</b>		
<b>Date</b>	<b>Trips</b>	<b>Notes</b>	<b>Date</b>	<b>Trips</b>	<b>Notes</b>
01-Aug			01-Sep		
02-Aug	1		02-Sep	1	
03-Aug			03-Sep	1	
04-Aug			04-Sep		
05-Aug			05-Sep		
06-Aug			06-Sep		
07-Aug			07-Sep	1	
08-Aug			08-Sep		
09-Aug			09-Sep		
10-Aug					
11-Aug					
12-Aug					
13-Aug					
14-Aug					
15-Aug					
16-Aug					
17-Aug	1				
18-Aug					
19-Aug	1				
20-Aug					
21-Aug					
22-Aug					
23-Aug					
24-Aug					
25-Aug					
26-Aug					
27-Aug					
28-Aug					
29-Aug					
30-Aug					
31-Aug					

The above table lists the dates that the Ford  $\frac{3}{4}$  ton pick-up truck with an 8 foot box made a trip to the Whale Cove waste disposal site; generally with a partial load of kitchen and camp waste. Frequent trips were made to mitigate against kitchen waste attracting wildlife into camp.

## **APPENDIX 2**

### **Wildlife log**

Wildlife observations were recorded during the 2019 field season. The log is presented in the following page.

Wildlife Log/Record of Observations

DATE	LOCATION	SPECIES	# OF ANIMALS	DESCRIPTION OF ACTIVITY/ACTION TAKEN	GENDER/AGE
25 July 2019	1 km south of camp	Arctic Hare	1	Running	?
July 15/19	Rig 19-88-73	Fox	1	Sniffing	
July 2, 2019	Between Camp & Rankin	Caribou	n/100	Walking	
July 5, 2019	Drill hole 1988074 v. 1988074	Fox	1	Chasing cattle drill	Various
July 12, 2019	Houtzler, Barzooka	herd of Caribou	100+	Walking, relaxing and walking towards	?
July 15, 2019	In camp	Fox	1	Approaching the kitchen	?
July 15, 2019	Vickers	Caribou	100+	grazing	
July 16, 2019	North of Central Tamarite	wolverine	2	relaxing outside den	prob. young
July 17, 2019	Around camp	Caribou	2	Walking towards den	Female
July 17, 2019			2	wandering	
July 19, 2019	SOUTH OF CAMP	HERD OF CARIBOU	2-300	walking	ALL
July 22, 2019	in front of camp	Caribou sheeping	1	EARLY TO WEST	
July 25, 2019	South of camp - K15033	WOLF	1	Running along ridge	Did not disperse
July 26, 2019	IN CAMP	CARIBOU + CALF	2		
Aug 18	At camp	Arctic Hare	1	Running	—
Aug 22	Camp	Caribou	2	Chilling	F/calf
Aug 23	Camp	fox	1	Chasing sika	?
Aug 23	01 v. 1988	fox	1	just passing by	

**APPENDIX 3****STORAGE OF CONTAINERS AND CONTAINER REMOVAL**

- Hamlet of Whale Cove Letter: Storage of Containers

**HAMLET OF WHALE COVE**

PO BOX 120  
WHALE COVE, NUNAVUT, X0C 0J0  
Telephone: (867) 896-9961 ~ Fax: (867) 896-9109



16 March 2016

Northquest Ltd.  
50 Richmond Street East, Suite 101  
Toronto ON  
M5C 1N7

Attention: Dwayne Car

**Re: Storage of Containers**

In response to your request it is agreed and understood that the Hamlet approves Northquest Ltd. to store empty fuel drums, (45 gallon) at the staging area of the Municipal Airport. The staging area is under the full control of Northquest.

It is understood that the drums have no residual fuel and are restricted to the staging area for storage pending ultimate removal.

It is further agreed that the staging area is approved to accept used oil stored in appropriate containers, prior to ultimate removal to Arviat. Any spillage or remedial work respecting spillage will be completed by Northquest after reporting said spills to the Government of Nunavut.

Yours truly

Mike Richards  
SAO

The designated area at the airport was cleared of Northquest Ltd., material during the period of late September to early October 2017. No drums or propane cylinders were stored at the Whale Cove airport in 2019.



**APPENDIX 4****PHOTOGRAPHS OF JET A-1 FUEL IN BERMS AND PROPANE STORED FOR WINTER**

Figure 3. Fuel berm Number 1, at the camp generator shack, with diesel gasoline, waste oil and water heater fuel stored for the winter.



Figure 4. Fuel berm Number 2, near generator, with Jet A-1 fuel stored for the winter.



Figure 5. Propane cylinders stored at the Pistol Bay camp.

## **APPENDIX 5**

### **SPILL CONTINGENCY PLAN**

**NORDGOLD (Northquest Ltd)**  
**SPILL CONTINGENCY PLAN**  
**FOR EXPLORATION CAMP AND DRILL SITES**  
**PISTOL BAY AREA, KIVALLIQ REGION**  
**NUNAVUT**

Prepared by: Dwayne Car

May 2015

Revision 1: Stanley Robinson

March 2017

Revision 2: Stanley Robinson

January 2018

Revision 3: Stanley Robinson

December 2018

Revision 4: David Smith

June, 2019

NORDGOLD (Northquest Ltd.)  
Suite 101 - 50 Richmond Street East,  
Toronto, Ontario  
Canada M5C 1N7  
[www.nordgold.com](http://www.nordgold.com)

**Table of Contents**

	Page
PREAMBLE - - - - -	3
1.0 INTRODUCTION - - - - -	4
2.0 SITE INFORMATION - - - - -	4
2.1 Campsite - - - - -	5
2.2 Camp and Drill Sites - - - - -	6
2.3 Effective Date of the Plan - - - - -	6
2.4 Background Information on Site - - - - -	6
3.0 PETROLEUM AND CHEMICAL STORAGE - - - - -	6
3.1 Petroleum Transfer Method - - - - -	7
4.0 RISK ASSESSMENT AND MITIGATION OF RISK - - - - -	7
4.1 Responsibilities - - - - -	8
5.0 RESPONDING TO FAILURES AND SPILLS- - - - -	8
5.1 Basic Steps - - - - -	9
5.2 Reporting Procedure - - - - -	9
5.3 Emergency Contact List - - - - -	9
6.0 ACTION PLANS - - - - -	10
6.1 Spills on Land (gravel, rock, soil and vegetation) - - - - -	11
6.2 Spills on Snow - - - - -	11
6.3 Spills on Ice - - - - -	12
6.4 Spills on Water - - - - -	12
6.5 Spills Due to Accidental Load Release - - - - -	13
7.0 RESOURCE INVENTORY - - - - -	14
8.0 TRAINING/EXERCISE - - - - -	14
APPENDIX 1 SPILL REPORT FORM - - - - -	16
APPENDIX 11 MATERIAL SAFETY DATA SHEETS (MSDS) - - - - -	17

## **PREAMBLE**

This Spill Contingency Plan is effective from the date of issuance of all water licences and land use permits currently being applied for by Nordgold (Northquest Ltd) on its Pistol Bay property located 15 km north of Whale Cove, Nunavut, until the expiry of said licences and permits.

The Spill Contingency Plan was prepared in May 2015 for internal company use and distributed to regulators for approval as part of Nordgold (Northquest Ltd)'s Land Use and Water Licence permits.

This version dated June 2019 reflects project updates since March 2016.

## 1.0 INTRODUCTION

The purpose of Nordgold (Northquest Ltd.)'s Spill Contingency Plan is to provide a plan of action for any spill event during the Company's exploration program in the Pistol Bay area of Nunavut. This Plan provides the protocol for responding to spills (or potential spills) that will minimize health and safety hazards, environmental damage and clean-up costs as well as defining responsibilities of response personnel. This Spill Contingency Plan details the sites that operations will be conducted upon, describes the response organizations, action plans, reporting procedures and training exercises in place.

*The Spill Contingency Plan will;*

- *Promote the safe and careful use of potentially hazardous materials;*
- *Promote the safe and effective recovery of spilled potentially hazardous materials;*
- *Minimize the environmental impacts of spills to water or land;*
- *Identify roles, responsibilities and reporting procedures for spill events;*
- *Provide readily accessible emergency information to clean-up crews, management and government agencies, and;*
- *Comply with federal and territorial regulations and guidelines pertaining to the preparation of contingency plans and notification requirements in the event of an emergency or spill.*

## 2.0 SITE INFORMATION

**2.1. Campsite** The Pistol Bay camp has been in place since 2011 and partially owned by Henik Lake Adventures Ltd. of Arviat. The campsite is located at 62 21 05.2N, 92 45 19.7W

Capacity: **35** people

### **Structures (prior to commencement of 2019 field season):**

- Thirteen x 14' x 16' Weatherhaven sleep tents heated with propane
- One 14 x 48' plywood kitchen heated with propane
- One 14' x 16' plywood shack heated with propane, and used for sample shipment preparation and sample drying. Previously, this building was the core shed.
- One 16' x 24' plywood core shack, heated with fuel oil.
- One 16' x 8' extension to plywood core logging shack
- One 14' x 16' Weatherhaven shower/laundry facility, heated with propane, with an 8' x 16' extension which houses the laundry facilities, water storage tanks, water heater and water treatment system
- One 14' x 16' Weatherhaven core cutting tent
- One 14' x 16' Weatherhaven storage tent
- One 14' x 20' Weatherhaven office tent heated with propane
- One 8' x 8' plywood equipment shack

**5**

- Three plywood outhouses
- One heli-pad made of plywood framed with wooden pallets
- Two fuel caches stored in four “Insta berms” equipped with water drains
- Spill response equipment located beside fuel berms and heli-pad
- Two plywood generator shacks 8’ x 16’
- One 8’ x 8’ shed to contain electrical panels
- One 16’ x 16’ plywood dry (heated by fuel oil)
- One plywood emergency shelter (used at drill rig)

**Northquest Machinery (on-site prior to commencement of 2019 field season):**

- One 2013 Ford F250 ¾ ton pick-up Truck
- One 2014 TRX500FM Honda ATV
- One 2014 TRX420FE Honda ATV
- One 2011 TRX500 Honda ATV
- One 2016 TRX 500FM Honda ATV
- Two Honda 6500 generators
- One gas portable rock saw
- Two 33.1Kva generators (main power plant and spare for camp).
- Two 50 cc Honda water pumps
- One Smart Ash portable, multipurpose batch load incinerator
- One gas-powered hydraulic barrel crusher
- One Kubota M6060 tractor
- One Sure-track trailer model ST8214TLDD
- Two Vancon Core Saws, 3hp, electric

**Top Rank Diamond Drilling Limited machinery on site at commencement of 2019 field season:**

- Two Discovery 2 diamond drills, with 4 Perkins engines
- Three Honda generators
- One Yamaha generators
- One generic generator
- One Lincoln welder
- One Miller welder
- Seven Water pumps
- Four Honda 2” water pumps
- Seven Water pumps
- Four Honda 2” water pumps



## 2.2. Campsite and Drill Sites

In 2019, drilling is planned only on the Vickers Deposit, as shown on the attached map titled “Property Configuration”

At the start the 2019 field season, the following fuel storage sites are in use at Pistol Bay:

**Staging Area Fuel Cache:** There are 161 drums of Jet A-1 fuel stored in a tarpaulin covered fuel berm at a road accessible staging area 2 km of the Pistol Bay project camp (62° 20' 11.1" North Latitude and 92° 45' 40.3" West Longitude)

**Helicopter Fuel Cache:** Beside the helicopter landing pad at the camp (62° 20' 59.8" North Latitude and 92° 44' 54.4" West Longitude) is stored a total of 54 drums of Jet A-1 fuel and eight empty drums were stored here

**Camp Generator Fuel Cache:** A total of 32 drums of Jet A-1 fuel, seven drums of fuel suitable for use in drill water heaters, two drums of waste oil and 24 empty drums are stored at this site at the beginning of the 2019 field season. This fuel cache is between the two camp generators centered at approximately 62° 21' 4.4" North Latitude and 92° 44' 59.3" West Longitude.

**Drill Sites:** Up to 3 drums of diesel fuel and 10 gallons of drill additives to be stored at each drill pad. These will be continuously renewed during the drilling program.

## 2.3. Effective Date of Plan

June 25, 2015 was the date of the original plan for the project, with the most recent revision dated June 21, 2019. The Plan is effective concurrent with all licences and permits for the Project.

## 2.4. Background Information on the Camp Site

The site is located on a wave-modified, flat-topped esker that was once used as part of an ATV trail network. The Hamlet of Whale Cove recently completed a new gravel-topped road system that allows two-wheel drive vehicles to travel from Whale Cove to the mouth of the Wilson River. The Hamlet also refurbished the existing road which extends to the Pistol Bay campsite. This allows Nordgold (Northquest Ltd.) personnel to travel by pick-up to Whale Cove, the Whale Cove airport and to the Vickers drill target. However, a helicopter is still the primary mode of transport for the project.

## 3.0 PETROLEUM AND CHEMICAL STORAGE

Fuels required for use in the exploration program and at the campsite are stored in the project base camp. They are all clearly labelled as the property of Northquest, are stored in a safe and secure manner with insta-berms and are secured for the Winter.

Fuel type	Purpose	Size
Jet A1	Helicopter use	205 litre
propane		100 lb tank

All fuels for exploration purposes i.e., Jet A1, gasoline and diesel are stored in 205 litre (45 gal) metal drums. Propane is stored in standard 100lb propane tanks. Material Safety Data Sheets (MSDS) for these and other petroleum based products used during the drilling programs are located in Appendix B.

Temporary remote fuel caches are located in proximity of the area of drilling and will be located at each drill site, and will be in accordance with CSA approved methods of storage of drummed product. Spill kits will be located at each temporary remote fuel cache and fuel will be stored in Insta-berms.

After drilling at each site, empty drums will be crushed and backhauled to Whale Cove for shipping and disposal offsite. Fuel cache inspections will occur on a regular basis for leaks, damaged or punctured drums.

### 3.1 Petroleum Transfer Method

Manual, electric engine powered pumps, along with the appropriate filtration devices, may be used for the transfer of petroleum products from their storage drums to their end use fuel tanks. Spill kits will be at all petroleum transfer stations.

## 4.0 RISK ASSESSMENT AND MITIGATION OF RISKS

The following is a list of sources:

- Drummed Products: Leaks or ruptures may occur, and bung caps may be loose. This includes Jet fuel, diesel, waste fuel and waste oil.
- Fuel cylinders: Propane leaks may occur at the valves.
- Vehicles and Equipment: Helicopter and fixed wing aircraft, snowmobiles, generators, pumps, diamond drills, ATV's.

Incidents involving leaking or dripping fuels and oils may occur due to malfunctions, impact damage, lack of regular maintenance, improper storage or faulty operation. Regular inspection and maintenance in accordance with recognized and accepted standard practices at all fuel

caches reduces the risks associated with the categories listed above. Spill kits will be located at all drill sites.

#### 4.1 Responsibilities

**Camp Manager:** responsible for checking that all fuel and oil drums or containers stored at the camp or the laydown are in good condition with no evidence of leakage, assuring drip trays and berms are in place and not overflowing; keeping spill kits and absorbent mats in good repair and accessible. If spill or likelihood of a spill occurs the Camp Manager will immediately report to the **Project Supervisor**.

**Drill Foreman and drillers:** responsible for checking that all fuel and oil drums or containers and drill muds stored at the drill sites are in good condition with no evidence of leakage, assuring drip trays and berms are in place and not overflowing; keeping spill kits and absorbent mats in good repair and accessible. If spill or likelihood of a spill occurs the Driller or Drill Foreman will immediately report to the **Project Supervisor**.

**Pilots:** responsible for checking helicopter fuel storage berms as often as practicable, and at least every time refuelling is completed. All spills or issues with fuel storage will be reported immediately to the Project Supervisor.

**Project Supervisor** will report any spill to the NWT 24-Hour Spill Report Line and initiate clean-up. Project Supervisor will request additional aid from external sources if deemed necessary. If one or more of these key personnel are absent from the site an alternative person will be named as either Camp Manager or Project Supervisor for the interim.

David Smith, Exploration Manager.

#### 5.0 RESPONDING TO FAILURES AND SPILLS

In the case of any spill or environmental emergency, it is necessary to react in the most immediate, safe and environmentally responsible manner. No spill or incident is so minor that it can be ignored and every spill must be reported.

## 5.1 Basic Steps

The basic steps of the response plan are as follows:

1. Ensure the safety of all persons at all times.
2. Identify and find the spill substance and its source, and, if possible, stop the process or shut off the source.
3. Inform the immediate supervisor or his or her designate at once, so that he/she may take appropriate action. Appropriate action includes the notification of a government official, if required; Spill Report forms are included at the back of this plan.
4. Contain the spill or environmental hazard, as per its nature, and as per the advice of INAC Water Resources Inspector as required.
5. Implement any necessary cleanup or remedial action.

## 5.2 Reporting Procedure

Communication by two-way radios will be used so that in the event that a spill occurs outside of camp at either the drill rig or external fuel cache it can be immediately reported to the Project Supervisor.

All spill kits located at all sources of fuel will have contact information for the NWT Spill Report Line prominently displayed.

A listing of the NWT 24 Hour Spill Report Line as well as other government contacts and company officials will be displayed adjacent to the phone in camp. (See Reporting Procedure and Contacts below).

1. Immediately notify the Nordgold (Northquest Ltd.) head office T: (416) 306-0954 and report to the 24 Hour Spill Line at (867) 920-8130 (Fax: 867-873-6924), INAC Land Use Resource Management Officer (867) 645-2840 and KIA Land Use Inspector (867) 645-5735.
2. A Spill Report Form (Appendix 1) is filled out as completely as possible before or after contacting the 24 Hour Spill Line.
3. Notify Dave Smith, Exploration Manager, Cell: (647) 549-0954

## 5.3 Emergency Contact List

**Table 2: Emergency Contact List – Spill Reporting and Response**

CONTACT	CONTACT NUMBER (Tel / Cell)
David Smith, Exploration Manager, Nordgold	C: (647) 549-0954
Nordgold Headquarters, Toronto	T: (416) 306-0954
<b>24 Hour Emergency Spill Line phone / fax</b>	<b>(867) 920-8130, Fax (867) 873-6924</b>
<del>Government of the NWT Pollution Control Division, Yellowknife</del>	<del>(867) 873-7654</del>

INAC, Yellowknife	(867) 920-8240
Environment Canada, Yellowknife	(867) 975-4644
24 hour Pager, Yellowknife	(867) 920-5131 (867) 873-8185
Environment Canada – Iqaluit Emergency Pager	
Environment Canada Enforcement Officer	(867) 975-4644
Nunavut Water Board	(867) 360-6338 Fax (867) 360-6369
GN – DoE Environmental Protection (Rob Eno)	(867) 987-7729 FAX (867) 975-5981
<b>INAC Land Use Resource Management Officer (Rankin Inlet)</b>	<b>(867) 645-2840</b>
<b>10</b>	
<b>KIA Land Use Inspector (Rankin Inlet)</b>	<b>(867) 645-5735</b>
INAC NU Water Resources Manager INAC NU Lands Administration Manager	(867) 975 4550 FAX (867) 975-4585 (867) 975-4280 FAX (867) 975-4286
DFO NU Region Manager, Pollution Control and Air Quality	(867) 979-8000 FAX (867) 979-8039 (867) 975-5907
Rankin Inlet Hospital; Office Hours / After 5pm	(867) 645-8300 / (867) 645-6700
Rankin Inlet RCMP; Office Hours / Emergency	(867) 645-0123 / (867) 645-1111
Whale Cove RCMP Detachment	(867) 896-0123 or (867) 896-1111
Keewatin Air Ambulance	(867) 645-4455

**A detailed report on each occurrence must also be filled out with the INAC Water Resources Inspector no later than 30 days after initially reporting the event. The Spill Report Form is attached as Appendix I.**

## **6.0 ACTION PLANS**

The following responses are recommended for fuel spills in differing environments. Depending on the location and size of the exploration program some of the equipment mentioned in the responses listed below will obviously not be located on site but could be transported to the spill if deemed necessary. The most likely scenario for fuel spills in this type of exploration program would include: leaking drums, hydraulic line malfunction and re-fueling operations. It is not anticipated that a spill of more than 45 gallons will occur as no fuel container on-site will exceed this capacity.

## **6.1 Spills on Land (gravel, rock, soil and vegetation)**

Trench or ditch to intercept or contain flow of fuel or petroleum products on land where feasible (loose sand, gravel and surface layers of organic materials are amenable to trenching/ditching-trenching in rocky substrates is typically impractical and impossible).

Construct a soil berm downslope of the spill. Use of synthetic, impervious sheeting can also be used to act as a barrier.

Where available, recover spills through manual or mechanical means including shovels, heavy equipment and pumps.

Absorb petroleum residue with synthetic sorbent pad materials. Recover spilled and contaminated material, including soil and vegetation.

Transport contaminated material to approved disposal or recovery site. Equipment used will depend on the magnitude and location of the spill.

Land based disposal is only authorized with the approval of government authorities.

## **6.2 Spills on Snow**

Trench or ditch to intercept or contain flow of fuel or petroleum products on snow, where feasible (ice, snow, loose sand, gravel and surface layers of organic materials as amenable to trench/ditching; trenching in solid, frozen ground or rocky substrates is typically impractical and impossible).

Compact snow around the outside perimeter of the spill area.

Construct a dike or dam out of snow, either manually with shovels or with heavy equipment such as graders or dozers where available.

If feasible, use synthetic lines to provide an impervious barrier at the spill site.

Locate the low point of the spill area and clear channels in the snow, directed away from waterways, to allow non-absorbed material to flow into the low point.

Once collected in the low area, option include shoveling spilled material into containers, picking up with mobile heavy equipment, pumping liquid into tanker trucks or using vacuum truck to pick up material.

Where safe, disposal can be done through in-situ combustion with approval from government and safety consultants.

Transport contaminated material to approved disposal site. Equipment used will depend on the magnitude and location of the spill.

### 6.3 Spills on Ice

Contain material spill using methods described above for snow, if feasible and/or mechanical recovery with heavy equipment.

Prevent fuel/petroleum products from penetrating ice and entering watercourses.

Remove contaminated material, including snow/ice as soon as possible.

Containment of fuel/petroleum products under ice surface is difficult given the ice thickness and winter conditions. However, if the materials get under ice, determine area where the fuel/petroleum product is located.

Drill holes through ice using ice auger to locate fuel/petroleum product.

Once detected, cut slits in the ice using chain saws and remove ice blocks.

Fuel /petroleum products collected in ice slots or holes can be picked up via suction hoses connected to portable pump, vacuum truck or standby tanker. Care should be taken to prevent the end of the suction hose clogging up by snow, ice or debris.

Fuel/petroleum products that have collected in ice slots may be disposed of by in-situ burning if sufficient holes are drilled in ice. Once all the holes are drilled, the oil which collects in the holes may be ignited. Consult with fire/safety consultants and government authorities to obtain approval.

### 6.4 Spills on Water

Contain spills on open water immediately to restrict the size and extent of the spill

Fuel/petroleum products which float on water may be contained through the use of booms, absorbent materials, skimming and the erection of culverts.

Deploy containment booms to minimize spill area, although effectiveness of booms may be limited by wind, waves and other factors.

Use sorbent booms to slowly encircle and absorb spilled material. These absorbent are hydrophobic (absorb and repel water).

Once booms are secured, use skimmers to draw in hydrocarbons and minimal amounts of water. Skimmed material can be pumped through hoses to empty fuel tanks/drums.

Culverts permit water flow while capturing and collecting fuel along the surface with absorbent materials.

Chemical methods including dispersants, emulsion – treating agents and shoreline cleaning will be considered.

## 6.5 Spills Due to Accidental Load Release

The loss of external loads of fuel, oil or chemicals from the helicopter requires an immediate response.

- 1) Obtain GPS co-ordinates of the location and contact base camp. Include quantity and type of load loss.
- 2) Base camp will contact the 24-Hour Spill Line and receive instructions on follow up procedures.
- 3) Administer the appropriate procedure for spills on Land, Water, Snow or Ice



**NOTE:**

1. **Material Safety Data Sheets** for all hazardous materials involved in this project are listed in Appendix 2. These MSDS sheets are for all drilling mud, polymers and greases as well as for calcium chloride, diesel, Jet A-1 with AIA, propane and gasoline.
2. In-situ combustion is a disposal method available for fuels and petroleum products. In-situ burning can be initiated by using a large size portable propane torch (tiger torch) to ignite the fuel/petroleum products. Highly flammable products such as gasoline or alcohol, or combustible material such as wood, may be used to promote ignition of the spilled product. The objective is to raise the temperature for sustained combustion of the spilled product.  
Precautions need to be taken to ensure safety of personnel. Also, spilled product should be confined to control burning. These include areas where the spilled material has pooled naturally or been contained via dikes, trenches, depressions or ice slots. Prior to any attempts at in-situ burning, consultation with experts and approval by government authorities are required.
3. Chemical response methods are also available and may include the use of dispersants, emulsions-treating agents, visco-elastic agents, herding agents, solidifiers, and shoreline cleaning agents.
4. Biological response methods include nutrient enrichment and natural microbe seeding.
5. Site remediation will be completed as per the advice of government authorities.

**7.0 RESOURCE INVENTORY****Resources available on site:**

Trenching/digging equipment in the form of picks and shovels.

Pumps

Impervious sheeting (tarps)

Plastic bags, buckets, empty drums for collection of contaminated material.

2 Spill Kits containing:

4 – oil sorbent booms (5" x 10')

100 – oil sorbent sheets (16.5" x 20" x 3/8")

1 – drain cover (36" x 36" x 1/16")

1 – 1lb plugging compound

2 – pair Nitrile gloves

2 – pair Safety goggles

10 – disposable bags

**8.0 TRAINING/EXERCISE**

*Northquest (Nordgold) is aware that without practice no Contingency Plan has value.*

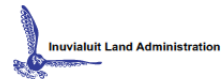
**15**

*At least one practice drill will be held per season to give all employees and contractors a chance to practice emergency response skills. Each practice will be evaluated and a report prepared with the objective of learning where gaps and deficiencies exist, and in what areas more practice is required. Response criteria, communication and reporting requirements will be discussed to ensure everyone fully understands them.*

**APPENDIX I**  
**SPILL REPORT FORM**

# NT-NU SPILL REPORT

OIL, GASOLINE, CHEMICALS AND  
OTHER HAZARDOUS MATERIALS



NT-NU 24-HOUR SPILL REPORT LINE

Tel: (867) 920-8130 • Fax: (867) 873-6924 • Email: spills@gov.nt.ca

REPORT LINE USE ONLY

A	Report Date:	MM	DD	YY	Report Time:	<input type="checkbox"/> Original Spill Report <b>OR</b> <input type="checkbox"/> Update # _____ to the Original Spill Report	Report Number:
	B	Occurrence Date:	MM	DD	YY		
C	Land Use Permit Number (if applicable):				Water Licence Number (if applicable):		
D	Geographic Place Name or Distance and Direction from the Named Location:					Region: <input type="checkbox"/> NT <input type="checkbox"/> Nunavut <input type="checkbox"/> Adjacent Jurisdiction or Ocean	
E	Latitude: _____ Degrees _____ Minutes _____ Seconds				Longitude: _____ Degrees _____ Minutes _____ Seconds		
F	Responsible Party or Vessel Name:				Responsible Party Address or Office Location:		
G	Any Contractor Involved:				Contractor Address or Office Location:		
H	Product Spilled: <input type="checkbox"/> Potential Spill				Quantity in Litres, Kilograms or Cubic Metres:	U.N. Number:	
I	Spill Source:				Spill Cause:	Area of Contamination in Square Metres:	
J	Factors Affecting Spill or Recovery:				Describe Any Assistance Required:	Hazards to Persons, Property or Environment:	
K	Additional Information, Comments, Actions Proposed or Taken to Contain, Recover or Dispose of Spilled Product and Contaminated Materials:						
L	Reported to Spill Line by:		Position:		Employer:	Location Calling From:	Telephone:
M	Any Alternate Contact:		Position:		Employer:	Alternate Contact Location:	Alternate Telephone:

REPORT LINE USE ONLY

N	Received at Spill Line by:	Position:	Employer:	Location Called:	Report Line Number:
Lead Agency: <input type="checkbox"/> EC <input type="checkbox"/> CCG/TCMSS <input type="checkbox"/> GNWT <input type="checkbox"/> GN <input type="checkbox"/> ILA <input type="checkbox"/> AANDC <input type="checkbox"/> NEB <input type="checkbox"/> Other: _____			Significance: <input type="checkbox"/> Minor <input type="checkbox"/> Major <input type="checkbox"/> Unknown		File Status: <input type="checkbox"/> Open <input type="checkbox"/> Closed
Agency:		Contact Name:	Contact Time:	Remarks:	
Lead Agency:					
First Support Agency:					
Second Support Agency:					
Third Support Agency:					

**APPENDIX II****MATERIAL SAFETY DATA SHEETS (MSDS)****LIST OF MSDS**

- HESS – Gasoline, All Grades
- HESS – Diesel Fuel (All types)
- AVJET – Jet A-1 with AIA
- BIG BEAR DIAMOND DRILL ROD GREASE
- 550X POLYMER
- G-STOP
- CHEVRON Polyuran EP Grease 2 (Tube Grease)
- Calcium chloride, Anhydrous



## MATERIAL SAFETY DATA SHEET

Gasoline, All Grades

MSDS No. 9950

## EMERGENCY OVERVIEW

## DANGER!

**EXTREMELY FLAMMABLE - EYE AND MUCOUS MEMBRANE IRRITANT**  
**- EFFECTS CENTRAL NERVOUS SYSTEM - HARMFUL OR FATAL IF**  
**SWALLOWED - ASPIRATION HAZARD**



NFPA 704 (Section 16)

High fire hazard. Keep away from heat, spark, open flame, and other ignition sources.

If ingested, do NOT induce vomiting, as this may cause chemical pneumonia (fluid in the lungs). Contact may cause eye, skin and mucous membrane irritation. Harmful if absorbed through the skin. Avoid prolonged breathing of vapors or mists. Inhalation may cause irritation, anesthetic effects (dizziness, nausea, headache, intoxication), and respiratory system effects.

Long-term exposure may cause effects to specific organs, such as to the liver, kidneys, blood, nervous system, and skin. Contains benzene, which can cause blood disease, including anemia and leukemia.

## 1. CHEMICAL PRODUCT and COMPANY INFORMATION

Hess Corporation  
 1 Hess Plaza  
 Woodbridge, NJ 07095-0961

EMERGENCY TELEPHONE NUMBER (24 hrs):

CHEMTREC (800)424-9300

COMPANY CONTACT (business hours):

Corporate Safety (732)750-6000

MSDS (Environment, Health, Safety) Internet Website

www.hess.com

**SYNONYMS:** Hess Conventional (Oxygenated and Non-oxygenated) Gasoline; Reformulated Gasoline (RFG); Reformulated Gasoline Blendstock for Oxygenate Blending (RBOB); Unleaded Motor or Automotive Gasoline

See Section 16 for abbreviations and acronyms.

## 2. COMPOSITION and INFORMATION ON INGREDIENTS \*

INGREDIENT NAME (CAS No.)	CONCENTRATION PERCENT BY WEIGHT
Gasoline (86290-81-5)	100
Benzene (71-43-2)	0.1 - 4.9 (0.1 - 1.3 reformulated gasoline)
n-Butane (106-97-8)	< 10
Ethyl Alcohol (Ethanol) (64-17-5)	0 - 10
Ethyl benzene (100-41-4)	< 3
n-Hexane (110-54-3)	0.5 to 4
Methyl-tertiary butyl ether (MTBE) (1634-04-4)	0 to 15.0
Tertiary-amyl methyl ether (TAME) (994-05-8)	0 to 17.2
Toluene (108-88-3)	1 - 25
1,2,4- Trimethylbenzene (95-63-6)	< 6
Xylene, mixed isomers (1330-20-7)	1 - 15

A complex blend of petroleum-derived normal and branched-chain alkane, cycloalkane, alkene, and aromatic hydrocarbons. May contain antioxidant and multifunctional additives. Non-oxygenated Conventional Gasoline and RBOB do not have oxygenates (Ethanol or MTBE and/or TAME).

Revision Date: 09/25/2007

Page 1 of 9



## MATERIAL SAFETY DATA SHEET

Gasoline, All Grades

MSDS No. 9950

Oxygenated Conventional and Reformulated Gasoline will have oxygenates for octane enhancement or as legally required.

**3. HAZARDS IDENTIFICATION****EYES**

Moderate irritant. Contact with liquid or vapor may cause irritation.

**SKIN**

Practically non-toxic if absorbed following acute (single) exposure. May cause skin irritation with prolonged or repeated contact. Liquid may be absorbed through the skin in toxic amounts if large areas of skin are exposed repeatedly.

**INGESTION**

The major health threat of ingestion occurs from the danger of aspiration (breathing) of liquid drops into the lungs, particularly from vomiting. Aspiration may result in chemical pneumonia (fluid in the lungs), severe lung damage, respiratory failure and even death.

Ingestion may cause gastrointestinal disturbances, including irritation, nausea, vomiting and diarrhea, and central nervous system (brain) effects similar to alcohol intoxication. In severe cases, tremors, convulsions, loss of consciousness, coma, respiratory arrest, and death may occur.

**INHALATION**

Excessive exposure may cause irritations to the nose, throat, lungs and respiratory tract. Central nervous system (brain) effects may include headache, dizziness, loss of balance and coordination, unconsciousness, coma, respiratory failure, and death.

**WARNING:** the burning of any hydrocarbon as a fuel in an area without adequate ventilation may result in hazardous levels of combustion products, including carbon monoxide, and inadequate oxygen levels, which may cause unconsciousness, suffocation, and death.

**CHRONIC EFFECTS and CARCINOGENICITY**

Contains benzene, a regulated human carcinogen. Benzene has the potential to cause anemia and other blood diseases, including leukemia, after repeated and prolonged exposure. Exposure to light hydrocarbons in the same boiling range as this product has been associated in animal studies with systemic toxicity. See also Section 11 - Toxicological Information.

**MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE**

Irritation from skin exposure may aggravate existing open wounds, skin disorders, and dermatitis (rash). Chronic respiratory disease, liver or kidney dysfunction, or pre-existing central nervous system disorders may be aggravated by exposure.

**4. FIRST AID MEASURES****EYES**

In case of contact with eyes, immediately flush with clean, low-pressure water for at least 15 min. Hold eyelids open to ensure adequate flushing. Seek medical attention.

**SKIN**

Remove contaminated clothing. Wash contaminated areas thoroughly with soap and water or waterless hand cleanser. Obtain medical attention if irritation or redness develops.

**INGESTION**

**MATERIAL SAFETY DATA SHEET****Gasoline, All Grades****MSDS No. 9950**

DO NOT INDUCE VOMITING. Do not give liquids. Obtain immediate medical attention. If spontaneous vomiting occurs, lean victim forward to reduce the risk of aspiration. Small amounts of material which enter the mouth should be rinsed out until the taste is dissipated.

**INHALATION**

Remove person to fresh air. If person is not breathing, ensure an open airway and provide artificial respiration. If necessary, provide additional oxygen once breathing is restored if trained to do so. Seek medical attention immediately.

**5. FIRE FIGHTING MEASURES****FLAMMABLE PROPERTIES:**

FLASH POINT:	-45 °F (-43°C)
AUTOIGNITION TEMPERATURE:	highly variable; > 530 °F (>280 °C)
OSHA/NFPA FLAMMABILITY CLASS:	1A (flammable liquid)
LOWER EXPLOSIVE LIMIT (%):	1.4%
UPPER EXPLOSIVE LIMIT (%):	7.6%

**FIRE AND EXPLOSION HAZARDS**

Vapors may be ignited rapidly when exposed to heat, spark, open flame or other source of ignition. Flowing product may be ignited by self-generated static electricity. When mixed with air and exposed to an ignition source, flammable vapors can burn in the open or explode in confined spaces. Being heavier than air, vapors may travel long distances to an ignition source and flash back. Runoff to sewer may cause fire or explosion hazard.

**EXTINGUISHING MEDIA**

**SMALL FIRES:** Any extinguisher suitable for Class B fires, dry chemical, CO<sub>2</sub>, water spray, fire fighting foam, or Halon.

**LARGE FIRES:** Water spray, fog or fire fighting foam. Water may be ineffective for fighting the fire, but may be used to cool fire-exposed containers.

During certain times of the year and/or in certain geographical locations, gasoline may contain MTBE and/or TAME. Firefighting foam suitable for polar solvents is recommended for fuel with greater than 10% oxygenate concentration - refer to NFPA 11 "Low Expansion Foam - 1994 Edition."

**FIRE FIGHTING INSTRUCTIONS**

Small fires in the incipient (beginning) stage may typically be extinguished using handheld portable fire extinguishers and other fire fighting equipment.

Firefighting activities that may result in potential exposure to high heat, smoke or toxic by-products of combustion should require NIOSH/MSHA- approved pressure-demand self-contained breathing apparatus with full facepiece and full protective clothing.

Isolate area around container involved in fire. Cool tanks, shells, and containers exposed to fire and excessive heat with water. For massive fires the use of unmanned hose holders or monitor nozzles may be advantageous to further minimize personnel exposure. Major fires may require withdrawal, allowing the tank to burn. Large storage tank fires typically require specially trained personnel and equipment to extinguish the fire, often including the need for properly applied fire fighting foam.

See Section 16 for the NFPA 704 Hazard Rating.



**MATERIAL SAFETY DATA SHEET****Gasoline, All Grades****MSDS No. 9950****6. ACCIDENTAL RELEASE MEASURES**

ACTIVATE FACILITY SPILL CONTINGENCY or EMERGENCY PLAN.

Evacuate nonessential personnel and remove or secure all ignition sources. Consider wind direction; stay upwind and uphill, if possible. Evaluate the direction of product travel, diking, sewers, etc. to confirm spill areas. Spills may infiltrate subsurface soil and groundwater; professional assistance may be necessary to determine the extent of subsurface impact.

Carefully contain and stop the source of the spill, if safe to do so. Protect bodies of water by diking, absorbents, or absorbent boom, if possible. Do not flush down sewer or drainage systems, unless system is designed and permitted to handle such material. The use of fire fighting foam may be useful in certain situations to reduce vapors. The proper use of water spray may effectively disperse product vapors or the liquid itself, preventing contact with ignition sources or areas/equipment that require protection.

Take up with sand or other oil absorbing materials. Carefully shovel, scoop or sweep up into a waste container for reclamation or disposal - caution, flammable vapors may accumulate in closed containers. Response and clean-up crews must be properly trained and must utilize proper protective equipment (see Section 8).

**7. HANDLING and STORAGE****HANDLING PRECAUTIONS**

\*\*\*\*\*USE ONLY AS A MOTOR FUEL\*\*\*\*\*

\*\*\*\*\*DO NOT SIPHON BY MOUTH\*\*\*\*\*

Handle as a flammable liquid. Keep away from heat, sparks, and open flame! Electrical equipment should be approved for classified area. Bond and ground containers during product transfer to reduce the possibility of static-initiated fire or explosion.

Special slow load procedures for "switch loading" must be followed to avoid the static ignition hazard that can exist when higher flash point material (such as fuel oil) is loaded into tanks previously containing low flash point products (such as this product) - see API Publication 2003, "Protection Against Ignitions Arising Out Of Static, Lightning and Stray Currents.

**STORAGE PRECAUTIONS**

Keep away from flame, sparks, excessive temperatures and open flame. Use approved vented containers. Keep containers closed and clearly labeled. Empty product containers or vessels may contain explosive vapors. Do not pressurize, cut, heat, weld or expose such containers to sources of ignition.

Store in a well-ventilated area. This storage area should comply with NFPA 30 "Flammable and Combustible Liquid Code". Avoid storage near incompatible materials. The cleaning of tanks previously containing this product should follow API Recommended Practice (RP) 2013 "Cleaning Mobile Tanks In Flammable and Combustible Liquid Service" and API RP 2015 "Cleaning Petroleum Storage Tanks".

**WORK/HYGIENIC PRACTICES**

Emergency eye wash capability should be available in the near proximity to operations presenting a potential splash exposure. Use good personal hygiene practices. Avoid repeated and/or prolonged skin exposure. Wash hands before eating, drinking, smoking, or using toilet facilities. Do not use as a cleaning solvent on the skin. Do not use solvents or harsh abrasive skin cleaners for washing this product from exposed skin areas. Waterless hand cleaners are effective. Promptly remove contaminated clothing and launder before reuse. Use care when laundering to prevent the formation of flammable vapors which could ignite via washer or dryer. Consider the need to discard contaminated leather shoes and gloves.



<b>MATERIAL SAFETY DATA SHEET</b>
<b>Gasoline, All Grades</b> <span style="float: right;"><b>MSDS No. 9950</b></span>

**8. EXPOSURE CONTROLS and PERSONAL PROTECTION**
**EXPOSURE LIMITS**

Component (CAS No.)	Source	TWA (ppm)	STEL (ppm)	Exposure Limits	Note
Gasoline (86290-81-5)	ACGIH	300	500	A3	
Benzene (71-43-2)	OSHA	1	5	Carcinogen	
	ACGIH	0.5	2.5	A1, skin	
	USCG	1	5		
n-Butane (106-97-8)	ACGIH	1000	--	Aliphatic Hydrocarbon Gases Alkane (C1-C4)	
Ethyl Alcohol (ethanol) (64-17-5)	OSHA	1000	--		
	ACGIH	1000	--	A4	
Ethyl benzene (100-41-4)	OSHA	100	--		
	ACGIH	100	125	A3	
n-Hexane (110-54-3)	OSHA	500	--		
	ACGIH	50	--	Skin	
Methyl-tertiary butyl ether [MTBE] (1634-04-4)	ACGIH	50	--	A3	
Tertiary-amyl methyl ether [TAME] (994-05-8)				None established	
Toluene (108-88-3)	OSHA	200	--	Ceiling: 300 ppm; Peak: 500 ppm (10 min.)	
	ACGIH	20	--	A4	
1,2,4-Trimethylbenzene (95-63-6)	ACGIH	25	--		
Xylene, mixed isomers (1330-20-7)	OSHA	100	--		
	ACGIH	100	150	A4	

**ENGINEERING CONTROLS**

Use adequate ventilation to keep vapor concentrations of this product below occupational exposure and flammability limits, particularly in confined spaces.

**EYE/FACE PROTECTION**

Safety glasses or goggles are recommended where there is a possibility of splashing or spraying.

**SKIN PROTECTION**

Gloves constructed of nitrile or neoprene are recommended. Chemical protective clothing such as that made of of E.I. DuPont Tychem®, products or equivalent is recommended based on degree of exposure.

Note: The resistance of specific material may vary from product to product as well as with degree of exposure. Consult manufacturer specifications for further information.

**RESPIRATORY PROTECTION**

A NIOSH-approved air-purifying respirator with organic vapor cartridges or canister may be permissible under certain circumstances where airborne concentrations are or may be expected to exceed exposure limits or for odor or irritation. Protection provided by air-purifying respirators is limited. Refer to OSHA 29 CFR 1910.134, NIOSH Respirator Decision Logic, and the manufacturer for additional guidance on respiratory protection selection and limitations.

Use a positive pressure, air-supplied respirator if there is a potential for uncontrolled release, exposure levels are not known, in oxygen-deficient atmospheres, or any other circumstance where an air-purifying respirator may not provide adequate protection.

**9. PHYSICAL and CHEMICAL PROPERTIES**
**APPEARANCE**

A translucent, straw-colored or light yellow liquid



## MATERIAL SAFETY DATA SHEET

**Gasoline, All Grades****MSDS No. 9950****ODOR**

A strong, characteristic aromatic hydrocarbon odor. Oxygenated gasoline with MTBE and/or TAME may have a sweet, ether-like odor and is detectable at a lower concentration than non-oxygenated gasoline.

**ODOR THRESHOLD**

	<u>Odor Detection</u>	<u>Odor Recognition</u>
Non-oxygenated gasoline:	0.5 - 0.6 ppm	0.8 - 1.1 ppm
Gasoline with 15% MTBE:	0.2 - 0.3 ppm	0.4 - 0.7 ppm
Gasoline with 15% TAME:	0.1 ppm	0.2 ppm

**BASIC PHYSICAL PROPERTIES**

BOILING RANGE:	85 to 437 °F (39 to 200 °C)
VAPOR PRESSURE:	6.4 - 15 RVP @ 100 °F (38 °C) (275-475 mm Hg @ 68 °F (20 °C)
VAPOR DENSITY (air = 1):	AP 3 to 4
SPECIFIC GRAVITY (H <sub>2</sub> O = 1):	0.70 - 0.78
EVAPORATION RATE:	10-11 (n-butyl acetate = 1)
PERCENT VOLATILES:	100 %
SOLUBILITY (H <sub>2</sub> O):	Non-oxygenated gasoline - negligible (< 0.1% @ 77 °F). Gasoline with 15% MTBE - slight (0.1 - 3% @ 77 °F); ethanol is readily soluble in water

**10. STABILITY and REACTIVITY )**

**STABILITY:** Stable. Hazardous polymerization will not occur.

**CONDITIONS TO AVOID**

Avoid high temperatures, open flames, sparks, welding, smoking and other ignition sources

**INCOMPATIBLE MATERIALS**

Keep away from strong oxidizers.

**HAZARDOUS DECOMPOSITION PRODUCTS**

Carbon monoxide, carbon dioxide and non-combusted hydrocarbons (smoke). Contact with nitric and sulfuric acids will form nitrocresols that can decompose violently.

**11. TOXICOLOGICAL PROPERTIES****ACUTE TOXICITY**

Acute Dermal LD50 (rabbits): > 5 ml/kg	Acute Oral LD50 (rat): 18.75 ml/kg
Primary dermal irritation (rabbits): slightly irritating	Draize eye irritation (rabbits): non-irritating
Guinea pig sensitization: negative	

**CHRONIC EFFECTS AND CARCINOGENICITY**

Carcinogenicity: OSHA: NO IARC: YES - 2B NTP: NO ACGIH: YES (A3)

IARC has determined that gasoline and gasoline exhaust are possibly carcinogenic in humans. Inhalation exposure to completely vaporized unleaded gasoline caused kidney cancers in male rats and liver tumors in female mice. The U.S. EPA has determined that the male kidney tumors are species-specific and are irrelevant for human health risk assessment. The significance of the tumors seen in female mice is not known. Exposure to light hydrocarbons in the same boiling range as this product has been associated in animal studies with effects to the central and peripheral nervous systems, liver, and kidneys. The significance of these animal models to predict similar human response to gasoline is uncertain.

This product contains benzene. Human health studies indicate that prolonged and/or repeated overexposure to benzene may cause damage to the blood-forming system (particularly bone marrow), and serious blood disorders such as aplastic anemia and leukemia. Benzene is listed as a human carcinogen by the NTP, IARC, OSHA and ACGIH.





# MATERIAL SAFETY DATA SHEET

**Gasoline, All Grades**
**MSDS No. 9950**

This product may contain methyl tertiary butyl ether (MTBE): animal and human health effects studies indicate that MTBE may cause eye, skin, and respiratory tract irritation, central nervous system depression and neurotoxicity. MTBE is classified as an animal carcinogen (A3) by the ACGIH.

## 12. ECOLOGICAL INFORMATION

Keep out of sewers, drainage areas and waterways. Report spills and releases, as applicable, under Federal and State regulations. If released, oxygenates such as ethers and alcohols will be expected to exhibit fairly high mobility in soil, and therefore may leach into groundwater. The API ([www.api.org](http://www.api.org)) provides a number of useful references addressing petroleum and oxygenate contamination of groundwater.

## 13. DISPOSAL CONSIDERATIONS

Consult federal, state and local waste regulations to determine appropriate disposal options.

## 14. TRANSPORTATION INFORMATION

DOT PROPER SHIPPING NAME: Gasoline  
 DOT HAZARD CLASS and PACKING GROUP: 3, PG II  
 DOT IDENTIFICATION NUMBER: UN 1203  
 DOT SHIPPING LABEL: FLAMMABLE LIQUID

PLACARD:



## 15. REGULATORY INFORMATION

### U.S. FEDERAL, STATE, and LOCAL REGULATORY INFORMATION

This product and its constituents listed herein are on the EPA TSCA Inventory. Any spill or uncontrolled release of this product, including any substantial threat of release, may be subject to federal, state and/or local reporting requirements. This product and/or its constituents may also be subject to other federal, state, or local regulations; consult those regulations applicable to your facility/operation.

### CLEAN WATER ACT (OIL SPILLS)

Any spill or release of this product to "navigable waters" (essentially any surface water, including certain wetlands) or adjoining shorelines sufficient to cause a visible sheen or deposit of a sludge or emulsion must be reported immediately to the National Response Center (1-800-424-8802) as required by U.S. Federal Law. Also contact appropriate state and local regulatory agencies as required.

### CERCLA SECTION 103 and SARA SECTION 304 (RELEASE TO THE ENVIRONMENT)

The CERCLA definition of hazardous substances contains a "petroleum exclusion" clause which exempts crude oil, refined, and unrefined petroleum products and any indigenous components of such. However, other federal reporting requirements (e.g., SARA Section 304 as well as the Clean Water Act if the spill occurs on navigable waters) may still apply.

### SARA SECTION 311/312 - HAZARD CLASSES

ACUTE HEALTH	CHRONIC HEALTH	FIRE	SUDDEN RELEASE OF PRESSURE	REACTIVE
X	X	X	--	--

### SARA SECTION 313 - SUPPLIER NOTIFICATION

This product contains the following toxic chemicals subject to the reporting requirements of section 313 of the Emergency Planning and Community Right-To-Know Act (EPCRA) of 1986 and of 40 CFR 372:

INGREDIENT NAME (CAS NUMBER)	CONCENTRATION WT. PERCENT
Benzene (71-43-2)	0.1 to 4.9 (0.1 to 1.3 for reformulated gasoline)
Ethyl benzene (100-41-4)	< 3

Revision Date: 09/25/2007

Page 7 of 9



# MATERIAL SAFETY DATA SHEET

**Gasoline, All Grades**
**MSDS No. 9950**

n-Hexane (110-54-3)	0.5 to 4
Methyl-tertiary butyl ether (MTBE) (1634-04-4)	0 to 15.0
Toluene (108-88-3)	1 to 15
1,2,4- Trimethylbenzene (95-63-6)	< 6
Xylene, mixed isomers (1330-20-7)	1 to 15

US EPA guidance documents ([www.epa.gov/tri](http://www.epa.gov/tri)) for reporting Persistent Bioaccumulating Toxics (PBTs) indicate this product may contain the following de minimis levels of toxic chemicals subject to Section 313 reporting:

<u>INGREDIENT NAME (CAS NUMBER)</u>	<u>CONCENTRATION - Parts per million (ppm) by weight</u>
Polycyclic aromatic compounds (PACs)	17
Benzo (g,h,i) perylene (191-24-2)	2.55
Lead (7439-92-1)	0.079

## CALIFORNIA PROPOSITION 65 LIST OF CHEMICALS

This product contains the following chemicals that are included on the Proposition 65 "List of Chemicals" required by the California Safe Drinking Water and Toxic Enforcement Act of 1986:

<u>INGREDIENT NAME (CAS NUMBER)</u>	<u>Date Listed</u>
Benzene	2/27/1987
Ethyl benzene	6/11/2004
Toluene	1/1/1991

## CANADIAN REGULATORY INFORMATION (WHMIS)

Class B, Division 2 (Flammable Liquid)

Class D, Division 2A (Very toxic by other means) and Class D, Division 2B (Toxic by other means)

## 16. OTHER INFORMATION

<b><u>NFPA® HAZARD RATING</u></b>	HEALTH:	1	Slight
	FIRE:	3	Serious
	REACTIVITY:	0	Minimal
<b><u>HMIS® HAZARD RATING</u></b>	HEALTH:	1 *	Slight
	FIRE:	3	Serious
	PHYSICAL:	0	Minimal
			* CHRONIC

**SUPERSEDES MSDS DATED:** 07/01/06

### ABBREVIATIONS:

AP = Approximately      < = Less than      > = Greater than  
N/A = Not Applicable      N/D = Not Determined      ppm = parts per million

### ACRONYMS:

ACGIH	American Conference of Governmental Industrial Hygienists	CERCLA	Comprehensive Emergency Response, Compensation, and Liability Act
AIHA	American Industrial Hygiene Association	DOT	U.S. Department of Transportation
ANSI	American National Standards Institute (212)642-4900		[General Info: (800)467-4922]
API	American Petroleum Institute (202)682-8000	EPA	U.S. Environmental Protection Agency
		HMIS	Hazardous Materials Information System

Revision Date: 09/25/2007

Page 8 of 9



MATERIAL SAFETY DATA SHEET			
<b>Gasoline, All Grades</b>		<b>MSDS No. 9950</b>	
IARC	International Agency For Research On Cancer	REL	Recommended Exposure Limit (NIOSH)
MSHA	Mine Safety and Health Administration	SARA	Superfund Amendments and Reauthorization Act of 1986 Title III
NFPA	National Fire Protection Association (617)770-3000	SCBA	Self-Contained Breathing Apparatus
NIOSH	National Institute of Occupational Safety and Health	SPCC	Spill Prevention, Control, and Countermeasures
NOIC	Notice of Intended Change (proposed change to ACGIH TLV)	STEL	Short-Term Exposure Limit (generally 15 minutes)
NTP	National Toxicology Program	TLV	Threshold Limit Value (ACGIH)
OPA	Oil Pollution Act of 1990	TSCA	Toxic Substances Control Act
OSHA	U.S. Occupational Safety & Health Administration	TWA	Time Weighted Average (8 hr.)
PEL	Permissible Exposure Limit (OSHA)	WEEL	Workplace Environmental Exposure Level (AIHA)
RCRA	Resource Conservation and Recovery Act	WHMIS	Workplace Hazardous Materials Information System (Canada)


#### DISCLAIMER OF EXPRESSED AND IMPLIED WARRANTIES

Information presented herein has been compiled from sources considered to be dependable, and is accurate and reliable to the best of our knowledge and belief, but is not guaranteed to be so. Since conditions of use are beyond our control, we make no warranties, expressed or implied, except those that may be contained in our written contract of sale or acknowledgment.

Vendor assumes no responsibility for injury to vendee or third persons proximately caused by the material if reasonable safety procedures are not adhered to as stipulated in the data sheet. Additionally, vendor assumes no responsibility for injury to vendee or third persons proximately caused by abnormal use of the material, even if reasonable safety procedures are followed. Furthermore, vendee assumes the risk in their use of the material.



<b>MATERIAL SAFETY DATA SHEET</b>	
<b>Diesel Fuel (All Types)</b>	<b>MSDS No. 9909</b>

<b>EMERGENCY OVERVIEW</b> <b>CAUTION!</b> <b>OSHA/NFPA COMBUSTIBLE LIQUID - SLIGHT TO MODERATE IRRITANT</b> <b>EFFECTS CENTRAL NERVOUS SYSTEM</b> <b>HARMFUL OR FATAL IF SWALLOWED</b> Moderate fire hazard. Avoid breathing vapors or mists. May cause dizziness and drowsiness. May cause moderate eye irritation and skin irritation (rash). Long-term, repeated exposure may cause skin cancer. If ingested, do NOT induce vomiting, as this may cause chemical pneumonia (fluid in the lungs).	 NFPA 704 (Section 16)
---	--

**1. CHEMICAL PRODUCT AND COMPANY INFORMATION**

Hess Corporation  
1 Hess Plaza  
Woodbridge, NJ 07095-0961

EMERGENCY TELEPHONE NUMBER (24 hrs): **CHEMTREC (800) 424-9300**  
COMPANY CONTACT (business hours): Corporate Safety (732) 750-6000  
MSDS INTERNET WEBSITE: [www.hess.com](http://www.hess.com) (See Environment, Health, Safety & Social Responsibility)

**SYNONYMS:** Ultra Low Sulfur Diesel (ULSD); Low Sulfur Diesel; Motor Vehicle Diesel Fuel; Diesel Fuel #2; Dyed Diesel Fuel; Non-Road, Locomotive and Marine Diesel Fuel; Tax-exempt Diesel Fuel

See Section 16 for abbreviations and acronyms.

**2. COMPOSITION and CHEMICAL INFORMATION ON INGREDIENTS**

INGREDIENT NAME (CAS No.)	CONCENTRATION PERCENT BY WEIGHT
Diesel Fuel (68476-34-6)	100
Naphthalene (91-20-3)	Typically < 0.01

A complex mixture of hydrocarbons with carbon numbers in the range C9 and higher. Diesel fuel may be dyed (red) for tax purposes. May contain a multifunctional additive.

**3. HAZARDS IDENTIFICATION****EYES**

Contact with liquid or vapor may cause mild irritation.

**SKIN**

May cause skin irritation with prolonged or repeated contact. Practically non-toxic if absorbed following acute (single) exposure. Liquid may be absorbed through the skin in toxic amounts if large areas of skin are repeatedly exposed.

**INGESTION**

The major health threat of ingestion occurs from the danger of aspiration (breathing) of liquid drops into the lungs, particularly from vomiting. Aspiration may result in chemical pneumonia (fluid in the lungs), severe lung damage, respiratory failure and even death.

Ingestion may cause gastrointestinal disturbances, including irritation, nausea, vomiting and diarrhea, and central nervous system (brain) effects similar to alcohol intoxication. In severe cases, tremors, convulsions, loss of consciousness, coma, respiratory arrest, and death may occur.



**MATERIAL SAFETY DATA SHEET****Diesel Fuel (All Types)****MSDS No. 9909****INHALATION**

Excessive exposure may cause irritations to the nose, throat, lungs and respiratory tract. Central nervous system (brain) effects may include headache, dizziness, loss of balance and coordination, unconsciousness, coma, respiratory failure, and death.

**WARNING:** the burning of any hydrocarbon as a fuel in an area without adequate ventilation may result in hazardous levels of combustion products, including carbon monoxide, and inadequate oxygen levels, which may cause unconsciousness, suffocation, and death.

**CHRONIC EFFECTS and CARCINOGENICITY**

Similar products produced skin cancer and systemic toxicity in laboratory animals following repeated applications. The significance of these results to human exposures has not been determined - see Section 11 Toxicological Information.

IARC classifies whole diesel fuel exhaust particulates as probably carcinogenic to humans (Group 2A). NIOSH regards whole diesel fuel exhaust particulates as a potential cause of occupational lung cancer based on animal studies and limited evidence in humans.

**MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE**

Irritation from skin exposure may aggravate existing open wounds, skin disorders, and dermatitis (rash).

**4. FIRST AID MEASURES****EYES**

In case of contact with eyes, immediately flush with clean, low-pressure water for at least 15 min. Hold eyelids open to ensure adequate flushing. Seek medical attention.

**SKIN**

Remove contaminated clothing. Wash contaminated areas thoroughly with soap and water or waterless hand cleanser. Obtain medical attention if irritation or redness develops.

**INGESTION**

DO NOT INDUCE VOMITING. Do not give liquids. Obtain immediate medical attention. If spontaneous vomiting occurs, lean victim forward to reduce the risk of aspiration. Monitor for breathing difficulties. Small amounts of material which enter the mouth should be rinsed out until the taste is dissipated.

**INHALATION**

Remove person to fresh air. If person is not breathing provide artificial respiration. If necessary, provide additional oxygen once breathing is restored if trained to do so. Seek medical attention immediately.

**5. FIRE FIGHTING MEASURES****FLAMMABLE PROPERTIES:**

FLASH POINT:	> 125 °F (> 52 °C) minimum PMCC
AUTOIGNITION POINT:	494 °F (257 °C)
OSHA/NFPA FLAMMABILITY CLASS:	2 (COMBUSTIBLE)
LOWER EXPLOSIVE LIMIT (%):	0.6
UPPER EXPLOSIVE LIMIT (%):	7.5

**FIRE AND EXPLOSION HAZARDS**

Vapors may be ignited rapidly when exposed to heat, spark, open flame or other source of ignition. When mixed with air and exposed to an ignition source, flammable vapors can burn in the open or explode in confined spaces. Being heavier than air, vapors may travel long distances to an ignition source and flash back. Runoff to sewer may cause fire or explosion hazard.

**EXTINGUISHING MEDIA**

SMALL FIRES: Any extinguisher suitable for Class B fires, dry chemical, CO2, water spray, fire fighting foam, or Halon.



**MATERIAL SAFETY DATA SHEET****Diesel Fuel (All Types)****MSDS No. 9909**

**LARGE FIRES:** Water spray, fog or fire fighting foam. Water may be ineffective for fighting the fire, but may be used to cool fire-exposed containers.

**FIRE FIGHTING INSTRUCTIONS**

Small fires in the incipient (beginning) stage may typically be extinguished using handheld portable fire extinguishers and other fire fighting equipment.

Firefighting activities that may result in potential exposure to high heat, smoke or toxic by-products of combustion should require NIOSH/MSHA- approved pressure-demand self-contained breathing apparatus with full facepiece and full protective clothing.

Isolate area around container involved in fire. Cool tanks, shells, and containers exposed to fire and excessive heat with water. For massive fires the use of unmanned hose holders or monitor nozzles may be advantageous to further minimize personnel exposure. Major fires may require withdrawal, allowing the tank to burn. Large storage tank fires typically require specially trained personnel and equipment to extinguish the fire, often including the need for properly applied fire fighting foam.

See Section 16 for the NFPA 704 Hazard Rating.

**6. ACCIDENTAL RELEASE MEASURES**

ACTIVATE FACILITY'S SPILL CONTINGENCY OR EMERGENCY RESPONSE PLAN.

Evacuate nonessential personnel and remove or secure all ignition sources. Consider wind direction; stay upwind and uphill, if possible. Evaluate the direction of product travel, diking, sewers, etc. to confirm spill areas. Spills may infiltrate subsurface soil and groundwater; professional assistance may be necessary to determine the extent of subsurface impact.

Carefully contain and stop the source of the spill, if safe to do so. Protect bodies of water by diking, absorbents, or absorbent boom, if possible. Do not flush down sewer or drainage systems, unless system is designed and permitted to handle such material. The use of fire fighting foam may be useful in certain situations to reduce vapors. The proper use of water spray may effectively disperse product vapors or the liquid itself, preventing contact with ignition sources or areas/equipment that require protection.

Take up with sand or other oil absorbing materials. Carefully shovel, scoop or sweep up into a waste container for reclamation or disposal - caution, flammable vapors may accumulate in closed containers. Response and clean-up crews must be properly trained and must utilize proper protective equipment (see Section 8).

**7. HANDLING and STORAGE****HANDLING PRECAUTIONS**

Handle as a combustible liquid. Keep away from heat, sparks, and open flame! Electrical equipment should be approved for classified area. Bond and ground containers during product transfer to reduce the possibility of static-initiated fire or explosion.

Diesel fuel, and in particular low and ultra low sulfur diesel fuel, has the capability of accumulating a static electrical charge of sufficient energy to cause a fire/explosion in the presence of lower flashpoint products such as gasoline. The accumulation of such a static charge occurs as the diesel flows through pipelines, filters, nozzles and various work tasks such as tank/container filling, splash loading, tank cleaning; product sampling; tank gauging; cleaning, mixing, vacuum truck operations, switch loading, and product agitation. There is a greater potential for static charge accumulation in cold temperature, low humidity conditions.

Documents such as 29 CFR OSHA 1910.106 "Flammable and Combustible Liquids, NFPA 77 Recommended Practice on Static Electricity, API 2003 "Protection Against Ignitions Arising Out of Static, Lightning, and Stray Currents and ASTM D4865 "Standard Guide for Generation and Dissipation of Static



## MATERIAL SAFETY DATA SHEET

**Diesel Fuel (All Types)**
**MSDS No. 9909**

Electricity in Petroleum Fuel Systems" address special precautions and design requirements involving loading rates, grounding, bonding, filter installation, conductivity additives and especially the hazards associated with "switch loading." ["Switch Loading" is when a higher flash point product (such as diesel) is loaded into tanks previously containing a low flash point product (such as gasoline) and the electrical charge generated during loading of the diesel results in a static ignition of the vapor from the previous cargo (gasoline).]

Note: When conductivity additives are used or are necessary the product should achieve 25 picosiemens/meter or greater at the handling temperature.

### **STORAGE PRECAUTIONS**

Keep away from flame, sparks, excessive temperatures and open flame. Use approved vented containers. Keep containers closed and clearly labeled. Empty product containers or vessels may contain explosive vapors. Do not pressurize, cut, heat, weld or expose such containers to sources of ignition.

Store in a well-ventilated area. This storage area should comply with NFPA 30 "Flammable and Combustible Liquid Code". Avoid storage near incompatible materials. The cleaning of tanks previously containing this product should follow API Recommended Practice (RP) 2013 "Cleaning Mobile Tanks In Flammable and Combustible Liquid Service" and API RP 2015 "Cleaning Petroleum Storage Tanks".

### **WORK/HYGIENIC PRACTICES**

Emergency eye wash capability should be available in the near proximity to operations presenting a potential splash exposure. Use good personal hygiene practices. Avoid repeated and/or prolonged skin exposure. Wash hands before eating, drinking, smoking, or using toilet facilities. Do not use as a cleaning solvent on the skin. Do not use solvents or harsh abrasive skin cleaners for washing this product from exposed skin areas. Waterless hand cleaners are effective. Promptly remove contaminated clothing and launder before reuse. Use care when laundering to prevent the formation of flammable vapors which could ignite via washer or dryer. Consider the need to discard contaminated leather shoes and gloves.

## **8. EXPOSURE CONTROLS and PERSONAL PROTECTION**

### **EXPOSURE LIMITS**

Components (CAS No.)	Source	Exposure Limits		Note
		TWA/STEL		
Diesel Fuel: (68476-34-6)	OSHA	5 mg/m, as mineral oil mist		A3, skin
	ACGIH	100 mg/m <sup>3</sup> (as totally hydrocarbon vapor) TWA		
Naphthalene (91-20-3)	OSHA	10 ppm TWA		A4, Skin
	ACGIH	10 ppm TWA / 15 ppm STEL		

### **ENGINEERING CONTROLS**

Use adequate ventilation to keep vapor concentrations of this product below occupational exposure and flammability limits, particularly in confined spaces.

### **EYE/FACE PROTECTION**

Safety glasses or goggles are recommended where there is a possibility of splashing or spraying.

### **SKIN PROTECTION**

Gloves constructed of nitrile, neoprene, or PVC are recommended. Chemical protective clothing such as of E.I. DuPont TyChem®, Saranex® or equivalent recommended based on degree of exposure. Note: The resistance of specific material may vary from product to product as well as with degree of exposure. Consult manufacturer specifications for further information.



<b>MATERIAL SAFETY DATA SHEET</b>
<b>Diesel Fuel (All Types)</b> <span style="float: right;"><b>MSDS No. 9909</b></span>

**RESPIRATORY PROTECTION**

A NIOSH/MSHA-approved air-purifying respirator with organic vapor cartridges or canister may be permissible under certain circumstances where airborne concentrations are or may be expected to exceed exposure limits or for odor or irritation. Protection provided by air-purifying respirators is limited. Refer to OSHA 29 CFR 1910.134, NIOSH Respirator Decision Logic, and the manufacturer for additional guidance on respiratory protection selection.

Use a positive pressure, air-supplied respirator if there is a potential for uncontrolled release, exposure levels are not known, in oxygen-deficient atmospheres, or any other circumstance where an air-purifying respirator may not provide adequate protection.

**9. PHYSICAL and CHEMICAL PROPERTIES****APPEARANCE**

Clear, straw-yellow liquid. Dyed fuel oil will be red or reddish-colored.

**ODOR**

Mild, petroleum distillate odor

**BASIC PHYSICAL PROPERTIES**

BOILING RANGE: 320 to 690 oF (160 to 366 °C)  
VAPOR PRESSURE: 0.009 psia @ 70 °F (21 °C)  
VAPOR DENSITY (air = 1): > 1.0  
SPECIFIC GRAVITY (H<sub>2</sub>O = 1): 0.83 to 0.88 @ 60 °F (16 °C)  
PERCENT VOLATILES: 100 %  
EVAPORATION RATE: Slow; varies with conditions  
SOLUBILITY (H<sub>2</sub>O): Negligible

**10. STABILITY and REACTIVITY**

**STABILITY:** Stable. Hazardous polymerization will not occur.

**CONDITIONS TO AVOID and INCOMPATIBLE MATERIALS**

Avoid high temperatures, open flames, sparks, welding, smoking and other ignition sources. Keep away from strong oxidizers; Viton ®; Fluorel ®

**HAZARDOUS DECOMPOSITION PRODUCTS**

Carbon monoxide, carbon dioxide and non-combusted hydrocarbons (smoke).

**11. TOXICOLOGICAL PROPERTIES****ACUTE TOXICITY**

Acute dermal LD50 (rabbits): > 5 ml/kg	Acute oral LD50 (rats): 9 ml/kg
Primary dermal irritation: extremely irritating (rabbits)	Draize eye irritation: non-irritating (rabbits)
Guinea pig sensitization: negative	

**CHRONIC EFFECTS AND CARCINOGENICITY**

Carcinogenic: OSHA: NO IARC: NO NTP: NO ACGIH: A3

Studies have shown that similar products produce skin tumors in laboratory animals following repeated applications without washing or removal. The significance of this finding to human exposure has not been determined. Other studies with active skin carcinogens have shown that washing the animal's skin with soap and water between applications reduced tumor formation.

**MUTAGENICITY (genetic effects)**

This material has been positive in a mutagenicity study.





<b>MATERIAL SAFETY DATA SHEET</b>
<b>Diesel Fuel (All Types)</b> <span style="float: right;"><b>MSDS No. 9909</b></span>

**12. ECOLOGICAL INFORMATION**

Keep out of sewers, drainage areas, and waterways. Report spills and releases, as applicable, under Federal and State regulations.

**13. DISPOSAL CONSIDERATIONS**

Consult federal, state and local waste regulations to determine appropriate disposal options.

**14. TRANSPORTATION INFORMATION**

PROPER SHIPPING NAME:	Diesel Fuel	Placard (International Only):
HAZARD CLASS and PACKING GROUP:	3, PG III	
DOT IDENTIFICATION NUMBER:	NA 1993 (Domestic)	
	UN 1202 (International)	
DOT SHIPPING LABEL:	None	



Use Combustible Placard if shipping in bulk domestically

**15. REGULATORY INFORMATION****U.S. FEDERAL, STATE, and LOCAL REGULATORY INFORMATION**

This product and its constituents listed herein are on the EPA TSCA Inventory. Any spill or uncontrolled release of this product, including any substantial threat of release, may be subject to federal, state and/or local reporting requirements. This product and/or its constituents may also be subject to other regulations at the state and/or local level. Consult those regulations applicable to your facility/operation.

**CLEAN WATER ACT (OIL SPILLS)**

Any spill or release of this product to "navigable waters" (essentially any surface water, including certain wetlands) or adjoining shorelines sufficient to cause a visible sheen or deposit of a sludge or emulsion must be reported immediately to the National Response Center (1-800-424-8802) as required by U.S. Federal Law. Also contact appropriate state and local regulatory agencies as required.

**CERCLA SECTION 103 and SARA SECTION 304 (RELEASE TO THE ENVIRONMENT)**

The CERCLA definition of hazardous substances contains a "petroleum exclusion" clause which exempts crude oil, refined, and unrefined petroleum products and any indigenous components of such. However, other federal reporting requirements (e.g., SARA Section 304 as well as the Clean Water Act if the spill occurs on navigable waters) may still apply.

**SARA SECTION 311/312 - HAZARD CLASSES**

<b><u>ACUTE HEALTH</u></b>	<b><u>CHRONIC HEALTH</u></b>	<b><u>FIRE</u></b>	<b><u>SUDDEN RELEASE OF PRESSURE</u></b>	<b><u>REACTIVE</u></b>
X	X	X	--	--

**SARA SECTION 313 - SUPPLIER NOTIFICATION**

This product may contain listed chemicals below the *de minimis* levels which therefore are not subject to the supplier notification requirements of Section 313 of the Emergency Planning and Community Right-To-Know Act (EPCRA) of 1986 and of 40 CFR 372. If you may be required to report releases of chemicals listed in 40 CFR 372.28, you may contact Hess Corporate Safety if you require additional information regarding this product.

**CALIFORNIA PROPOSITION 65 LIST OF CHEMICALS**

This product contains the following chemicals that are included on the Proposition 65 "List of Chemicals" required by the California Safe Drinking Water and Toxic Enforcement Act of 1986:

<b><u>INGREDIENT NAME (CAS NUMBER)</u></b>	<b><u>Date Listed</u></b>
Diesel Engine Exhaust (no CAS Number listed)	10/01/1990

**CANADIAN REGULATORY INFORMATION (WHMIS)**

Class B, Division 3 (Combustible Liquid) and Class D, Division 2, Subdivision B (Toxic by other means)



<b>MATERIAL SAFETY DATA SHEET</b>
<b>Diesel Fuel (All Types)</b> <span style="float: right;"><b>MSDS No. 9909</b></span>

**16. OTHER INFORMATION**

**NFPA® HAZARD RATING**

HEALTH:	0	
FIRE:	2	
REACTIVITY:	0	

Refer to NFPA 704 "Identification of the Fire Hazards of Materials" for further information

**HMIS® HAZARD RATING**

HEALTH:	1 *	* Chronic
FIRE:	2	
PHYSICAL:	0	

**SUPERSEDES MSDS DATED:** 02/28/2001

**ABBREVIATIONS:**

AP = Approximately      < = Less than      > = Greater than  
 N/A = Not Applicable      N/D = Not Determined      ppm = parts per million

**ACRONYMS:**

ACGIH	American Conference of Governmental Industrial Hygienists	NTP	National Toxicology Program
AIHA	American Industrial Hygiene Association	OPA	Oil Pollution Act of 1990
ANSI	American National Standards Institute (212) 642-4900	OSHA	U.S. Occupational Safety & Health Administration
API	American Petroleum Institute (202) 682-8000	PEL	Permissible Exposure Limit (OSHA)
CERCLA	Comprehensive Emergency Response, Compensation, and Liability Act	RCRA	Resource Conservation and Recovery Act
DOT	U.S. Department of Transportation [General info: (800) 467-4922]	REL	Recommended Exposure Limit (NIOSH)
EPA	U.S. Environmental Protection Agency	SARA	Superfund Amendments and Reauthorization Act of 1986 Title III
HMIS	Hazardous Materials Information System	SCBA	Self-Contained Breathing Apparatus
IARC	International Agency For Research On Cancer	SPCC	Spill Prevention, Control, and Countermeasures
MSHA	Mine Safety and Health Administration	STEL	Short-Term Exposure Limit (generally 15 minutes)
NFPA	National Fire Protection Association (617)770-3000	TLV	Threshold Limit Value (ACGIH)
NIOSH	National Institute of Occupational Safety and Health	TSCA	Toxic Substances Control Act
NOIC	Notice of Intended Change (proposed change to ACGIH TLV)	TWA	Time Weighted Average (8 hr.)
		WEEL	Workplace Environmental Exposure Level (AIHA)
		WHMIS	Canadian Workplace Hazardous Materials Information System

**DISCLAIMER OF EXPRESSED AND IMPLIED WARRANTIES**

Information presented herein has been compiled from sources considered to be dependable, and is accurate and reliable to the best of our knowledge and belief, but is not guaranteed to be so. Since conditions of use are beyond our control, we make no warranties, expressed or implied, except those that may be contained in our written contract of sale or acknowledgment.

Vendor assumes no responsibility for injury to vendee or third persons proximately caused by the material if reasonable safety procedures are not adhered to as stipulated in the data sheet. Additionally, vendor assumes no responsibility for injury to vendee or third persons proximately caused by abnormal use of the material, even if reasonable safety procedures are followed. Furthermore, vendee assumes the risk in their use of the material.

JET A-1 WITH AIA

142-017

Revision Number: 04

**Avjet Holding Inc.**  
**Material Safety Data Sheet**

Effective Date: 2016-01-01

Supersedes: 2013-01-01

Class B3 Combustible Class D2B Other Toxic  
Liquid Effects - Skin Irritant**1. PRODUCT AND COMPANY IDENTIFICATION**

**PRODUCT:** JET A-1 WITH AIA  
**SYNONYMS:** Aviation Turbine Fuel (Kerosene Type)  
May contain anti-icing additive (Diethylene Glycol Monomethyl Ether)  
**PRODUCT USE:** Fuel Solvent  
**MSDS Number:** 142-017

**MANUFACTURER**  
Avjet Holding Inc.**TELEPHONE NUMBERS**  
Avjet Emergency Number

1-866-472-0007

900, Lemire Boulevard  
Drummondville, QC Canada  
J2C 7W8For general information:  
For MSDS information:(819) 479-1000  
(819) 479-1000

This MSDS was prepared by the Toxicology and Product Stewardship Section of Avjet Holding Inc.

**2. COMPOSITION/INFORMATION ON INGREDIENTS**

Component Name	CAS Number	% Range	WHMIS Controlled
Kerosene (Petroleum), Hydrodesulfurized	64742-81-0	60 - 100	Yes

See Section 8 for Occupational Exposure Guidelines.

**3. HAZARDS IDENTIFICATION****Physical Description:** Liquid Bright Clear Hydrocarbon Odour**Routes of Exposure:** Exposure will most likely occur through skin contact or inhalation.**Hazards:**

JET A-1 WITH AIA

142-017

Revision Number: 04

**Handling:**

Combustible Liquid.  
Irritating to skin.  
Vapours are moderately irritating to the eyes.  
Ingestion may result in vomiting. Avoid aspiration of vomitus into lungs as small quantities may result in aspiration pneumonitis.  
Vapours are moderately irritating to the respiratory passages.  
Eliminate all ignition sources.  
Avoid prolonged exposure to vapours.  
Wear suitable gloves and eye protection.  
Bond and ground transfer containers and equipment to avoid static accumulation.  
Empty containers are hazardous, may contain flammable / explosive dusts, liquid residue or vapours. Keep away from sparks and open flames.

For further information on health effects, see Section 11.

**4. FIRST AID**

**Eyes:** Flush eyes with water for at least 15 minutes while holding eyelids open. If irritation occurs and persists, obtain medical attention.

**Skin:** Wash contaminated skin with mild soap and water for 15 minutes. If irritation occurs and persists, obtain medical attention.

**Ingestion:** DO NOT INDUCE VOMITING! OBTAIN MEDICAL ATTENTION IMMEDIATELY. Guard against aspiration into lungs by having the individual turn on to their left side. If vomiting occurs spontaneously keep head below hips to prevent aspiration of liquid into the lungs.

**Inhalation:** Remove victim from further exposure and restore breathing, if required. Obtain medical attention.

**Notes to Physician:** The main hazard following accidental ingestion is aspiration of the liquid into the lungs producing chemical pneumonitis. If more than 2.0 mL/kg has been ingested, vomiting should be induced with supervision. If symptoms such as loss of gag reflex, convulsions or unconsciousness occur before vomiting, gastric lavage with a cuffed endotracheal tube should be considered.

**5. FIRE FIGHTING MEASURES**

**Extinguishing Media:** Carbon Dioxide  
Foam  
Dry Chemical  
Water Fog

**Firefighting Instructions:** Caution - Combustible. Vapour forms a flammable/explosive mixture with air between upper and lower flammable limits. Vapours may travel along ground and flashback along vapour trail may occur. Product will float and can be reignited on surface of water. Do not use a direct stream of water as it may spread fire. Containers exposed to intense heat from fires should be cooled with water to prevent vapour pressure buildup which could result in container rupture. Container areas exposed to direct flame contact should be cooled with large quantities of water as needed to prevent weakening of container structure. Do not enter confined fire space without adequate protective clothing and an approved positive pressure self-contained breathing apparatus.



JET A-1 WITH AIA

142-017

Revision Number: 04

**Hazardous Combustion Products:** A complex mixture of airborne solid, liquid, particulates and gases will evolve when this material undergoes pyrolysis or combustion. Carbon dioxide, carbon monoxide and unidentified organic compounds may be formed upon combustion.

## 6. ACCIDENTAL RELEASE MEASURES

Issue warning "Combustible". Eliminate all ignition sources. Isolate hazard area and restrict access. Handling equipment must be grounded. Try to work upwind of spill. Avoid direct contact with material. Wear appropriate breathing apparatus (if applicable) and protective clothing. Stop leak only if safe to do so. Dike and contain land spills; contain water spills by booming. Use water fog to knock down vapours; contain runoff. Absorb residue or small spills with absorbent material and remove to non-leaking containers for disposal. Recommended materials: Clay or Sand Flush area with water to remove trace residue. Dispose of recovered material as noted under Disposal Considerations. Notify appropriate environmental agency(ies).

## 7. HANDLING AND STORAGE

**Handling:** Avoid excessive heat, sparks, open flames and all other sources of ignition. Fixed equipment as well as transfer containers and equipment should be grounded to prevent accumulation of static charge. Vapours are heavier than air and will settle and collect in low areas and pits, displacing breathing air. Extinguish pilot lights, cigarettes and turn off other sources of ignition prior to use and until all vapours are gone. Vapours may accumulate and travel to distant ignition sources and flashback. Do not cut, drill, grind, weld or perform similar operations on or near containers. Empty containers are hazardous, may contain flammable/explosive dusts, residues or vapours. Do not pressurize drum containers to empty them. Wash with soap and water prior to eating, drinking, smoking, applying cosmetics or using toilet facilities. Launder contaminated clothing prior to reuse. Use good personal hygiene. Combustible.

**Storage:** Store in a cool, dry, well ventilated area, away from heat and ignition sources. Keep container tightly closed.

## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

THE FOLLOWING INFORMATION, WHILE APPROPRIATE FOR THIS PRODUCT, IS GENERAL IN NATURE. THE SELECTION OF PERSONAL PROTECTIVE EQUIPMENT WILL VARY DEPENDING ON THE CONDITIONS OF USE.

### OCCUPATIONAL EXPOSURE LIMITS (Current ACGIH TLV/TWA unless otherwise noted):

Kerosene/Jet fuels, as total hydrocarbon vapour (skin) : 200 mg/m<sup>3</sup> ( Application restricted to conditions in which there are negligible aerosol exposures.)

Skin Notation: Absorption through skin, eyes and mucous membranes may contribute significantly to the total exposure.



JET A-1 WITH AIA

142-017

Revision Number: 04

**Mechanical Ventilation:** Use explosion-proof ventilation as required to control vapour concentrations. Concentrations in air should be maintained below the recommended threshold limit value if unprotected personnel are involved. Local ventilation recommended where mechanical ventilation is ineffective in controlling airborne concentrations below the recommended occupational exposure limit. Make up air should always be supplied to balance air exhausted (either generally or locally). For personnel entry into confined spaces (i.e. bulk storage tanks) a proper confined space entry procedure must be followed including ventilation and testing of tank atmosphere.

**PERSONAL PROTECTIVE EQUIPMENT:**

**Eye Protection:** Chemical safety goggles and/or full face shield to protect eyes and face, if product is handled such that it could be splashed into eyes. Provide an eyewash station in the area.

**Skin Protection:** Avoid contact with skin. Use protective clothing and gloves manufactured from nitrile. Safety showers should be available for emergency use.

**Respiratory Protection:** Avoid breathing vapour or mists. If exposure has the potential to exceed occupational exposure limits, use an appropriate NIOSH-approved respirator. Use a NIOSH-approved chemical cartridge respirator with organic vapour cartridges or use a NIOSH-approved supplied-air respirator.

**9. PHYSICAL DATA**

**Physical State:** Liquid

**Appearance:** Bright Clear

**Odour:** Hydrocarbon Odour

**Odour Threshold:** Not available

**Freezing/Pour Point:** Freeze Point < -47 °C

**Boiling Point:** 145 - 300 °C

**Density:** 775 - 840 kg/m<sup>3</sup> @ 15 °C

**Vapour Density (Air = 1):** Not available

**Vapour Pressure (absolute):** 1 - 1.4 kPa @ 37.8 °C

**pH:** Not available

**Flash Point:** Tag Closed Cup > 43 °C

**Lower Explosion Limit:** 0.7 % (vol.)

**Upper Explosion Limit:** 5 % (vol.)

**Autoignition Temperature:** 210 °C

**Viscosity:** < 8 cSt @ -20 °C

**Evaporation Rate (n-BuAc = 1):** Not available

**Partition Coefficient (log K<sub>ow</sub>):** 3.3 - 6

**Water Solubility:** Insoluble

**Other Solvents:** Hydrocarbon Solvents

**10. STABILITY AND REACTIVITY**

**Chemically Stable:** Yes

**Hazardous Polymerization:** No

**Sensitive to Mechanical Impact:** No

**Sensitive to Static Discharge:** Yes

**Hazardous Decomposition Products:** Thermal decomposition products are highly dependent on combustion conditions.

**Incompatible Materials:** Avoid strong oxidizing agents.

Page 4 of 7

JET A-1 WITH AIA

142-017

Revision Number: 04

**Conditions of Reactivity:**

Avoid excessive heat, open flames and all ignition sources.

## 11. TOXICOLOGICAL INFORMATION

**Ingredient (or Product if not specified)**

Kerosene (Petroleum), Hydrodesulfurized

**Toxicological Data**

LD50 Dermal Rabbit &gt; 2000 mg/kg

LD50 Oral Rat &gt; 5000 mg/kg

**Routes of Exposure:**

Exposure will most likely occur through skin contact or inhalation.

**Irritancy:**

This product is expected to be irritating to skin but is not predicted to be a skin sensitizer.

**Chronic Effects:**

Prolonged and repeated contact with skin can cause defatting and drying of the skin resulting in skin irritation and dermatitis. Prolonged exposure to high vapour concentration can cause headache, dizziness, nausea, blurred vision and central nervous system depression.

**Pre-existing****Conditions:**

Pre-existing eye, skin and respiratory disorders may be aggravated by exposure to this product.

**Carcinogenicity and****Mutagenicity:**

The International Agency for Research on Cancer (IARC) considers that this product is not classifiable as to its carcinogenicity to humans. Middle distillates have caused skin cancers in laboratory animals when applied repeatedly and left in place between applications. This effect is believed to be caused by the continuous irritation of the skin. Good personal hygiene should be maintained to avoid this risk.

## 12. ECOLOGICAL INFORMATION

Do not allow product or runoff from fire control to enter storm or sanitary sewers, lakes, rivers, streams, or public waterways. Block off drains and ditches. Provincial regulations require and federal regulations may require that environmental and/or other agencies be notified of a spill incident. Spill area must be cleaned and restored to original condition or to the satisfaction of authorities. May cause physical fouling of aquatic organisms.

**Biodegradability:**

Not readily biodegradable.

Rapid volatilization.

**Bioaccumulation:**

Potential for bioaccumulation.

**Partition Coefficient (log  $K_{ow}$ ):**

3.3 - 6

**Aquatic Toxicity**

Product is expected to be toxic to aquatic organisms.

**Ingredient:**

Kerosene

(Petroleum),

Hydrodesulfurized

**Toxicological Data**

EL50 - growth rate (WAF method) Algae (72hr) 1 - 10 mg/L.

EL50 (WAF method) Daphnia Magna (48hr) 1 - 10 mg/L.

LL50 (WAF method) Rainbow Trout (96hr) 1 - 10 mg/L.

JET A-1 WITH AIA

142-017

Revision Number: 04

**Definition(s):**

LL and EL are the lethal loading concentration and effective loading concentration respectively. The concentration represents the amount of substance added to the system to obtain a toxic concentration. They replace the traditional LC and EC for low solubility substances.

WAF is the water accommodated fraction. A slightly soluble hydrocarbon is stirred into water and the insoluble portions are removed. The remaining solution is the water accommodated fraction.

**13. DISPOSAL CONSIDERATIONS**

Waste management priorities (depending on volumes and concentration of waste) are: 1. recycle (reprocess), 2. energy recovery (cement kilns, thermal power generation), 3. incineration, 4. disposal at a licenced waste disposal facility. Do not attempt to combust waste on-site. Incinerate at a licenced waste disposal site with approval of environmental authority.

**14. TRANSPORTATION INFORMATION****Canadian Road and Rail Shipping Classification:**

UN Number	UN1863
Proper Shipping Name	FUEL, AVIATION, TURBINE ENGINE
Hazard Class	Class 3 Flammable Liquids
Packing Group	PG III
Additional Information	Not Regulated in Containers Less Than or Equal to 450 Litres.
Shipping Description	FUEL, AVIATION, TURBINE ENGINE Class 3 UN1863 PG III Not Regulated in Containers Less Than or Equal to 450 Litres.

**15. REGULATORY INFORMATION**

This product has been classified in accordance with the hazard criteria of the *Controlled Products Regulations (CPR)* and the MSDS contains all the information required by the CPR.

<b>WHMIS Class:</b>	Class B3 Combustible Liquid Class D2B Other Toxic Effects - Skin Irritant
<b>DSL/NDL Status:</b>	This product, or all components, are listed on the Domestic Substances List, as required under the Canadian Environmental Protection Act.
<b>Other Regulatory Status:</b>	No Canadian federal standards.

**16. ADDITIONAL INFORMATION****LABEL STATEMENTS**

**Hazard Statement :** Combustible Liquid.  
Irritating to skin.

JET A-1 WITH AIA

142-017

Revision Number: 04

**Handling Statement:** Eliminate all ignition sources.  
Avoid prolonged exposure to vapours.  
Wear suitable gloves and eye protection.  
Bond and ground transfer containers and equipment to avoid static accumulation.  
Empty containers are hazardous, may contain flammable / explosive dusts,  
liquid residue or vapours. Keep away from sparks and open flames.

**First Aid Statement :** Wash contaminated skin with soap and water.  
Flush eyes with water.  
If overcome by vapours remove to fresh air.  
Do not induce vomiting.  
Obtain medical attention.

**Revisions:** This MSDS has been reviewed and updated.  
Changes have been made to:  
Section 3  
Section 4  
Section 5  
Section 7  
Section 8  
Section 9  
Section 12  
Section 14

**APPENDIX 6**  
**ABANDONMENT AND RESTORATION PLAN**

**NORTHQUEST LTD**  
**ABANDONMENT AND RESTORATION PLAN**  
**PISTOL BAY PROJECT, NUNAVUT**

Prepared by: Dwayne Car  
Revision 1: Stanley Robinson  
Revision 2: Stanley Robinson  
Revision 3: Stanley Robinson  
Revision 4: David Smith

May 2015  
March 2017  
November 2017  
December 2018  
June 2019

NORDGOLD (Northquest Ltd.)  
Suite 101 - 50 Richmond Street East,  
Toronto, Ontario  
Canada M5C 1N7  
[www.nordgold.com](http://www.nordgold.com)

**Table of Contents**

	Page
1. Preamble - - - - -	3
2. Introduction - - - - -	3
3. Background Information on the Campsite - - - - -	4
4. Schedule - - - - -	4
5. Infrastructure - - - - -	4
6. Seasonal Shutdown - - - - -	6
7. Final Abandonment Plan - - - - -	7
8. Contact Numbers for Relevant Organizations - - - - -	8

**NORDGOLD (Northquest Ltd.)**  
**Pistol Bay Project, Nunavut**  
**Abandonment and Restoration Plan**

## **1. Preamble**

This Abandonment and Restoration Plan (A&R Plan) is in effect until the expiry of Nordgold (Northquest Ltd.)'s water licence and land use permits, and applies to the work areas planned for the Pistol Bay property. These work areas lie within the municipal boundary of Whale Cove, on Crown Land and on Kivalliq Inuit Association (KIA) Inuit Owned (IOL) surface land.

Nordgold (Northquest Ltd) has received licences and permits from Indigenous Affairs and Northern Development Canada (INAC) for exploration activities on Crown Land, the Kivalliq Inuit Association for activities on Inuit Owned surface land (IOL), a water licence from the Nunavut Water Board (NWB) for water use and waste disposal related to the project, as well as permission from the Hamlet of Whale Cove and authorization from the Government of Nunavut Department of Community and Government Services (GN CGS) for activities on Commissioners Land.

Questions or concerns regarding this Plan can be directed to

David Smith  
Exploration Manager, Canada  
NORDGOLD (Northquest Ltd.)  
Suite 101 - 50 Richmond Street East,  
Toronto, Ontario  
Canada M5C 1N7

T: (416) 306-0954  
C: (647) 549-0954  
EMAIL: [david.smith@nordgold.com](mailto:david.smith@nordgold.com)  
[www.nordgold.com](http://www.nordgold.com)

## **2. Introduction**

This Plan has been prepared for one temporary campsite and several proposed diamond drilling locations on Nordgold (Northquest Ltd.)'s Pistol Bay project. The campsite is located at 62 21 05.2N, 92 45 19.7W.



The Pistol Bay camp has been in place since 2011 and is owned by Henik Lake Adventures Ltd. of Arviat. The camp consists of several aluminum framed 14' by 16' tents on plywood floors, a plywood kitchen, a plywood core logging tent, and can accommodate up to 35 people. Some structures were added by Nordgold (Northquest Ltd.) in 2016.

Exploration based out of the camp generally consists of prospecting, till sampling, geophysical surveys, mapping and diamond drilling.

### **3. Background Information on the Campsite**

The site is located on a wave-modified, flat-topped esker and is situated on an existing road that is capable of permitting standard vehicular travel. This road is connected to a road system that the Hamlet of Whale Cove constructed to allow for easy access to the mouth of the Wilson River for its residents to pursue traditional activities

### **4. Schedule**

The effective date of the plan is June 25, 2015. The restoration of the camp will occur when the program has been completed and will be finished prior to expiration of the renewed water licence, unless another renewal is applied for. Each drill site will be restored as soon as the drill is moved to a new location (progressive reclamation).

### **5. Infrastructure**

#### **Structures (prior to commencement of 2019 field season):**

- Thirteen x 14' x 16' Weatherhaven sleep tents heated with propane
- One 14 x 48' plywood kitchen heated with propane
- One 14' x 16' plywood shack heated with propane, and used for sample shipment preparation and sample drying. Previously, this building was the core shed.
- One 16' x 24' plywood core shack, heated with fuel oil.
- One 14' x 16' Weatherhaven shower/laundry facility, heated with propane, with an 8' x 16' extension which houses the laundry facilities, water storage tanks, water heater and water treatment system
- One 14' x 16' Weatherhaven core cutting tent
- One 14' x 16' Weatherhaven storage tent
- One 14' x 20' Weatherhaven office tent heated with propane
- One 8' x 8' plywood equipment shack
- Three plywood outhouses
- One heli-pad made of plywood framed with wooden pallets
- Two fuel caches stored in four "Insta berms" equipped with water drains
- Spill response equipment located beside fuel berms and heli-pad
- Two plywood generator shacks 8' x 16'
- One 16' x 8' extension to plywood core logging shack

**5**

- One 8' x 8' shed to contain electrical panels
- One 16' x 16' plywood dry (heated by fuel oil)
- One plywood emergency shelter (used at drill rig)

**Northquest Machinery (on-site prior to commencement of 2019 field season):**

- One 2013 Ford F250 ¾ ton pick-up Truck
- One 2014 TRX500FM Honda ATV
- One 2014 TRX420FE Honda ATV
- One 2011 TRX500 Honda ATV
- One 2016 TRX 500FM Honda ATV
- Two Honda 6500 generators
- One gas portable rock saw
- Two 33.1Kva generators (main power plant and spare for camp).
- Two 50 cc Honda water pumps
- One Smart Ash portable, multipurpose batch load incinerator
- One gas-powered hydraulic barrel crusher
- One Kubota M6060 tractor
- One Sure-track trailer model ST8214TLDD
- Two Vancon Core Saws, 3hp, electric

**Top Rank Diamond Drilling Limited machinery on site at commencement of 2018 field season:**

- Two Discovery 2 diamond drills, with 4 Perkins engines
- Three Honda generators
- One Yamaha generators
- One generic generator
- One Lincoln welder
- One Miller welder
- Seven Water pumps
- Four Honda 2" water pumps

**6. Seasonal Shutdowns****Buildings and Contents**

All doors on the Weatherhaven tents will be screwed shut before the camp is closed for the winter. All windows and doors on the plywood kitchen and core logging tent will be covered with plywood.

## **Vehicles**

The ATV's snowmobiles will be stored inside one tent or the core shed. The pick-up will be stored in Whale Cove.

## **Water System**

The pump and hoses will be drained. All will be stored in the winterized kitchen tent for the winter.

## **Fuel and Chemical Storage**

An inventory of fuel will be made at the end of each season and all drums will be inspected for possible leaks. The fuel will remain stored in the portable "Insta Berm" fuel berms. All empty drums will be temporarily stored at the camp before being crushed and shipped south for disposal. All empty propane cylinders will be returned to off-site facilities.

Drill additives and unused salt will be stored in the storage tent.

## **Waste**

### Combustible Waste

All combustible waste will be burned on site in an incinerator. Ash will be sealed in 45 gallon drums for transport to the Hamlet of Whale Cove's landfill.

### Non-Combustible Waste

All non-combustible waste will be transferred to the Whale Cove dump for disposal. This waste will only consist of metallic materials such as cans and steel strapping and wire.

Used batteries will be transported to Ontario for disposal.

### Used Motor Oil/waste fuel

Used motor oil and contaminated fuel will be sealed in 45 gallon drums and transported off site for disposal.

### Grey Water Sump

On-site septic system.

### Sewage

The outhouse sumps will be buried at the end of the season.

### **Drills and Drill Sites**

Prior to shutting down for the season, the drills will be secured at the final drill site of the season or returned to the camp and stored there.

All drill sites will be inspected upon completion of each hole. All combustible and metallic waste will be collected and sent to the Whale Cove dump site and all sumps will be filled. Casing will be cut off to ground level as soon as practicable after the hole collar has been surveyed. Photographs of each drill site before and after drilling will also be taken for inclusion the annual report that is sent to the NWB.

### **Contamination Clean Up**

Any soil at camp or the drill sites that has been contaminated will be treated according to procedures outlined in the Fuel Spill Contingency Plan. The soil will be transferred off site for disposal.

### **Inspection and Documentation**

A complete inspection of all disturbed areas at the camp and drill sites will be conducted prior to seasonal closure of the project. A full inventory of equipment will be made. Photographs will be taken of the campsite after it has been winterized.

## **7. Final Abandonment and Restoration**

### **Tents and Contents**

All tents and structures will be dismantled and removed, using a local contractor. All material will be taken to the Whale Cove airport or the port for final removal off site.

### **Equipment**

All equipment including the diamond drills, pumps and generators will be removed from the project site by truck and helicopter. All material will be taken to the Whale Cove airport or the port for final removal to off site.

### **Fuel Cache and Chemicals**

All fuel drums and chemical containers will be removed from the site. All sites that contained fuel will be inspected and any contamination will be dealt with according to the Spill Contingency Plan. Final photos of each fuel cache site will be taken.

### **Sumps**

All sumps will be inspected and backfilled. Final photos will be taken and forwarded to the NWB.

**Camp Site**

A final inspection will be made. Photos will be taken and forwarded to the NWB.

**Core Storage**

All drill core will be removed from the site unless specified otherwise by the Nunavut government.

**Drill Sites**

All drill sites will be inspected upon completion of each hole. All waste will be collected and transferred to the Whale Cove municipal dump site. All sumps will be backfilled. Each drill collar will be cut off to ground level. Photographs of each site will be taken and forwarded to the NWB.

**Contamination Clean Up**

Any contamination will be treated according to procedures laid down in the Fuel Spill Contingency Plan. Any contamination and subsequent clean-up will be documented with photographs. All contaminated waste will be transferred off-site for disposal.

**Inspection and Documentation**

A complete inspection of all areas will be conducted prior to closure. Photographs will be taken for use in the final report. All appropriate agencies will be contacted upon final clean up.

**8.0 Contact Numbers for Relevant Organizations**

Whale Cove Hamlet Office – (867) 896-9961

Nordgold (Northquest Ltd) – (416) 306-0954

NT – NU Spill Hot Line – (867) 920-8130

Henik Lake Adventures Ltd (owner of camp equipment) (867) 857-2978

## **APPENDIX 7**

### **PHOTOGRAPHS OF PISTOL BAY CAMP AND PUMP SITE**



Figure 6. Aerial View of the Pistol Bay Camp and water source

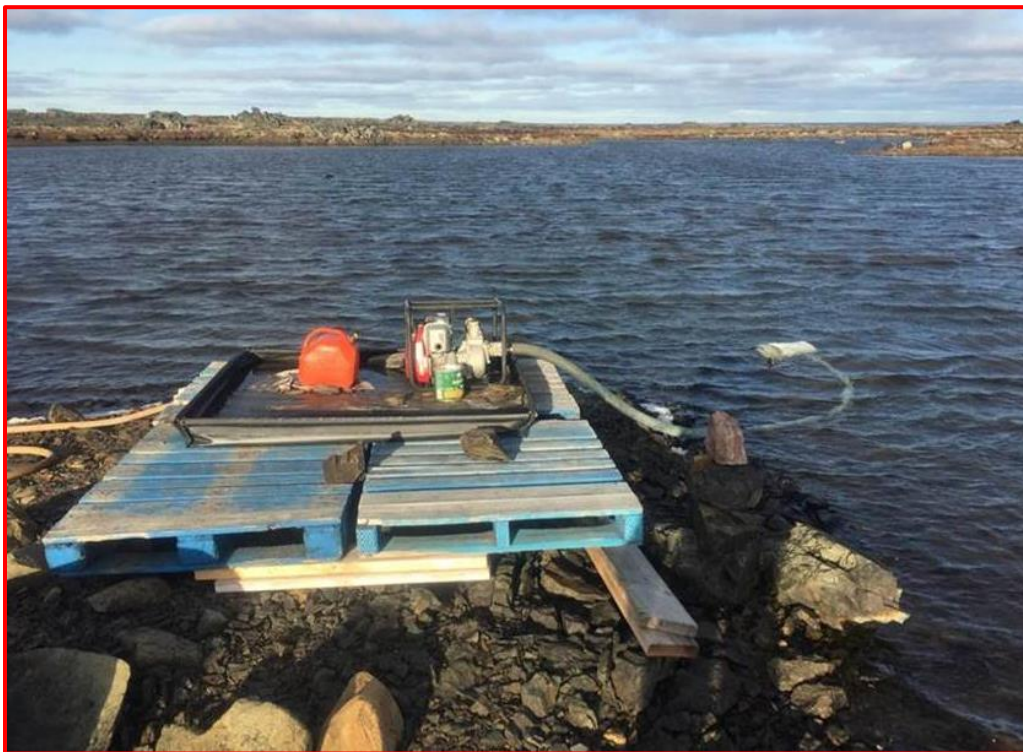


Figure 7. View of the Pistol Bay Camp water pump installation



## APPENDIX 8

### PHOTOGRAPHS OF DRILL SITES BEFORE, DURING AND AFTER DRILLING



Figure 8. Photo of pre-drilling collar site for DDH 19PB072



Figure 9. Photo after drilling for collar site of DDH 19PB072.





Figure 10. Photo of pre drilling collar site for DDH 19PB073.



Figure 11. Photo of DDH 19PB074 drilling in progress.





Figure 12. Photo of DDH 19PB075 drilling in progress.



Figure 13. Photo of after drilling collar site of DDH 19PB975 and DDH 19PB079 drilling in progress.



Figure 14. Photo of collar site of DDH 19PB075 after drilling.





Figure 15. Photo of DDH 19PB076A drilling in progress.



Figure 16. Photo of pre-drilling collar site for DDH 19PB077.





Figure 17. Photo of DDH 19PB077 in progress.



Figure 18. Photo of DDH 19PB078 drilling in progress.



Figure 19. Photo of DDH 19PB079 drilling in progress.



Figure 20. Photo of DDH 19PB080 drilling in progress.





Figure 21. Photo of pre drilling collar site for DDH 19PB081.

**APPENDIX 9****PHOTOGRAPHS OF DRILL WATER PUMPS AT WATER SOURCES**

Figure 22. Photo of water pump site for DDH 19PB072.



Figure 23. Photo of water pump site for DDH 19PB073.





Figure 24. Photo of water pump site for DDH 19PB074.



Figure 25. Photo of water pump site for DDH 19PB075.





Figure 26. Photo of water pump site for DDH 19PB076 and DDH 19PB076A.



Figure 27. Photo of water pump site for DDH 19PB077.





Figure 28. Photo of water pump site for DDH 19PB078.



Figure 29. Photo of water pump site for DDH 19PB079.



Figure 30. Photo of water pump site for DDHs 19PB080 and 19PB081.