Province of
British Columbia

Ministry of
Environment,
Lands and Parks

BC Environment

Skeena Region
Box 5000
Smithers
British Columbia
V0J 2N0
Telephone: (604) 847-7260
Facsimile: (604) 847-7591

January 25, 1994 File: PE-7980

REGISTERED MAIL

Catear Resources Limited
1500 885 West Georgia
Vancouver BC V6C 3H7

Dear Mr. Kruchkowski:

Re: Cancellation of Permit under the
Waste Management Act S.B.C. 1982, c41

As of FEB - 8 1994 Waste Management Permit No. PE-7980 in the name of Catear Resources Limited is hereby cancelled pursuant to Section 23 of the Waste Management Act, since the holder was a partnership which has been dissolved.

Yours truly,

T. Roberts
Regional Waste Manager

cc: Environment Canada, Environment Protection, Pacific Region

Province of
British Columbia

Ministry of
Environment

Waste Management
Northern Region
Bag 5000
Smithers, B.C.
V0J 2N0
Telephone: (604) 847-7260

YOUR FILE

OUR FILE PE-7980

REGISTERED MAIL

JUL 28 1988

Catear Resources Ltd.
3000 - 595 Burrard Street
Box 49052
Vancouver, British Columbia
V7X 1R3

Gentlemen:

LETTER OF TRANSMITTAL

Enclosed is a copy of Permit No. PE-7980 issued under the provisions of the Waste Management Act in the name of Catear Resources Ltd. Your attention is respectfully directed to the terms and conditions outlined in the Permit. An annual fee for Permit No. PE-7980 will be determined on the basis of your industrial code and capacity in accordance with the Waste Management Fees Regulation.

The administration of this Permit will be carried out by staff from our office located at 3726 Alfred Avenue, Smithers, British Columbia, telephone 847-7260 (mailing address: Bag 5000, Smithers, British Columbia, VOJ 2NO). Plans, data and reports pertinent to the Permit are to be submitted to the Regional Waste Manager at this address.

You will note that values have been expressed in the International System of Units (SI). These units are to be used in submitting monitoring results and any other information in connection with this Permit.

This Permit does not authorize entry upon, crossing over, or use for any purpose of private or Crown lands or works, unless and except as authorized by the owner of such lands or works. The responsibility for obtaining such authority shall rest with the Permittee.

Yours very truly,

R. J. Driedger, P.Eng.
Regional Waste Manager

Encl.

cc: Catear Resources Ltd.
Suite 400, 255 - 17th Avenue S.W.
Calgary, Alberta
T2S 2T8

cc: Catear Resources Ltd.
Box 311
Stewart, British Columbia
V0T 1W0

Rescan Environmental Services Ltd.
Suite 510
Coopers & Lybrand Building
1111 West Hastings Street
Vancouver, British Columbia
V6E 2J3

MINISTRY OF ENVIRONMENT

PERMIT

Under the Provisions of the Waste Management Act

Catear Resources Ltd.

3000 - 595 Burrard Street

Box 49052

Vancouver, British Columbia

V7X 1R3

is hereby authorized to discharge effluent

from a gold mine and mill

located near Brucejack Lake, British Columbia

to Goldpan Lake.

This permit has been issued under the terms and conditions prescribed in the attached appendices 01, 02, A-1, B-1, B-2, C-1 and C-2.

R. J. Driedger, P.Eng.
Regional Waste Manager

Date issued: JUL 28 1988

Permit No. PE-7980

Date amended:

ENV 2093

MINISTRY OF ENVIRONMENT

WASTE MANAGEMENT BRANCH

APPENDIX 01

to Permit No. PE-7980

(Effluent)

(a) The discharge of effluent to which this appendix is applicable is from a gold milling complex to Goldpan Lake located as shown on the attached Appendix A-1.

(b) The maximum rate at which effluent may be discharged is 430 cubic metres per day.

(c) The characteristics of the effluent shall be equivalent to or better than typical tailings from a gold mill employing gravity separation only.

(d) The works authorized are a tailings disposal system including, but not limited to, a tailings sump, pipeline, submerged outfall and related appurtenances approximately located as shown on the attached Appendix A-1.

(e) The location of the facilities from which the effluent originates and to which this appendix is appurtenant is Goldwedge Mineral Claim, Record Number 2430, Skeena Mining Division, District Lot 3357, Cassiar Land District.

(f) The location of the point of discharge and to which this appendix is appurtenant is Goldwedge Mineral Claim, Record Number 2430, Skeena Mining Division, District Lot 3357, Cassiar Land District.

(g) The works authorized must be complete and in operation when discharge commences.

Date issued: JUL 28 1988

Date amended:

R. J. Driedger, P.Eng.
Regional Waste Manager

MINISTRY OF ENVIRONMENT

WASTE MANAGEMENT BRANCH

APPENDIX 02

to Permit No. PE-7980

(Effluent)

(a) The discharge of effluent to which this appendix is applicable is from Goldpan Lake to Catear Creek as shown on the attached Appendix A-1.

(b) The maximum rate at which effluent may be discharged is 6546 cubic metres per day.

(c) The characteristics of the effluent shall be equivalent to or better than:

pH range	6.5 - 8.5
diss Al	0.50 mg/L
diss Cu	0.05 mg/L
diss Fe	0.30 mg/L
diss Pb	0.05 mg/L
diss Zn	0.20 mg/L
diss As	0.50 mg/L
Total Suspended Solids	75 mg/L

(d) The works authorized are a tailings impoundment (Goldpan Lake) and its associated natural outlet approximately located as shown on the attached Appendix A-1.

(e) The location of the facilities from which the effluent originates and to which this appendix is appurtenant is Goldwedge Mineral Claim, Record Number 2430, Skeena Mining Division, District Lot 3357, Cassiar Land District.

(f) The location of the point of discharge and to which this appendix is appurtenant is Red River Mineral Claim, Record Number 314, Skeena Mining Division.

(g) The works authorized must be complete and in operation when discharge commences.

Date issued: JUL 28 1988

Date amended:

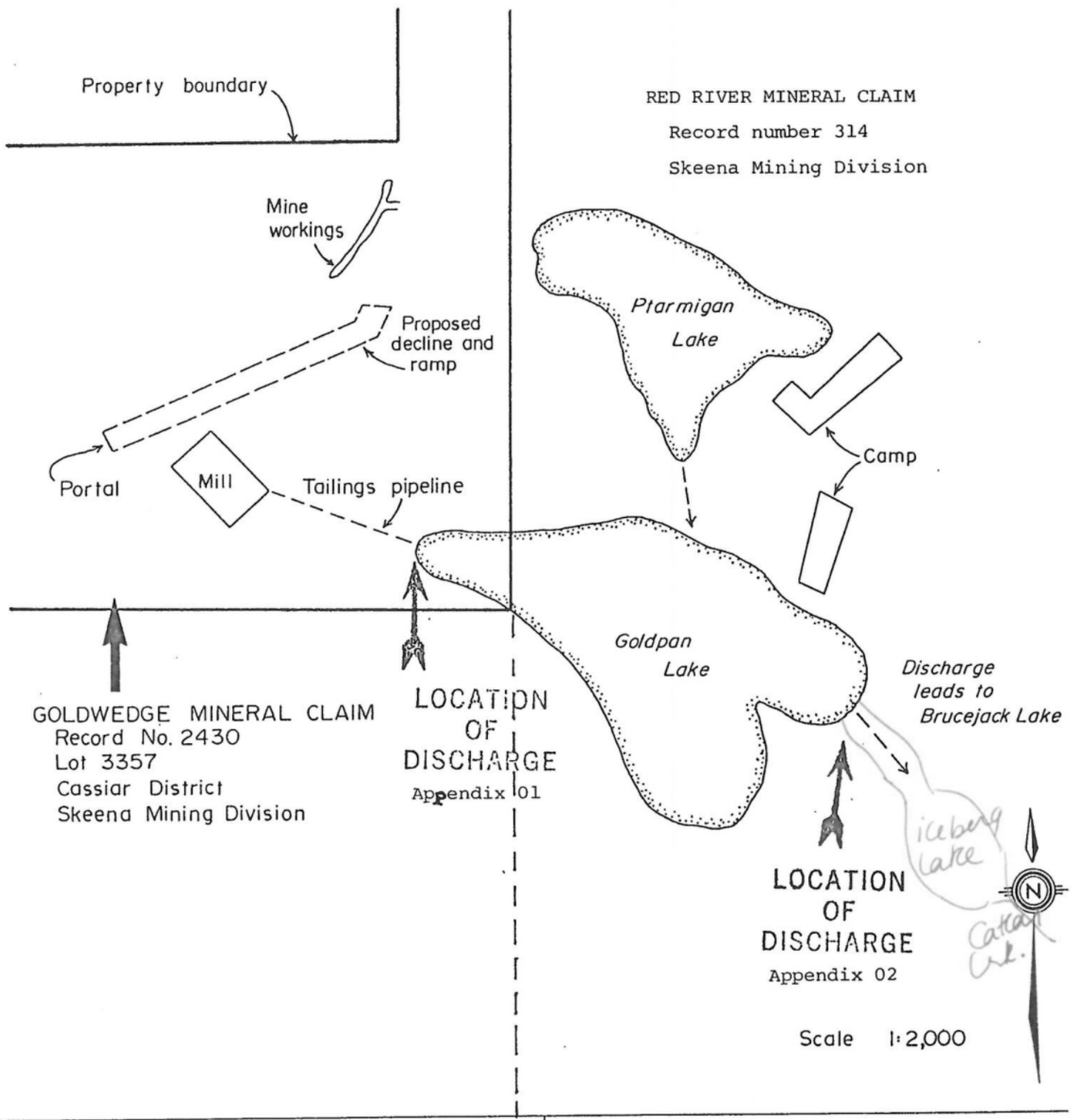
R. J. Driedger, P.Eng.
Regional Waste Manager

Province of British Columbia

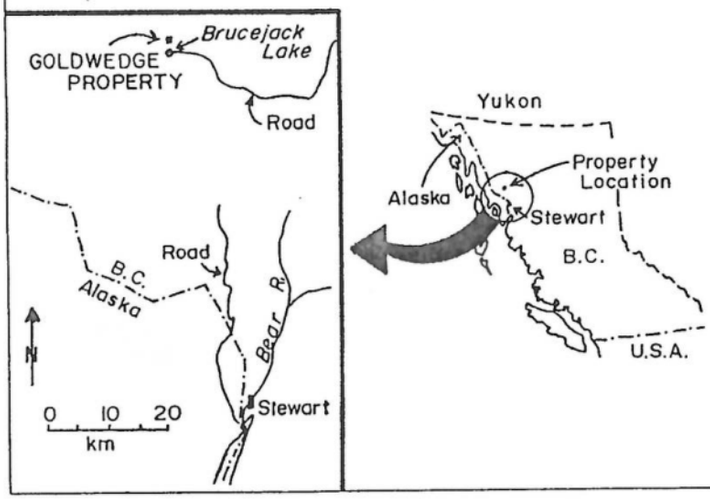
Ministry of Environment

WASTE . AGEMENT BRANCH

SITE PLAN



LOCATION MAP



Catear Resources Ltd.
(Name of applicant(s))

(Date) (Signature of applicant(s) or agent)

(FOR OFFICE USE ONLY)

JUL 28 1988
Date Issued

R. J. Driedger, P.Eng.
Regional Waste Manager

Date Amended

Appendix A-1 to Permit No. PE-7980

Approval No.

ENV 1987

MINISTRY OF ENVIRONMENT

WASTE MANAGEMENT BRANCH

APPENDIX B-1

to Permit No. PE-7980

1. MAINTENANCE OF WORKS

The Permittee shall inspect the pollution control works regularly and maintain them in good working order. Notify the Regional Waste Manager of any malfunction of these works.

2. EMERGENCY PROCEDURES

In the event of an emergency or condition beyond the control of the Permittee which prevents continuing operation of the approved method of pollution control, the Permittee shall immediately notify the Regional Waste Manager and take appropriate remedial action.

3. BYPASSES

The discharge of effluent which has bypassed the designated treatment works is prohibited unless the approval of the Director or the Regional Waste Manager is obtained and confirmed in writing.

4. PROCESS MODIFICATIONS

The Permittee shall notify the Regional Waste Manager prior to implementing changes to any process that may affect the quality and/or quantity of the discharge.

5. MILL REAGENTS

Cyanide and mercury are not approved reagents for this operation.

6. MILL PRODUCTION

Mill production is limited to the processing of 10,000 tonnes of ore.

7. WASTE ROCK DISPOSAL

All waste rock types which have shown a positive acid generation potential are to be submerged in the tailings impoundment.

R. J. Driedger, P.Eng.
Regional Waste Manager

Date issued: JUL 28 1988

Date amended:

MINISTRY OF ENVIRONMENT

WASTE MANAGEMENT BRANCH

APPENDIX C-1

to Permit No. PE-7980

1. MONITORING PROGRAM

The permittee shall conduct the following monitoring program as soon as discharge commences:

LOCATION	PARAMETERS	FREQUENCY
mill production	throughput, tonnes of ore per day tailings discharge, cubic metres per day	daily
tailings decant	pH, dissolved SO_4, Al, As, Cu, Fe, Mn, Pb, Zn	monthly
outlet of Goldpan Lake	pH, TSS, acidity, alkalinity, dissolved SO_4, total and dissolved Al, As, Cu, Fe, Mn, Pb, Zn	monthly
	toxicity - 96 hr LC_{50}	once, during the last week of operation
tailings solids	acid generation potential	once, during representative mill operating conditions

R. J. Driedger, P.Eng.
Regional Waste Manager

Date issued: JUL 28 1988

Date amended:

ENV. 2096 w-817

MINISTRY OF ENVIRONMENT

WASTE MANAGEMENT BRANCH

APPENDIX C-2

to Permit No. PE-7980

2. ANALYSES

a) Parameters other than toxicity and acid generation potential

Analyses are to be carried out in accordance with procedures described in the second edition (February, 1976) of "A Laboratory Manual for the Chemical Analysis of Waters, Wastewaters, Sediments and Biological Materials," or by suitable alternative procedures as approved by the Regional Waste Manager.

Copies of the above mentioned manual are available from the Environmental Laboratory, 3650 Wesbrook Crescent, Vancouver, British Columbia, V6S 2L2, at a cost of $25.00 and are also available for inspection at all Waste Management Offices.

b) Toxicity

Analyses for determining the toxicity of liquid effluents to fish shall be carried out in accordance with the procedures described in the "Laboratory Procedures for Measuring Acute Lethal Toxicity of Liquid Effluents to Fish" dated November, 1982.

Copies of the above mentioned manual are available from the Waste Management Branch, 810 Blanshard Street, Victoria, British Columbia, V8V 1X5, at a cost of $5.00, and are also available for inspection at all Waste Management Offices.

c) Acid generation potential

Analyses for acid generation potential are to be in accordance with the acid/base accounting procedure as described in the U.S. EPA publication number 600/2 - 78 - 054, March 1978, by Sobak et al.

3. REPORTING

Maintain data of analyses, mill production, waste rock characterization, and tailings characterization for inspection and submit the data, suitably tabulated, to the Regional Waste Manager for the previous month within 10 days of the end of that month. The first report is to be submitted by August 10, 1988, for the July reporting period

Submit a summary project report within 60 days of completion of the 10,000 tonne bulk sample.

R. J. Driedger, P.Eng.
Regional Waste Manager

Date issued: JUL 28 1988

ENV. 2096 W-817 Date amended:

MINISTRY OF ENVIRONMENT

WASTE MANAGEMENT BRANCH

APPENDIX B-2

to Permit No. PE-7980

8. WASTE ROCK CHARACTERIZATION

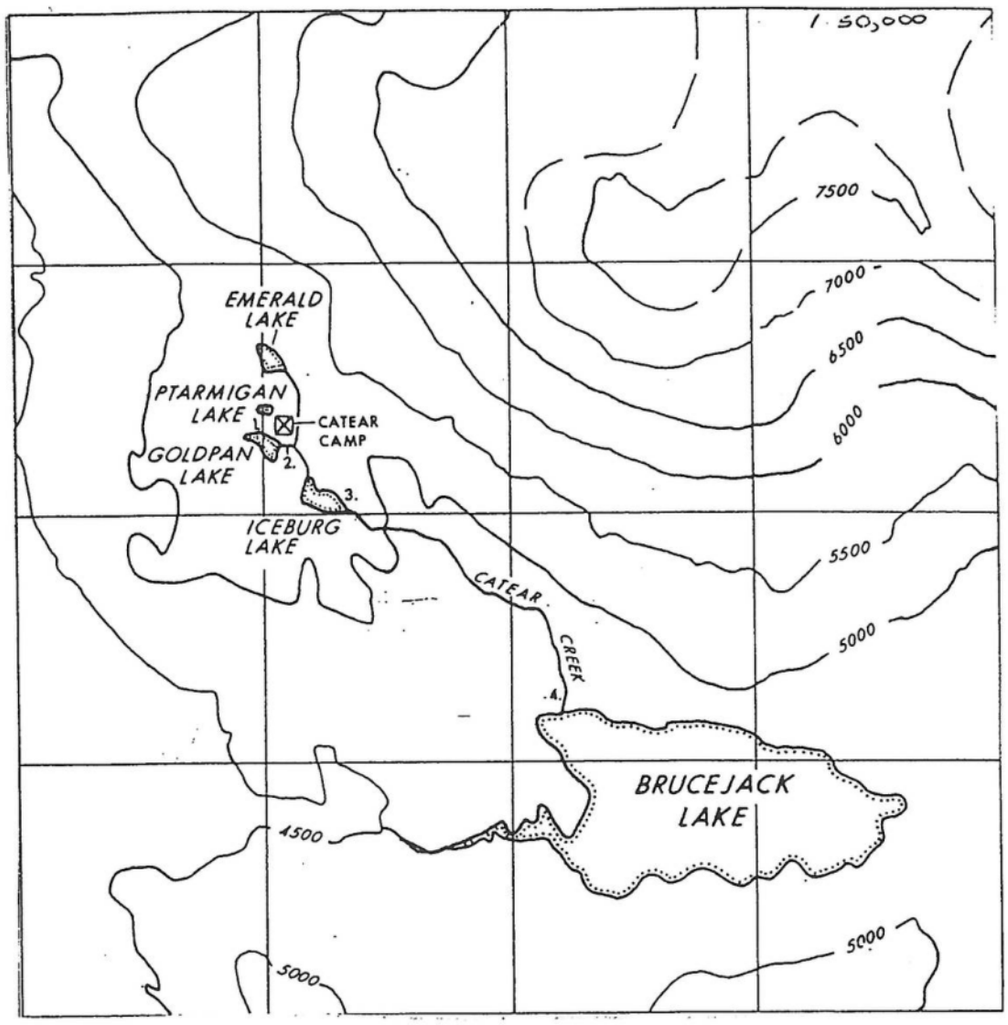
All waste rock types encountered during the term of this permit which have not previously been tested for acid generation potential are to be so tested and disposed of in a manner consistent with paragraph 7 above.

R. J. Driedger, P.Eng.
Regional Waste Manager

Date issued: JUL 28 1988

Date amended:

ENV. 2096 w-817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EMERALD LAKE
PTARMIGAN LAKE
GOLDPAN LAKE
CATEAR CAMP
ICEBURG LAKE
CATEAR CREEK
BRUCEJACK LAKE
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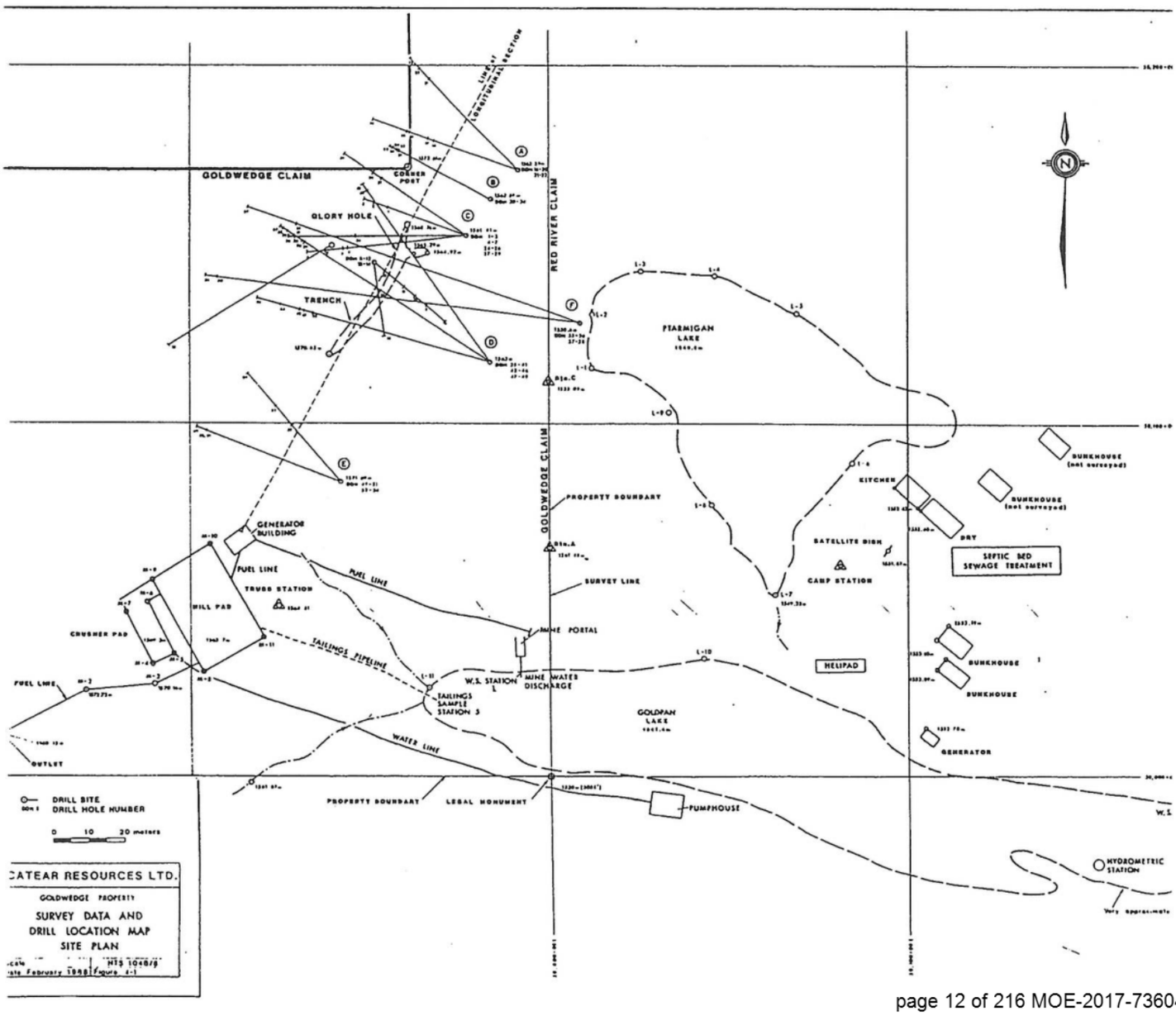
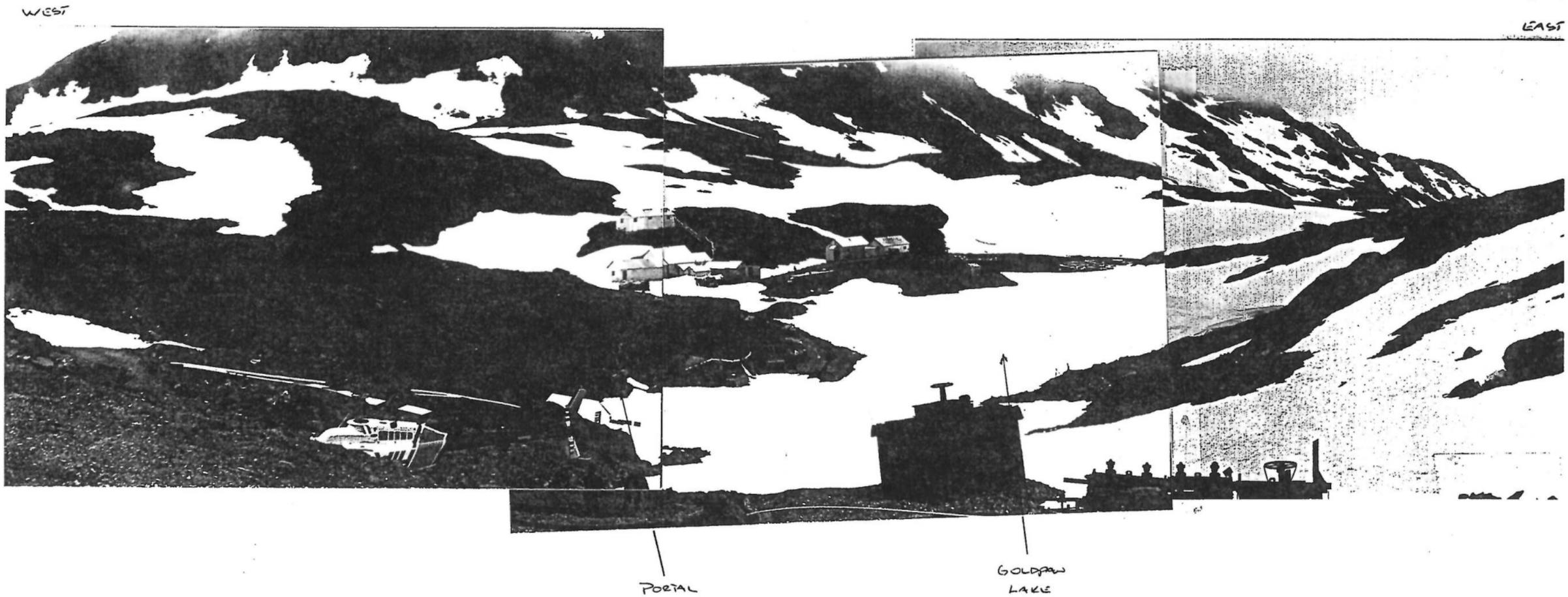
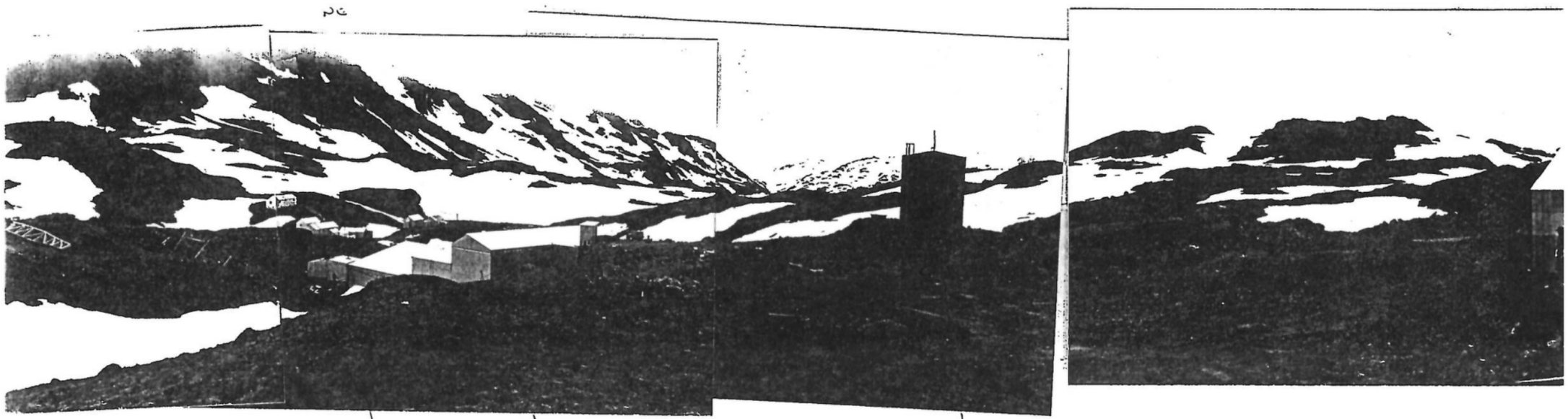
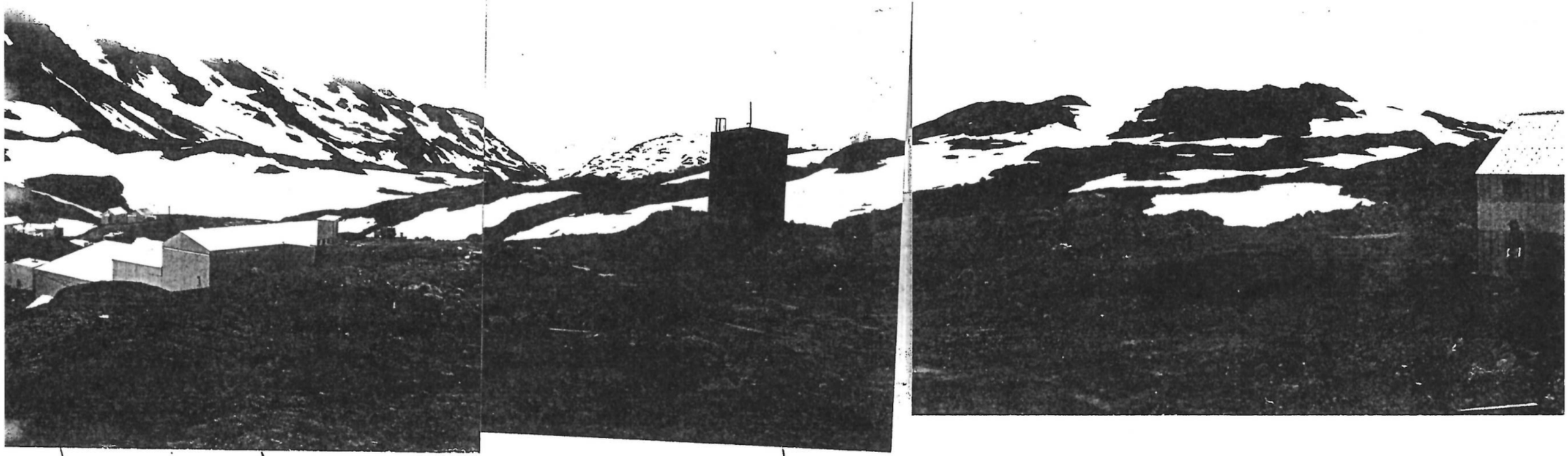

GOLDWEDGE CLAIM
CORNER POST
GLORY HOLE
TRENCH
RED RIVER CLAIM
PTARMIGAN LAKE
GOLDWEDGE CLAIM
PROPERTY BOUNDARY
GENERATOR BUILDING
FUEL LINE
TRUSS STATION
MILL PAD
CRUSHER PAD
TAILINGS PIPELINE
SURVEY LINE
MINE PORTAL
W.S. STATION 1
MINE WATER DISCHARGE
TAILINGS SAMPLE STATION 3
WATER LINE
OUTLET
GOLDPAN LAKE
PROPERTY BOUNDARY
LEGAL MONUMENT
PUMPHOUSE
KITCHEN
DRY
BUNKHOUSE (not surveyed)
BUNKHOUSE (not surveyed)
SATELLITE DISH
CAMP STATION
SEPTIC BED SEWAGE TREATMENT
HELIPAD
BUNKHOUSE
BUNKHOUSE
GENERATOR
HYDROMETRIC STATION
DRILL SITE
DRILL HOLE NUMBER
0 10 20 meters
CATEAR RESOURCES LTD.
GOLDWEDGE PROPERTY
SURVEY DATA AND DRILL LOCATION MAP
SITE PLAN
February 1988 Figure 2-1


WEST
EAST
PORTAL
GOLDPAW
LAKE


GENERATOR BUILDING
MILL
FUEL STORAGE

NE

SW



GENERATOR BUILDING

MILL

FUEL STORAGE

Province of British Columbia

Ministry of Environment
WASTE MANAGEMENT

MEMORANDUM

January 24, 1989,
File: 75.3023
PE-7980

Al Phillips,
Project Review Assistant,
Prince George, B.C.

Subject: Goldwedge Project Prospectus Review - Catear Resources.

The above noted Prospectus, as well as information contained in Ministry files and obtained from on-site visit observations, has been reviewed by the Regional Waste Management Branch. It is believed that this project poses low environmental risk, since:

a) it is a relatively small scale of the operation, resulting in limited quantities of tailings and waste rock generated;

b) the mill process involves only grinding, gravity concentrating and floatation with no cyanidation;

c) the receiving environment is devoid of fish for approximately 20 km. downstream (including a 4 km. reach which flows beneath Sulphurets Glacier);

d) Brucejack Lake, 1 km. downstream of this project, will very likely be requested for use as tailings and waste rock disposal by Newhawk Gold Mines Ltd., (Sulphurets Project);

However, there are serious outstanding information requirements that must be addressed by the company, which include:

1. Monitoring data as required by Waste Management Permit PE-7980, for July through January has not been submitted. (We are considering enforcement action on this item);

2. Acid generation test work for tailings and waste rock is inadequate and further test results must be submitted;

3. The mine plan must be detailed to the extent of firmly estimating the quantity of waste rock, both acid consuming and acid generating, if any, to be produced during the applied for mine life;

4. The total volume of tailings should be accurately predicted;

5. The above two estimates of tailings and acid generating waste rock, must be matched to the underwater storage capacity of Goldpan and Iceberg lakes.

6. Supernatant water quality should be predicted based on bench work;

7. If dams are to be used for containment of tailings and acid generating waste rock, construction design must accomodate that containment in perpetuity so as to address concerns regarding reclamation and abandonment;

8. All the appropriate contingencies, as well as an outline for reclamation and abandonment of the site must be prepared;

Taking all things into consideration, we feel that the company must submit a <u>focused</u> Stage I report that addresses the information requirements outlined above in 1 through 8. Only following receipt and review of an adequately prepared document will this office entertain a recommendation of an Approval-in-Principle for this project.

If you have any questions regarding these comments, please contact the undersigned at 847-7252, or Jim Hofweber at 847-7551.

Julia Beatty

Julia M. Beatty, RPBio,
Waste Management Branch,
Skeena Region.

/jmb

c.c. J. Hofweber, Waste Mgmt.
T. Roberts, Waste Mgmt.
D. Parsons, Victoria.
P. Mehling, EPS, West Vancouver.

Ministry of Environment	Waste Management Branch, Smithers	MEMORANDUM

FILE: 75.3023

TO: Julia Beatty

FROM: J. Hofweber

DATE: January 25, 1989

SUBJECT: CATEAR RESOURCES PROSPECTUS REVIEW

After reviewing the Catear prospectus as well as the information contained in the permit (PE-7980) and metal-mine file, and based on site visit information, I recommend that this project proceed to Stage III of the mine review process without submission and subsequent review of a formal Stage I document.

The reasons for this recommendation are:

1. The relatively small scale of the project will result in limited quantities of waste rock and tailings.

2. The mill process involves only grinding, concentrating and flotation with no cyanidation.

3. The receiving environment is devoid of aquatic resources of any significance for approximately 20 km. downstream (including a 4 km. reach which flows beneath the Sulphurets glacier).

4. Brucejack Lake, which is 1 km. downstream, will most likely be used for tailings and waste rock disposal Newhawk Gold Mine.

5. In summary there are no expected environmental impacts which cannot be dealt with at the permitting stage.

There are, however, serious outstanding information requirements. These include:

1. Monitoring data for PE-7980 for July through January are overdue. (We are considering enforcement action on this item.)

2. Acid generation test work for tailings and waste rock must be submitted.

3. The mine plan must be detailed to the extent of firmly estimating the quantity of waste rock, both acid consuming and acid generating (if any) to be produced during the mine life.

4. The volume of tailings should be predicted.

5. The above two estimates must be matched to the underwater storage capacity of Goldpan and Iceberg Lakes.

6. Supernatant water quality should be predicted based on bench work which includes the flotation circuit.

I should additionally comment that I feel that no further fisheries work is required.

J. Hofweber
Waste Mgt. Officer
Northern Region

cc: T. Roberts
Al Phillips
Dave Parsons
Peri Mehling

Province of
British Columbia

Ministry of
Energy, Mines and
Petroleum Resources

5000
.hers
British Columbia
V0J 2N0

File: 14650

~~B.C.~~
PE-7980

June 8, 1990

Mr. E.R. Kurchkowski
Catear Resources Ltd.
Suite 400, 255 - 17th Ave.
Calgary, Alberta
T2S 2T8

Dear Ed:

Re: Goldwedge Property

It has come to my attention that some tailings on the beach below the mill and a pile of "middlings" outside of the mill are potential acid water producers.

In order to prevent acid mine drainage from starting Catear is asked to push the tailings under water (minimum 1 metre deep) and to reprocess the "middlings" or deposit them as well in the tailings pond.

Failure to correct this problem as stated could result in seizure of your bond and the work undertaken by the government and paid for by your seized reclamation bond.

Please reply as to action contemplated by July 15, 1990. If you have any question or concerns do not hesitate to call.

Yours truly,

D.W. Flynn, P.Eng.,
Inspector of Mines and
Resident Engineer

DWF/sc

c.c. J. Hofweber, MOE, Smithers

Province of
British Columbia

Ministry of
Environment

Waste Management
Northern Region
Bag 5000
Smithers, B.C.
V0J 2N0
Telephone: (604) 847-7260

YOUR FILE .....

OUR FILE PE-7980

REGISTERED MAIL

JUL 28 1988

Catear Resources Ltd.
3000 - 595 Burrard Street
Box 49052
Vancouver, British Columbia
V7X 1R3

Gentlemen:

LETTER OF TRANSMITTAL

Enclosed is a copy of Permit No. PE-7980 issued under the provisions of the Waste Management Act in the name of Catear Resources Ltd. Your attention is respectfully directed to the terms and conditions outlined in the Permit. An annual fee for Permit No. PE-7980 will be determined on the basis of your industrial code and capacity in accordance with the Waste Management Fees Regulation.

The administration of this Permit will be carried out by staff from our office located at 3726 Alfred Avenue, Smithers, British Columbia, telephone 847-7260 (mailing address: Bag 5000, Smithers, British Columbia, VOJ 2NO). Plans, data and reports pertinent to the Permit are to be submitted to the Regional Waste Manager at this address.

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This Permit does not authorize entry upon, crossing over, or use for any purpose of private or Crown lands or works, unless and except as authorized by the owner of such lands or works. The responsibility for obtaining such authority shall rest with the Permittee.

Yours very truly,

R. J. Driedger, P.Eng.
Regional Waste Manager

Encl.

cc: Catear Resources Ltd.
Suite 400, 255 - 17th Avenue S.W.
Calgary, Alberta
T2S 2T8

cc: Catear Resources Ltd.
Box 311
Stewart, British Columbia
V0T 1W0

Rescan Environmental Services Ltd.
Suite 510
Coopers & Lybrand Building
1111 West Hastings Street
Vancouver, British Columbia
V6E 2J3

MINISTRY OF ENVIRONMENT

PERMIT

Under the Provisions of the Waste Management Act

Catear Resources Ltd.

3000 - 595 Burrard Street

Box 49052

Vancouver, British Columbia

V7X 1R3

is hereby authorized to discharge effluent

from a gold mine and mill

located near Brucejack Lake, British Columbia

to Goldpan Lake.

This permit has been issued under the terms and conditions prescribed in the attached appendices 01, 02, A-1, B-1, B-2, C-1 and C-2.

R. J. Driedger, P.Eng.
Regional Waste Manager

Date issued: JUL 28 1988

Permit No. PE-7980

Date amended:

MINISTRY OF ENVIRONMENT

WASTE MANAGEMENT BRANCH

APPENDIX 01

to Permit No. PE-7980

(Effluent)

(a) The discharge of effluent to which this appendix is applicable is from a gold milling complex to Goldpan Lake located as shown on the attached Appendix A-1.

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(f) The location of the point of discharge and to which this appendix is appurtenant is Goldwedge Mineral Claim, Record Number 2430, Skeena Mining Division, District Lot 3357, Cassiar Land District.

(g) The works authorized must be complete and in operation when discharge commences.

Date issued: JUL 28 1988

Date amended:

R. J. Driedger, P.Eng.
Regional Waste Manager

ENV. 2096 W-817

MINISTRY OF ENVIRONMENT

WASTE MANAGEMENT BRANCH

APPENDIX 02

to Permit No. PE-7980

(Effluent)

(a) The discharge of effluent to which this appendix is applicable is from Goldpan Lake to Catear Creek as shown on the attached Appendix A-1.

(b) The maximum rate at which effluent may be discharged is 6546 cubic metres per day.

(c) The characteristics of the effluent shall be equivalent to or better than:

pH range	6.5 - 8.5
diss Al	0.50 mg/L
diss Cu	0.05 mg/L
diss Fe	0.30 mg/L
diss Pb	0.05 mg/L
diss Zn	0.20 mg/L
diss As	0.50 mg/L
Total Suspended Solids	75 mg/L

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(g) The works authorized must be complete and in operation when discharge commences.

Date issued: JUL 28 1988

Date amended:

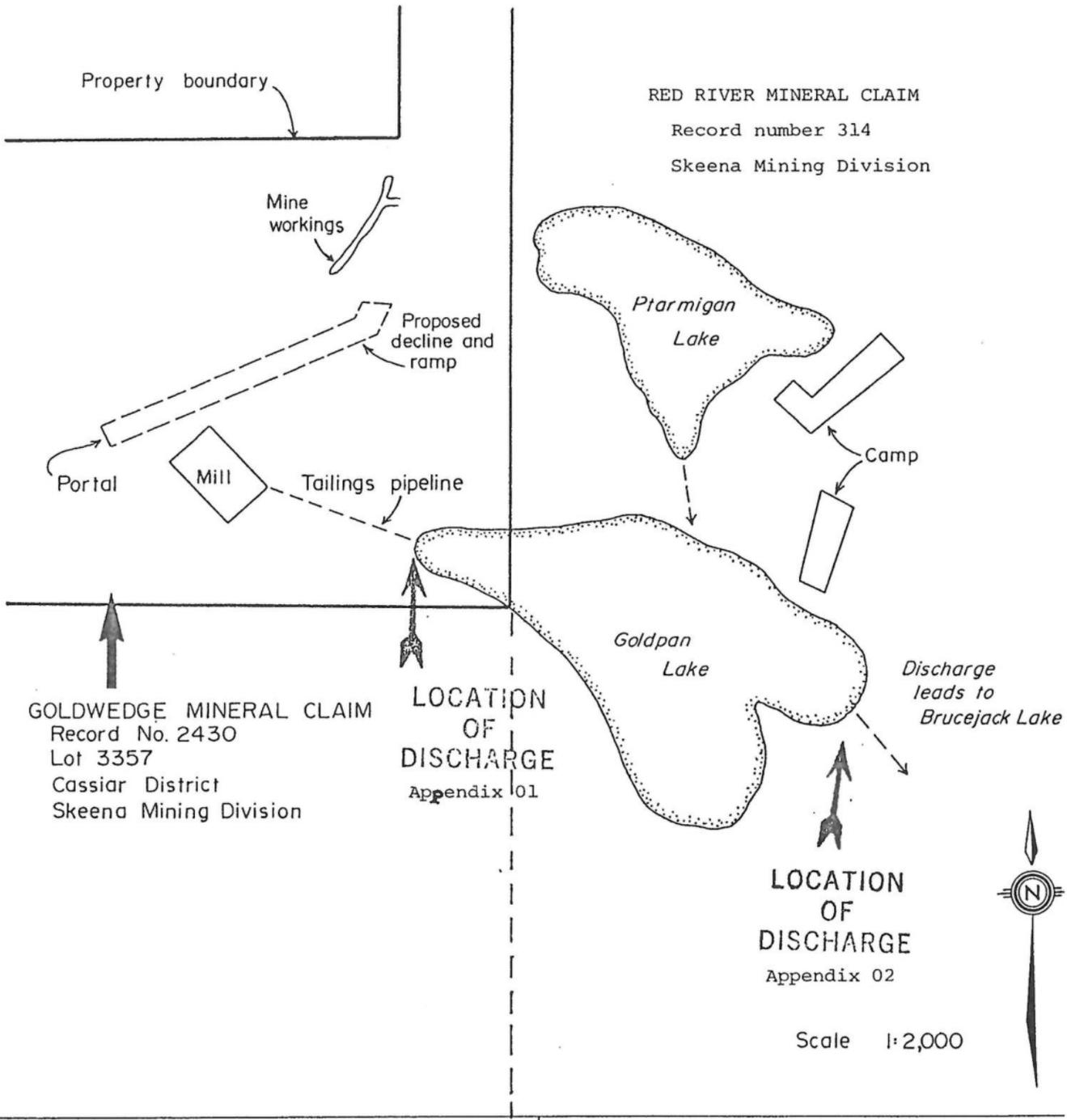
R. I. Driedger, P.Eng.
Regional Waste Manager

Province of British Columbia

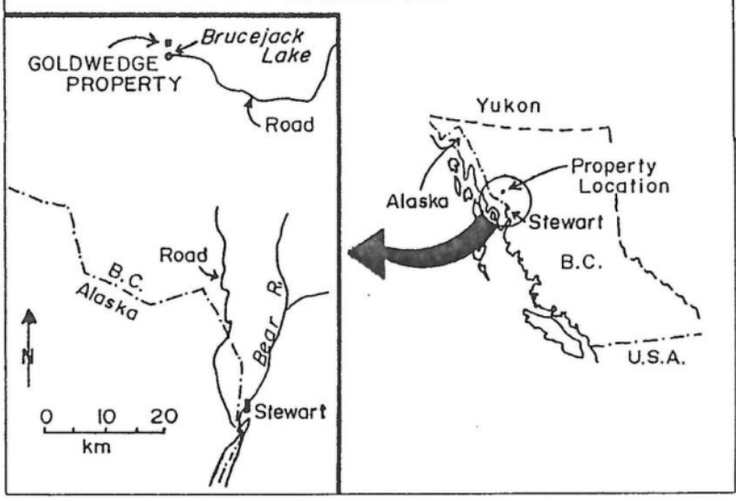
Ministry of Environment

WASTE . AGEMENT BRANCH

SITE PLAN



LOCATION MAP



Catear Resources Ltd.

(Name of applicant(s))

(Date) (Signature of applicant(s) or agent)

(FOR OFFICE USE ONLY)

JUL 28 1988

Date Issued

Date Amended

R. J. Driedger, P.Eng.
Regional Waste Manager

Appendix A-1 to Permit No. PE-7980

Approval No.

ENV 1987

MINISTRY OF ENVIRONMENT

WASTE MANAGEMENT BRANCH

APPENDIX B-1

to Permit No. PE-7980

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3. BYPASSES

The discharge of effluent which has bypassed the designated treatment works is prohibited unless the approval of the Director or the Regional Waste Manager is obtained and confirmed in writing.

4. PROCESS MODIFICATIONS

The Permittee shall notify the Regional Waste Manager prior to implementing changes to any process that may affect the quality and/or quantity of the discharge.

5. MILL REAGENTS

Cyanide and mercury are not approved reagents for this operation.

6. MILL PRODUCTION

Mill production is limited to the processing of 10,000 tonnes of ore.

7. WASTE ROCK DISPOSAL

All waste rock types which have shown a positive acid generation potential are to be submerged in the tailings impoundment.

R. J. Driedger, P.Eng.
Regional Waste Manager

Date issued: JUL 28 1988

Date amended:

ENV. 2096 W-817

MINISTRY OF ENVIRONMENT

WASTE MANAGEMENT BRANCH

APPENDIX B-2

to Permit No. PE-7980

8. WASTE ROCK CHARACTERIZATION

All waste rock types encountered during the term of this permit which have not previously been tested for acid generation potential are to be so tested and disposed of in a manner consistent with paragraph 7 above.

R. J. Driedger, P.Eng.
Regional Waste Manager

Date issued: JUL 28 1988

Date amended:

ENV. 2096 W-817

MINISTRY OF ENVIRONMENT

WASTE MANAGEMENT BRANCH

APPENDIX C-1

to Permit No. PE-7980

1. MONITORING PROGRAM

The permittee shall conduct the following monitoring program as soon as discharge commences:

LOCATION	PARAMETERS	FREQUENCY
mill production	throughput, tonnes of ore per day tailings discharge, cubic metres per day	daily
tailings decant	pH, dissolved SO_4, Al, As, Cu, Fe, Mn, Pb, Zn	monthly
outlet of Goldpan Lake	pH, TSS, acidity, alkalinity, dissolved SO_4, total and dissolved Al, As, Cu, Fe, Mn, Pb, Zn	monthly
	toxicity - 96 hr LC_{50}	once, during the last week of operation
tailings solids	acid generation potential	once, during representative mill operating conditions

R. J. Driedger, P.Eng.
Regional Waste Manager

Date issued: JUL 28 1988

Date amended:

ENV. 2096 W-817

MINISTRY OF ENVIRONMENT

WASTE MANAGEMENT BRANCH

APPENDIX C-2

to Permit No. PE-7980

2. ANALYSES

a) Parameters other than toxicity and acid generation potential

Analyses are to be carried out in accordance with procedures described in the second edition (February, 1976) of "A Laboratory Manual for the Chemical Analysis of Waters, Wastewaters, Sediments and Biological Materials," or by suitable alternative procedures as approved by the Regional Waste Manager.

Copies of the above mentioned manual are available from the Environmental Laboratory, 3650 Wesbrook Crescent, Vancouver, British Columbia, V6S 2L2, at a cost of $25.00 and are also available for inspection at all Waste Management Offices.

b) Toxicity

Analyses for determining the toxicity of liquid effluents to fish shall be carried out in accordance with the procedures described in the "Laboratory Procedures for Measuring Acute Lethal Toxicity of Liquid Effluents to Fish" dated November, 1982.

Copies of the above mentioned manual are available from the Waste Management Branch, 810 Blanshard Street, Victoria, British Columbia, V8V 1X5, at a cost of $5.00, and are also available for inspection at all Waste Management Offices.

c) Acid generation potential

Analyses for acid generation potential are to be in accordance with the acid/base accounting procedure as described in the U.S. EPA publication number 600/2 - 78 - 054, March 1978, by Sobak et al.

3. REPORTING

Maintain data of analyses, mill production, waste rock characterization, and tailings characterization for inspection and submit the data, suitably tabulated, to the Regional Waste Manager for the previous month within 10 days of the end of that month. The first report is to be submitted by August 10, 1988, for the July reporting period

Submit a summary project report within 60 days of completion of the 10,000 tonne bulk sample.

R. J. Driedger, P.Eng.
Regional Waste Manager

Date issued: JUL 28 1988

ENV. 2096 w-817 Date amended:

File: AE-7980
From: J. Hofweber
Northern Region
Date: June 28, 1988

TECHNICAL ASSESSMENT FOR PERMIT AMENDMENT APPLICATION

Application dated November 25, 1987 on behalf of Catear Resources Ltd. located near Sulphurets Creek, British Columbia

---

1. SOURCE OF DISCHARGE

The source of discharge is a pilot-scale gold mill employing crushing, grinding and gravity separation. The mill will be designed to initially process approximatley 100 tons per day of ore-grade material. Ore will be ball-milled to minus 100 mesh before undergoing separation on jig tables. Free gold will be removed as the heaviest fraction while middlings represent a gold concentrate (containing 60-70% of recoverable gold) and are comprised of sulphides and some silicates. This concentrate will be stored for future processing under full-scale operation. The remaining fraction is tailings material described as follows:

sulphur content	0.964%
potential acidity	30.1*
neutralization potential	34.0*
paste pH	8.1

*units - tons $CaCO_3$ equivalent per thousand tons material

A multi-element metals scan was performed on a sample of tailings solids and is attached as Table 1. Tailings supernatant was analyzed for sulphate, nitrate, nitrite, ammonia and dissolved arsenic, copper, iron, lead and zinc. Tailings slurry was also left to settle and supernatant sampled after 1 hr, 5 hrs, 24 hrs, and 5 days. Results are shown in Table 2. The broad interpretation of these results is that provincial objectives for dissolved metals and drinking water objectives (except lead*) can be met at time = 0 hr settling, suspended solids at time = 5 days; while the federal objectives for total metals can be met at between 1 and 5 hrs and suspended solids at approximately 5 days settling. A particle size analysis is attached as Table 3. No reagents will be used in the process and tailings supernatant will be recirculated from Goldpan Lake.

*The objective concentration for lead is $\leq$ 1 ug/L, the maximum acceptable concentration is 50 ug/L. The tailings decant tested 2 ug/L.

2. PROPOSED METHOD OF TREATMENT OF DISCHARGE

The tailings slurry will be discharged to Goldpan Lake which will function as a settling pond and permanent tailings deposition site. If acid generating waste rock is encountered, it too will be deposited in Goldpan Lake as an acid generation prevention strategy.

The surface area of Goldpan Lake is 9500 m^2 with an estimated volume of 60,000 m^3. The pilot mill will process 10,000 tonnes of ore, with 7% or 700 tonnes removed as gold concentrate. The total amount of tailings solids is 9300 tonnes. Assuming a density of 2.7 t/m^3, yields 3445 m^3 of tailings solids to be deposited in Goldpan Lake. Waste rock which has been identified as potentially acid-generating will also be deposited in Goldpan Lake. Current estimates, based upon seven samples tested, indicate approximately 714 m^3 of potentially acid-generating waste rock will require lake disposal. Tailings and waste rock together will occupy 4159 m^3 (or approximately 7%) of Goldpan Lake volume. Deposition will be such that beaching is avoided and all wastes remain submerged.

At a rate of discharge of 430 m^3/d, a maximum (complete mixing) retention time of 140 days (60,000 m^3/430 m^3/d) is calculated. The actual retention time cannot be estimated, but is presumed to be in excess of the 5 days which were required to achieve the 27 mg/L suspended solids

level attained during the settling tests. If monitoring results at the outlet of Goldpan Lake indicate suspended solids levels which exceed permit limits, a simple baffle system could be used to provide additional settling time.

The maximum rate of discharge from Goldpan Lake is specified as 6546 cubic metres to accomodate precipitation and runoff entering the lake.

3. RECEIVING ENVIRONMENT

The receiving environment is described in the following excerpts from correspondence from Rescan Environmental Services Ltd. to the Waste Management Branch:

> "The Catear property, at an elevation of 1520 m, drains to the southeast, emptying into the northwest corner of Brucejack Lake via Catear Creek. The difference in elevation between Goldpan Lake and Brucejack Lake is 140 meters, with an average grade of 13 percent. Goldpan Lake is fed by Ptarmigan Lake, immediately to the north, and Ptarmigan Lake is groundwater fed. Goldpan Lake discharges to Lower Goldpan Lake, a long narrow lake immediately to the southeast of Goldpan Lake. Goldpan and Lower Goldpan Lakes are joined by a narrow constriction approximately 100 m long. Lower Goldpan Lake discharges to the southeast into Catear Creek, which empties into Brucejack Lake approximately 1100 meters downstream.
>
> Flow estimates for Goldpan Lake at its discharge and Catear Creek at the discharge to Brucejack Lake were extrapolated from the Newhawk hydrology study (Ker, Priestman & Associates Ltd., 1987) using their respective catchment areas. High and low flow estimates are tabulated in Table 4 (attached).
>
> These ranges should not be misinterpreted as upper and lower bounds for monthly or annual flows. Instead they are high and low estimates spanning a range of uncertainty for the long term mean monthly or annual flows. Individual values may fall outside these ranges on occasion, but the long-term means should fall within them.
>
> Three fishery surveys were carried out for Newhawk, in late July, late August and late September; methods used were minnow traps, electroshocking, seining and gill netting. Coho were present in the Unuk River below Sulphurets Creek confluence and only dolly varden were found in the Unuk above Sulphurets Creek. No fish were found in Sulphurets Creek above the falls 1 km from the mouth.
>
> No fish were observed or collected in Brucejack Lake. Minnow traps set in July and gillnets set in August and September produced zero catch. No fish were observed on the echo sounder during a three day bathymetric survey. Brucejack Lake at 1380 m elevation is separated from lower Sulphurets Creek at 610 m elevation by three sets of impassable falls and a 4 km long section of glacier. As a result of these surveys, it has been concluded that Brucejack Lake is devoid of fish.
>
> The lakes in the area of Catear's project are small and are frozen to an unknown depth for most of the year. It has been established that Brucejack Lake is devoid of fish and thus no fish could migrate upstream from Brucejack into Goldpan Lake. The hostile climate, topography and lack of fish habitat are strong evidence that Goldpan Lake is also devoid of fish."

Based on personal observations and available information from consultants and other agencies, there are no aquatic life resources of any significance downstream of the discharge until the section of Sulphurets Creek below the falls 1 km above the confluence of Sulphurets Creek and the Unuk River. However the Newhawk Gold Mines Ltd. development camp on Brucejack Creek just below Brucejack Lake currently draws its drinking water from Brucejack Creek which flows out of Brucejack Lake and is the headwaters of Sulphurets Creek. Therefore drinking water criteria should apply at the outlet of Brucejack Lake. It is expected that the proposed

discharge will have no measurable impact at this point. It should be noted that Newhawk has applied to the relevant agencies for the use of Brucejack Lake as a tailings and acid generating waste rock disposal area.

4. PROPOSED MONITORING

The following monitoring program is proposed as a permit requirement:

LOCATION	PARAMETERS	FREQUENCY
mill production	throughput, tonnes of ore per day tailings discharge, cubic metres per day	daily
tailings decant	pH, dissolved SO_4, Al, As, Cu, Fe, Mn, Pb, Zn	monthly
outlet of Goldpan Lake	pH, TSS, acidity, alkalinity, dissolved SO_4, total and dissolved Al, As, Cu, Fe, Mn, Pb, Zn	monthly
	toxicity - 96 hr LC_{50}	once, during the last week of operation
tailings solids	acid generation potential	once during representative mill operating conditions

This monitoring program incorporates the recommendations of Environment Canada and should adequately characterize the effluent as well as its impact on the receiving environment.

5. ASSESSMENT

Tailings and supernatant analyses for TSS and dissolved metals indicate that treatment by settling in Goldpan Lake should produce an effluent of acceptable quality. The relatively benign nature of the decant, together with the dilution afforded by the receiving environment, will insure that no measurable impact will occur in the sensitive lower 1 km of Sulphurets Creek. Drinking water standards will be met at the Newhawk campsite.

J. Hofweber, P.Eng.
Waste Management Officer
Northern Region

JH/dm

TABLE 1

Chemical Characteristics of
Tailings Solids

Aluminum	Al	%	0.65
Silver	Ag	ppm	2.4
Arsenic	As	ppm	45
Barium	Ba	ppm	920
Beryllium	Be	ppm	<0.5
Bismuth	Bi	ppm	<2
Calcium	Ca	%	1.23
Cadmium	Cd	ppm	<0.5
Cobalt	Co	ppm	<1
Chromium	Cr	ppm	9
Copper	Cu	ppm	23
Iron	Fe	%	1.03
Gallium	Ga	ppm	<10
Mercury	Hg	ppm	<1
Potassium	K	%	0.32
Lanthanum	La	ppm	10
Magnesium	Mg	%	0.11
Manganese	Mn	ppm	350
Molybedenum	Mo	ppm	4
Sodium	Na	%	0.01
Nickel	Ni	ppm	2
Phosphorus	P	ppm	1090
Lead	Pb	ppm	14
Antimony	Sb	ppm	<5
Selenium	Se	ppm	10
Strontium	Sr	ppm	59
Titanium	Ti	%	<0.01
Thallium	Tl	ppm	<10
Uranium	U	ppm	<10
Vanadium	V	ppm	10
Tungsten	W	ppm	5
Zinc	Zn	ppm	29

TABLE 2

Tailings Analysis After Various Settling Times

PARAMETER	AT TIME=0	SUPERNATANT AFTER SETTLING 1 hr	5 hr	24 hr	5 d	B.C. OBJECTIVE	MMLER
Sulphate (mg/L)	25						
Nitrate/nitrite (mg/L) N	0.80					10-25	
Ammonia (mg/L) N	1.600					1-10	
Total diss. P (mg/L)	0.860					2-10	
Total susp.solids (mg/L)	20900	6600	3500	450	27		25
TOTAL METALS (ug/L)							
Arsenic As		570	350	29	9		500
Copper Cu		4	6	4	4		300
Iron Fe		680	800	700	120		
Lead Pb		4	8	14	18		200
Zinc Zn		2	2	4	4		500
DISSOLVED METALS (ug/L)							
Arsenic As	4	4	5	5	5	100-1000	
Copper Cu	2	2	2	2	<2	50-300	
Iron Fe	12	14	12	18	22	300-1000	
Lead Pb	2	<2	2	2	<2	50-200	
Zinc Zn	4	2	2	4	2	200-1000	

PROJECT NO. 8821054 DRAWN REVIEWED DATE

GRAI. SIZE DISTRIBUTION

TABLE 3

M.I.T. GRAIN SIZE SCALE

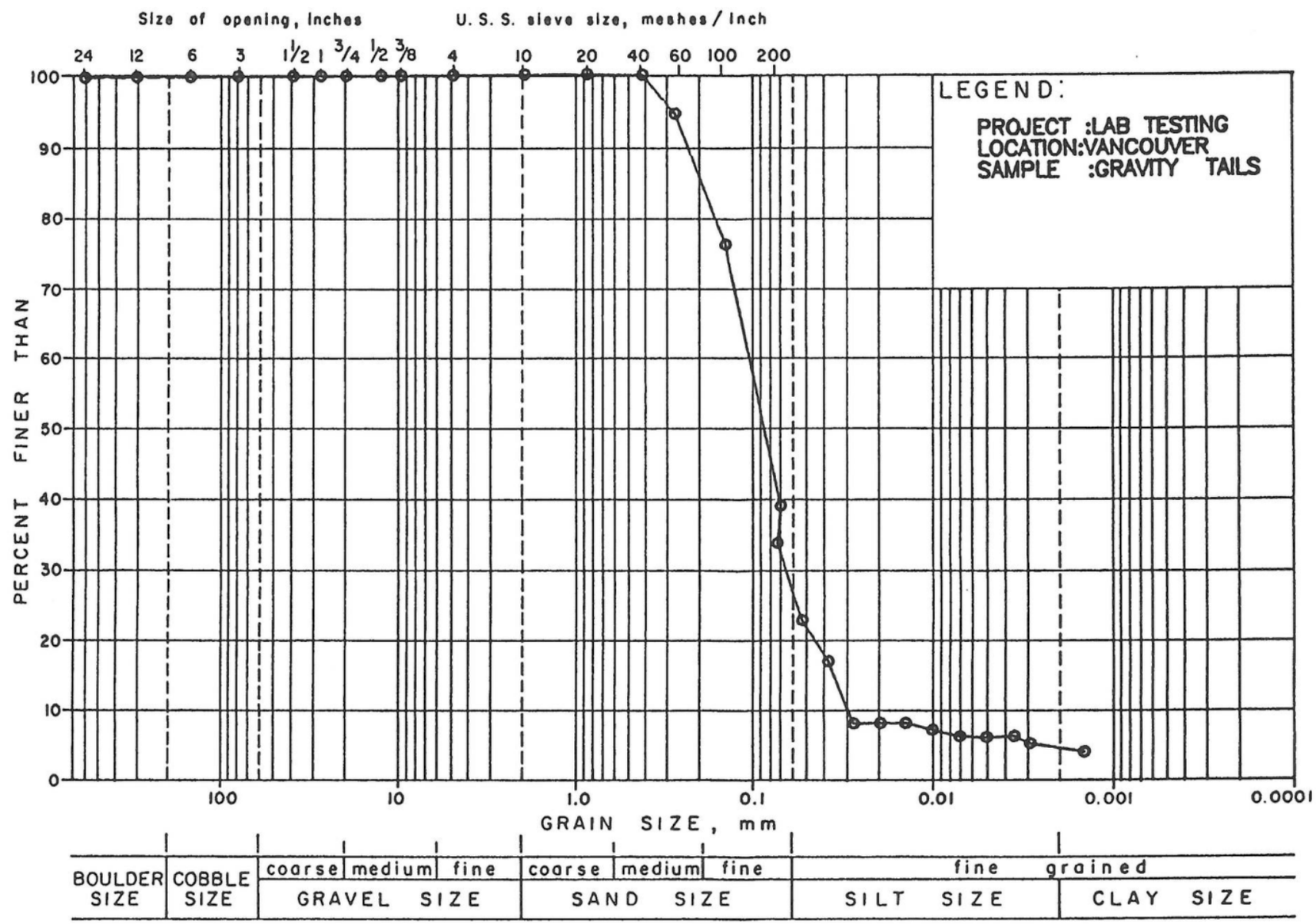


Table 4

Mean Monthly Flow Estimates (m^3/s)

Month	GOLDPAN LAKE AT OUTLET		CATEAR CREEK AT MOUTH	
	Low	High	Low	High
Jan	0.0	.001	0.0	.020
Feb	0.0	.001	0.0	.017
Mar	0.0	.001	0.0	.017
Apr	0.0	.003	.006	.042
May	.006	.017	.084	.22
Jun	.025	.038	.34	.50
Jul	.036	.067	.48	.90
Aug	.034	.063	.45	.84
Sept	.020	.032	.27	.42
Oct	.011	.021	.14	.28
Nov	.002	.008	.028	.11
Dec	0.0	.003	.006	.042

File: AE-7980
From: J. Hofweber
Northern Region
Date: June 28, 1988

RESUME FOR PERMIT APPLICATION ASSESSMENT

Application dated November 25, 1987 on behalf of Catear Resources Ltd. located near Sulphurets Creek, British Columbia

---

1. APPLICATION

The application requests authorization to discharge 430 m^3/day of typical gold mill tailings from a 10,000 tonne bulk sample to Goldpan Lake and 6546 m^3/day of tailings decant and influent runoff from Goldpan Lake to Catear Creek.

The discharge from Goldpan Lake to Catear Creek is characterized as:

pH range	6.5 - 8.5
diss Al	0.50 mg/L
Diss Cd	0.01 mg/L
diss Cr	0.05 mg/L
diss Cu	0.05 mg/L
diss Fe	0.30 mg/L
diss Pb	0.05 mg/L
diss Sb	0.25 mg/L
diss Zn	0.20 mg/L
diss As	0.50 mg/L

The milling operation will be limited to 10,000 tonnes of ore undergoing gravity separation. Treatment of effluent will be limited to settling in Goldpan Lake.

2. APPLICATION REVISIONS

The application did not specify total suspended solids (TSS) as an effluent characteristic. Environment Canada requested that TSS be included in the permit in reference to the "Federal Metal Mining Liquid Effluent Regulations" which specify a maximum of 50 mg/L for a single grab sample and a maximum monthly average of 25 mg/L. It is recommended that the permit be issued with a limit of 75 mg/L which coincides with the maximum of the Provincial Objectives for the Mining, Smelting and Related Industries of B.C. This limit is justified per the discussions outlined in the Technical Assesment of this application.

3. HISTORY

The property was visited by the author during its exploration phase in June and September, 1987. Meetings with the company president, Ed Krutchkowski indicated his intention to process a 10,000 tonne bulk sample. The author referred the company to Ray Crook of MEMPR regarding the mine development review process and suggested that Catear engage an environmental consulting firm to prepare a prospectus and submit applications. Rescan Environmental Consultants Ltd. was selected by the company and submitted the subject application on behalf of Catear Resources Ltd.

4. ADMINISTRATIVE ASPECTS

The application was posted on the site November 15, 1987, published in the B.C. Gazette and the Stewart Sentinel newspaper and circulated to the appropriate agencies. The production capacity form was received indicating SIC code 0611, "gold mine" and a capacity of 98 t.p.d.

5. POLICY/OBJECTIVES

The application conforms to the "Pollution Control Objectives for the Mining, Smelting and Related Industries of British Columbia, 1977".

6. AGENCY COMMENTS

Ministry of Health, Terrace: objections[1]
Regional District of Kitimat-Stikine: no reply
Fish & Wildlife, Smithers: no objection
Water Management, Smithers: no objection

Inspector of Mines, Smithers: no comment
Environment Canada: conditional support[2]

1) The response, dated 88-01-15, from District Public Health Inspector, Saskia van Beynum, registered an objection to the application because Newhawk Gold Mines Ltd's. development camp draws drinking water from Brucejack Creek at the outlet of Brucejack Lake (which receives inflow from Catear Creek and Goldpan Lake). As discussed in the Technical Assessment for this application, subsequent testing of tailings samples indicates the decant water quality meets B.C. drinking water guidelines. This information was forwarded to Ms. van Beynum on 88-06-08. A memo dated 88-06-13 indicated that Ms. van Beynum has withdrawn her objection based on the tailings testwork.

2) Correspondence from Environment Canada dated 88-01-21, 88-02-18 and 88-05-04 supports granting of the subject permit "with conditions and monitoring requirements as recommended" below:

a) "additional acid generation test work on mill tailings is recommended as a permit condition"

- additional AMD test work will be covered in the monitoring program.

b) "underwater disposal site [must] have adequate capacity and depth"

- this has been demonstrated by information submitted on lake volume and discharge rate.

c) "additional test work to fully characterize ... waste rock ... to be included in the permit"

- this will be covered by a special clause in the permit (see Recommendations section).

d) recommended monitoring program:

i) tailings effluent sampled for pH, dissolved Cu, Fe, Pb, Zn, sulfate and percent solids on three occasions.

ii) Goldpan Lake outlet sampled monthly for pH, alkalinity/acidity, sulfate, total and dissolved Cu, Fe, Pb and Zn.

iii) tailings solids sampled for acid generation potential.

iv) Results reported within ten days of sampling. Project report within sixty days of completion of 10,000 tonne milling

- these recommendations have been reflected in the proposed monitoring program

e) permit specification that mercury and cyanide are not approved reagents for this operation.

7. CONCERNED PERSONS

None.

8. SITE INSPECTION REPORT

The site was visited on two occasions prior to submission of this application. Subsequently submitted information has been consistent with observations made during the two site visits.

9. SECURITY REQUIREMENT

Security is not recommended for this application.

10. DISCUSSION OF TECHNICAL ASPECTS

The effluent discharge from the tailings impoundment is not expected to have a detrimental effect on the receiving environment because:

A. Tailings are not acid generating.

B. No reagents are used in the operation.

C. There is sufficient retention time in Goldpan Lake to reduce suspended solids to adequate levels.

D. Tailings testwork has shown that dissolved metals levels will be extremely low.

E. There is further protection for aquatic resources considering the additional retention time and available dilution in Brucejack Lake and Sulphurets Creek.

11. RECOMMENDATIONS

It is recommended that the Regional Waste Manager, in accordance with Section 8 of the Waste Management Act, issue Permit PE-7980 to Catear Resources Ltd. as outlined below:

Appendix 01

authorizes 430 m^3/d to Goldpan Lake from a gold mill

Appendix 02

authorizes 6546 m^3/day to Catear Creek from Goldpan Lake

Appendices B-1 and B-2

contain standard clauses:

1. MAINTENANCE OF WORKS
2. EMERGENCY PROCEDURES
3. BYPASSES
4. PROCESS MODIFICATIONS

special clauses:

5. MILL REAGENTS
   per request from Environment Canada

6. MILL PRODUCTION
   limited to 10,000 tonnes per Provincial Mine Development Guidelines

7. WASTE ROCK DISPOSAL
   to prevent acid generation

8. WASTE ROCK CHARACTERIZATION
   to prevent acid generation

Appendices C-1 and C-2

monitoring program per technical assessment

J. Hofweber

J. Hofweber, P.Eng.
Waste Management Officer
Northern Region

JH/dm

Province of British Columbia
SKEENA REGION

Ministry of Environment

MEMORANDUM

Bag 5000, Smithers, British Columbia V0J 2N0

FEB - 8 1994 File: PE-7980

MEMO TO FILE

Cancellation of Permit under the
Water Management Act S.B.C. 1982, c41

As of FEB - 8 1994 Waste Management Permit No. PE-7980 in the name of Catear Resources Ltd. is hereby cancelled pursuant to Section 23 of the Waste Management Act, since the holder was a partnership which has been dissolved.

T. Roberts
Regional Waste Manager

c.c. Environment Canada, Environment Protection, Pacific Region

Province of
British Columbia

Ministry of
Environment,
Lands and Parks

BC Environment

Skeena Region
Box 5000
Smithers
British Columbia
V0J 2N0
Telephone: (604) 847-7260
Facsimile: (604) 847-7591

January 25, 1994

File: PE-7980

REGISTERED MAIL

Catear Resources Limited
1500 885 West Georgia
Vancouver BC V6C 3H7

Dear Mr. Kruchkowski:

Re: Cancellation of Permit under the
Waste Management Act S.B.C. 1982, c41

As of FEB - 8 1994 Waste Management Permit No. PE-7980 in the name of Catear Resources Limited is hereby cancelled pursuant to Section 23 of the Waste Management Act, since the holder was a partnership which has been dissolved.

Yours truly,

T. Roberts
Regional Waste Manager

cc: Environment Canada, Environment Protection, Pacific Region

OFFICIAL PERMIT LIST CORRECTION REQUEST

To: ~~Shirley Bavalis~~ Teri Vakaidi
From: Barb Hall

File: PE-7980 Date: Oct 5/93 Section: LD Coastal

REQUESTED CHANGE:-
Cancel Permit -
Permit was suspended Feb 3/90 by Deputy Minister Richard Dahn
Letter was sent to Co. June 22/93 requesting a "letter requesting cancellation" letter was returned.
Company bankrupt & in receivership.

Barbara Hall
Signature

[illegible] ADF DISCHARGE SHOULD STILL BE MONITORED ON A QUARTERLY BASIS. MILL / ACCUMULATION COMPLEX STILL ON SITE. REQUIRES CLEAN-UP.

October 05/93
Date

Waste Management Officer

Date

Section Head

93/10/14
Date

Regional Manager

Date entered in computer

Processing Clerk

Province of
British Columbia

MINISTRY OF
ENVIRONMENT,
LANDS AND PARKS

BC Environment

Environmental Protection
Box 5000
Smithers, British Columbia
V0J 2N0
Telephone: (604) 847-7260
Fax: (604) 847-7591

June 22, 1993

File: PE-7980

CATEAR RESOURCES LTD
1500 185 WEST GEORGIA STREET
VANCOUVER BC V6C 3H7

Attention: Edward Kruchkowski, President

Dear : E. Kruchkowski

Re: Waste Management Permit PE-7980

Permit PE-7980 was issued July 28, 1988 to authorize effluent discharge from a gold mine and mill located near Brucejack Lake, British Columbia. The permit was placed in suspension March 1, 1990 for non-payment of permit fees.

We understand that activities at this site have ceased and that your company is no longer the claim holder. As the permit still exists, an annual fee is still being generated. To correct this situation please forward to this office a letter requesting cancellation of permit PE-7980.

If you require more information please contact Barb Hall (847-7553) or myself (847-7417)

Yours truly,

Criag Stewart
Environmental Protection Officer

Director: Y Officer: N
Dir/Off Name: ERIK A. OSTENSOE
Position:
Address: 4306 WEST 3RD AVENUE
VANCOUVER, B.C.
V6R 1M7
Director: Y Officer: Y
CS73 - PRESS ENTER FOR MORE INFORMATION
PF1-Help PF2-BCOL PF3-Return PF7-Back PF8-Forward PF10-Pri

CAPS

As Of: OCT 05, 1993 BC Online: COMPANIES - CORPORATE SEARCH 93/10/1
Lterm: DYNPA723 For: PU70084 MINISTRY OF ENVIRONMENT, LANDS 13:55:1
Folio: Printer:

*** NOT ACTIVE *** EXTRA PROVINCIAL COMPANY *** NOT ACTIVE *

Old Name: CATEAR RESOURCES LTD.

Type: A Company Number: 0019281

Continuation To :

New Name: CATEAR RESOURCES LTD.

Type: C Company Number: 0278473

ON: 25 MAY, 1984 Effective:

CS74 - NO MORE INFORMATION TO DISPLAY
PF1-Help PF2-BCOL PF3-Return PF7-Back PF8-Forward PF10-Pri

CAPS

As Of: OCT 05, 1993 BC Online: COMPANIES - CORPORATE SEARCH 93/10/
Lterm: DYNPA723 For: PU70084 MINISTRY OF ENVIRONMENT, LANDS 13:53:
Folio: Printer:
*** DISSOLUTION STARTED *** BC COMPANY

Name: CATEAR RESOURCES LTD.

Incorporation No: C -0278473 Incorporation Date: 15 JAN., 1
Previous Number : A19281 Continuation Date: 25 MAY, 1
Prev Jursdiction: ALBERTA

Last Annual Report Date: 25 MAY, 1990 Nbr of Principals: 3

In Liq: NO Receiver: NO Reporting: YES

Registered Office: 1500 - 885 WEST GEORGIA STREET
VANCOUVER, B.C.
V6C 3H7

Records Office: 1500 - 885 WEST GEORGIA STREET
CS73 - PRESS ENTER FOR MORE INFORMATION
PF1-Help PF2-BCOL PF3-Return PF7-Back PF8-Forward PF10-Pri

CAPS

As Of: OCT 05, 1993 BC Online: COMPANIES - CORPORATE SEARCH 93/10/1
Lterm: DYNPA723 For: PU70084 MINISTRY OF ENVIRONMENT, LANDS 13:54:2
Folio: Printer:
Records Office: 1500 - 885 WEST GEORGIA STREET
VANCOUVER, B.C.
V6C 3H7

Director: Y Officer: Y
Dir/Off Name: EDWARD RICHARD KRUCHKOWSKI
Position: PRESIDENT
Address: 23 TEMPLESIDE BAY N.E.

Province of
British Columbia

MINISTRY OF
ENVIRONMENT,
LANDS AND PARKS

BC Environment

Environmental Protection
Box 5000
Smithers, British Columbia
V0J 2N0
Telephone: (604) 847-7260
Fax: (604) 847-7591

June 22, 1993

File: PE-7980

CATEAR RESOURCES LTD
1500 185 WEST GEORGIA STREET
VANCOUVER BC V6C 3H7

Attention: Edward Kruchkowski, President

Dear : E. Kruchkowski

Re: Waste Management Permit PE-7980

Permit PE-7980 was issued July 28, 1988 to authorize effluent discharge from a gold mine and mill located near Brucejack Lake, British Columbia. The permit was placed in suspension March 1, 1990 for non-payment of permit fees.

We understand that activities at this site have ceased and that your company is no longer the claim holder. As the permit still exists, an annual fee is still being generated. To correct this situation please forward to this office a letter requesting cancellation of permit PE-7980.

If you require more information please contact Barb Hall (847-7553) or myself (847-7417)

Yours truly,

Criag Stewart
Environmental Protection Officer

Doug B.

As Of: JUN 03, 1993 BC Online: COMPANIES - CORPORATE SEARCH 93/06/08
Lterm: DYNPA535 For: PP70229 MINISTRY OF ENVIRONMENT, LANDS 13:11:17
Folio: Printer:

BC COMPANY

Name: CATEAR RESOURCES LTD.

Incorporation No: C -0278473 Incorporation Date: 15 JAN., 1982
Previous Number : A19281 Continuation Date: 25 MAY, 1984
Prev Jursdiction: ALBERTA

Last Annual Report Date: 25 MAY, 1990 Nbr of Principals: 3

In Liq: NO Receiver: NO Reporting: YES Encumbrances: YES

For information on personal property security instruments registered on or after October 1, 1990; please contact the Personal Property Registry, 387-6881

Search Print Required?
TRX: CS CS73 - PRESS ENTER FOR MORE INFORMATION
KEY: C /0278473
PF1-Help PF3-Return PF7-Page Back PF8-Page Forward
CAPS

As Of: JUN 03, 1993 BC Online: COMPANIES - CORPORATE SEARCH 93/06/08
Lterm: DYNPA535 For: PP70229 MINISTRY OF ENVIRONMENT, LANDS 13:11:56
Folio: Printer:
Registered Office: 1500 - 885 WEST GEORGIA STREET
VANCOUVER, B.C.
V6C 3H7
Records Office: 1500 - 885 WEST GEORGIA STREET
VANCOUVER, B.C.
V6C 3H7

Director: Y Officer: Y
Dir/Off Name: EDWARD RICHARD KRUCHKOWSKI
Position: PRESIDENT
Address: 23 TEMPLESIDE BAY N.E.
CALGARY, ALBERTA
T1Y 3L6

Search Print Required?
TRX: CS CS73 - PRESS ENTER FOR MORE INFORMATION
KEY: C /0278473
PF1-Help PF3-Return PF7-Page Back PF8-Page Forward
CAPS

As Of: JUN 03, 1993 BC Online: COMPANIES - CORPORATE SEARCH 93/06/08
Lterm: DYNPA535 For: PP70229 MINISTRY OF ENVIRONMENT, LANDS 13:12:05
Folio: Printer:

Director: Y Officer: N
Dir/Off Name: ERIK A. OSTENSOE
Position:
Address: 4306 WEST 3RD AVENUE
VANCOUVER, B.C.
V6R 1M7

Director: Y Officer: Y
Dir/Off Name: ANGELA YVONNE PISICOLI
Position: SECRETARY
Address: 1100 LAKE PLACID DR. S.E.
CALGARY, ALBERTA
T2J 5H1

Search Print Required?
TRX: CS CS74 - NO MORE INFORMATION TO DISPLAY
KEY: C /0278473
PF1-Help PF3-Return PF7-Page Back PF8-Page Forward
CAPS

Craig:

Please contact

- ~~Doug Flynn~~ ⇒ CLAIMS OWNED BY [illegible] ⇒ LIQUID/[illegible] OWNED BY AN INDIVIDUAL.
- Company/[illegible]

re: cancellation / continuation of Permit PE-7980

Annual Permit fee $1,276 due in July.

JGB

Doug

COULD YOU PLEASE DRAFT A LETTER TO [illegible] REQUESTING PMT OF FEES & INSTRUCTING THEM TO APPLY FOR CANCELLATION OF THEIR [illegible] PERMIT AS PER THE WASTE MGMT. ACT.

⇒ LETTER SHOULD BE REGISTERED

THANKS
[illegible]

Province of
British Columbia
Skeena Region

BC Environment

MEMORANDUM

Bag 5000, Smithers, B. C. V0J 2N0

TO: File DATE: October 3, 1991

FROM: B.Hall FILE: PE-7980

SUBJECT: **Permit/Site Inpsection - September 26, 1991**

Permittee: Catear Resources Ltd.
Location: Sulphurets Creek

OBSERVATIONS & COMMENTS

- No one on site.
- Middlings pond exposed. No oxidation apparent. Paste pH 6-7.
- Sampled middlings runoff.

Regional Office Follow-Up:

Review middlings pond sample results.

BH

Barb Hall
Environmental Protection Technician
Skeena Region

Province of British Columbia | Ministry of Environment

MEMORANDUM

Bag 5000, Smithers, B. C. V0J 2N0

TO: FILE

FILE: PE-7980

FROM: Craig Stewart

DATE: July 3, 1991

SUBJECT: **SITE INSPECTION, CATEAR RESOURCES GOLDWEDGE PROPERTY, JUNE 26, 1991**

- Barb Hall & myself flew into Catear enroute to Skyline and Snip properties, June 26, 1991.
- Lakes still frozen and low areas covered in snow. Could not observe the middlings disposal, (refer to photos).
- Decline is flooded and is discharging at a rate of approximately 10 litres/minute. Effluent was clear.
- Minewater was sampled. Total metals, dissolved metals and general ions requested.
- Extensive amount of equipment on site. Difficult to ascertain condition of camp area due to snow cover.

CATEAR RESOURCES LTD. was forced into bankruptcy by Vancouver Island Helicopters. The latter had title to all of the assets on the property however they have subsequently sold the debt to their s.22

The claims were allowed to lapse and were subsequently restaked by a company associated with CANAMERA RES.? (ODIUM 1-5 CLAIMS).

At the time of the site inspection, two caretakers from the new claim owners flew in and will be staying their during the summer months.

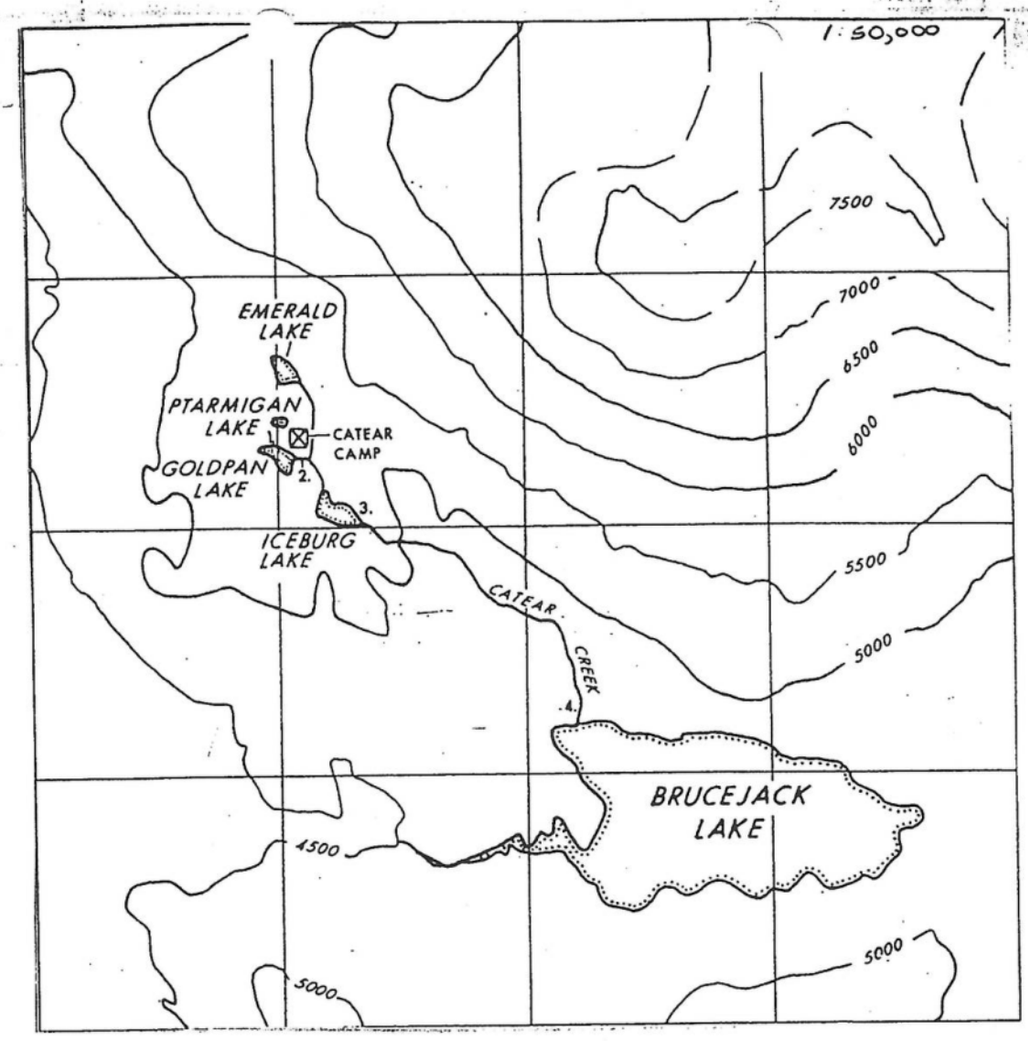
Property requires another visit during late August or September to properly assess the site condition.

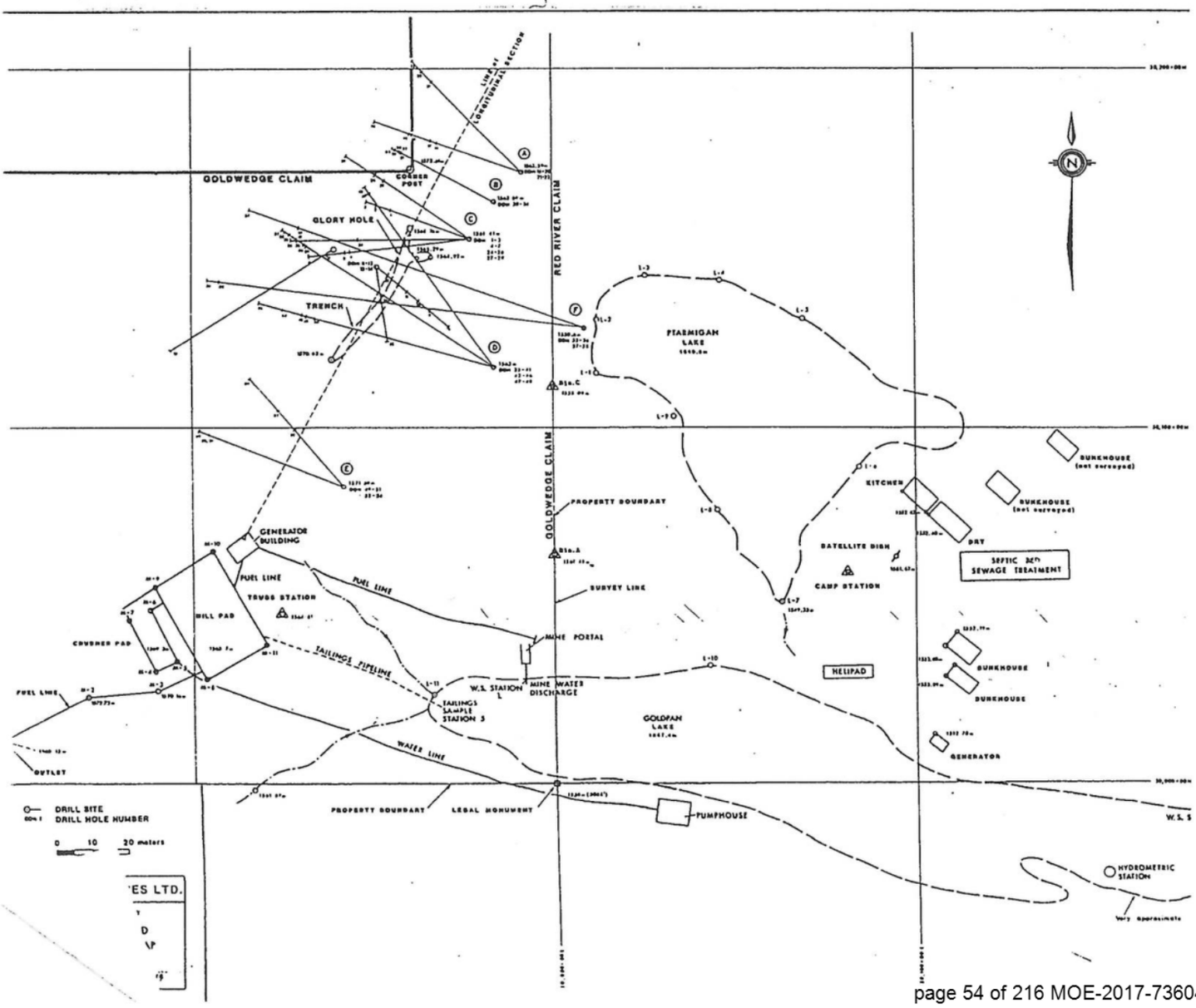
Craig Stewart

cjs/CJS

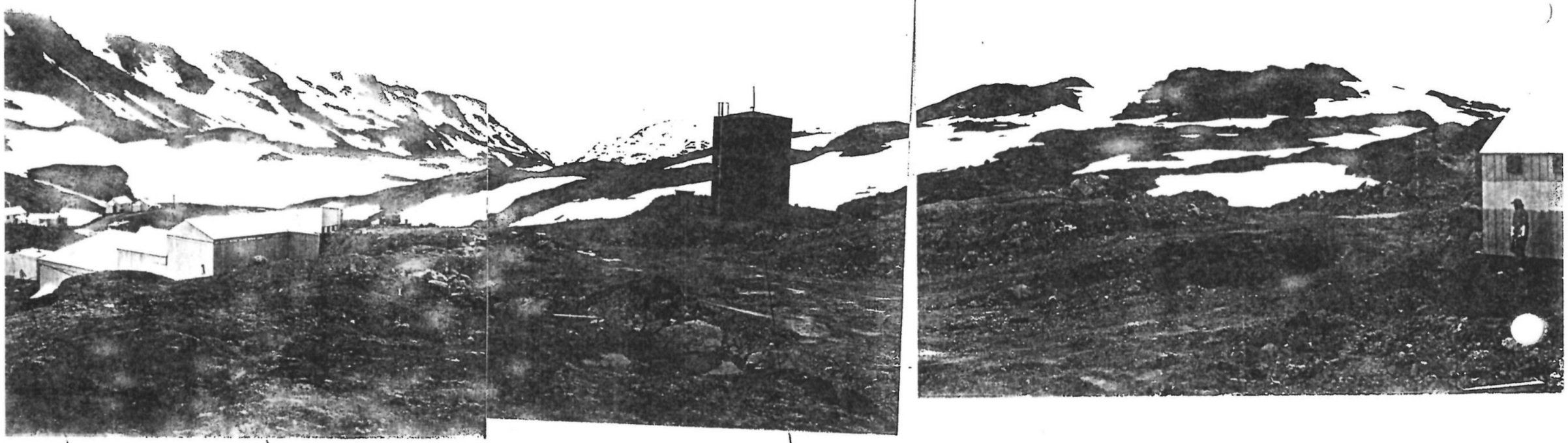
CATEAR1.MEM

PROPERTY


1:50,000
7500
7000
6500
6000
5500
5000
4500
5000
5000
EMERALD LAKE
PTARMIGAN LAKE
CATEAR CAMP
GOLDPAN LAKE
ICEBURG LAKE
CATEAR CREEK
BRUCEJACK LAKE
1.
2.
3.
4.


GOLDWEDGE CLAIM
CORNER POST
GLORY HOLE
TRENCH
RED RIVER CLAIM
GOLDWEDGE CLAIM
PTARMIGAN LAKE
PROPERTY BOUNDARY
GENERATOR BUILDING
FUEL LINE
TRUCK STATION
DRILL PAD
CRUSHER PAD
SURVEY LINE
MINE PORTAL
TAILINGS PIPELINE
W.S. STATION
MINE WATER DISCHARGE
TAILINGS SAMPLE STATION 3
GOLDPAN LAKE
WATER LINE
OUTLET
KITCHEN
BUNKHOUSE (not surveyed)
DRY
SATELLITE DISH
CAMP STATION
SEPTIC & SEWAGE TREATMENT
HELIPAD
BUNKHOUSE
GENERATOR
PUMPHOUSE
LEGAL MONUMENT
HYDROMETRIC STATION
DRILL SITE
DRILL HOLE NUMBER
0 10 20 meters

Portal
Copper Lake
EAST
WEST


GENERATOR BUILDING
MILL
FUEL STORAGE

Province of
British Columbia
MINISTRY OF
ENVIRONMENT
LAND

BC Environment

Skeena Region

[illegible] British Columbia [illegible] V0J 2N0

RETURN TO SENDER

EDWARD KRUCHKOWSKI
CATEAR RESOURCES LTD
1500 185 W GEORGIA STREET
VANCOUVER B C V6C 3H7

Province of
British Columbia
Ministry of
Environment

AIR AND WASTE
MANAGEMENT
DIVISION

REFERRAL SLIP

To: T. Roberts

Location: Smithers

From R. DALON Date .....

Location VICTORIA Phone .....

For:

- ☐ Action.
- ☐ Approval.
- ☐ Comments.
- ☒ Information.
- ☐ Reply direct.
- ☐ Signature.
- ☐ Your request.
- ☐ .....

Remarks: .....

Province of
British Columbia

OFFICE OF THE
DEPUTY MINISTER

Ministry of
Environment

Parliament Buildings
Victoria
British Columbia
V8V 1X5

Copy

DEC -5 1990

DOUBLE REGISTERED

Catear Resources Ltd.
1500 - 885 West Georgia Street
Vancouver, British Columbia
V6C 3H7

Dear Sirs:

Re: Suspension of Permit

Take notice that Waste Management Permit PE-7980 in the name of Catear Resources Ltd., is suspended effective midnight, 14 days from the date of this letter, pursuant to Section 23 of the Waste Management Act, SBC 1982, C.41, in accordance with my notice of intention to suspend dated December 7, 1989.

I am prepared to consider rescinding this suspension upon payment in full of the permit fees plus any accrued interest. In the meantime, the discharge of any waste authorized by the above referenced permit after the effective date of this suspension, will be considered as an offence under the Waste Management Act.

Dated at Victoria, British Columbia, this _____ day of _____, 1990.

Yours truly,

ORIGINAL SIGNED BY

Richard L. Dalon
Deputy Minister

cc: Mr. R.H. Ferguson
Director of Waste Management

Mr. T. Roberts
Regional Waste Manager, Smithers

Catear Resources Ltd.
400-255 17th Avenue, S.W.
Calgary, Alberta
T2S 2T8

Province of
British Columbia

OFFICE OF THE MINISTER

Ministry of
Environment

Parliament Buildings
Victoria
British Columbia
V8V 1X4

PE-7980

FM
BH

REGISTERED MAIL

Catear Resources Ltd.
1500 - 885 West Georgia Street
Vancouver, British Columbia
V6C 3H7

Gentlemen:

This notice is to advise that I am considering the suspension of Waste Management Permit PE-7980 issued on July 28, 1988, in the name of Catear Resources Ltd., pursuant to Section 23 of the Waste Management Act, SBC 1982 C.41, in that you have failed to pay money owing to the Crown; namely, permit fees in the amount of $2,643.58 including accrued interest. It is my intention to suspend this permit unless all money owing as shown on the attached statement is received by the Director of Waste Management, Ministry of Environment, Parliament Buildings, Victoria, British Columbia, V8V 1X5, within 30 days of the date of this letter.

You should be aware that upon suspension of your permit, you would be in violation of the provisions of the Waste Management Act should you continue to discharge wastes to the environment.

Sincerely,

Original Signed by
MINISTER

John Reynolds
Minister

Attachment

cc: Mr. R.H. Ferguson
Director of Waste Management

Mr. T. Roberts
Regional Waste Manager, Smithers

Catear Resources Ltd.
400 - 255 17th Avenue S.W.
Calgary, Alberta
T2S 2T8

cc 50-7430

Catear Resources Ltd.

Suite 400, 255 - 17th Avenue S.W.
Calgary, Alberta, Canada T2S 2T8
Phone: (403) 228-6761
Fax: (403) 229-3207

RA
CC
SH
BH
FAA

MEMO

From: Bill Nielsen
Nordic Environmental Services
Calgary, Alberta

Date: Sept. 13, 1989

To: Jim Hofweber
Waste Management Officer
Smithers, B.C.

Re: August 1, 1989 Diesel Fuel Spill at Catear's Goldwedge Property

---

Subsequent to your request for a written report by September 15, 1989, please find attached the report prepared by J.E. Wyder, Mine Manager and person responsible for cleanup operations and modifications to the fueling system. In addition to the gasoline pump style valve it should also be noted that the 25 mm gate valve was left in the line and is closed when refueling is completed thereby providing additional in-line safety.

Should you have further questions please contact me at (403)228-6761.

W.A. Nielsen
Environmental Affairs

WAN/lmh

Encl.

OUR FILE: 4FUELSPILLX

FUEL SPILL
CATEAR GOLDWEDGE PROPERTY

At approximately 9:00 a.m. on August 1, 1989 approximately 3150 L (700 gallons) of diesel fuel drained into the ground next to Goldpan Lake. The lake is located on Catear/Newhawk mineral leases located about 60 km north of Stewart, B.C. The lake is at the headwaters of a group of lakes that drain east to Brucejack Lake and eventually to Nipple Lake and the Bowser River.

The accident happened at a site used for refuelling crawler tractors (Figure 1). A hose leads down from a 4500 L tank located about 5 m vertically above and 15 m horizontally from the refueling site. The valve at the refueling station was a 25 mm gate valve, ie. a valve opened and shut by moving a 10 cm "handle" from being parallel to the hose (open) to 90° to the axis of the hose (shut). The valve was hung on a nail between useages.

Through vibration (the refueling station is next to two compressors and a motor generator) the hose was knocked to the ground in such a way as to strike the gate valve handle and cause it to open the fuel line.

The diesel fuel leaked into ground consisting of loose rock fill adjacent to Goldpan Lake. The fuel quickly flowed onto the surface of the lake.

An anti-pollution dam had been placed across the outlet of the lake prior to July 3, 1989 specifically to help retain any such spill of this nature. The dam has worked admirably in isolating the diesel spill within the confines of Goldpan Lake.

The lake is roughly oriented east (the dam end) - west (close to the spill). Prevailing winds are east west. Thus the diesel in general gathered in the west end in the evening and at the east end in the morning.

At the west end the diesel fuel was burned by igniting it (Figure 1). This removed a major part of the oil. At the east end (Figure 2) the fuel was absorbed by using glass wool insulation bats (about 60 cm x 40 cm x 7.5 cm) to soak up the oil. These bats were then burned in drums located next to the dam. The dam is basically a 60 cm wide discarded conveyor belt held vertical in the water with 15 cm wide wooden floats.

As of this writing no diesel slick is on the lake and it is assumed that most of the fuel has been recaptured and burnt. The lake is monitored each morning and night and will continue to be until freeze up. Special attention will be given to monitoring the spill during breakup in 1990.

The refueling line has been fitted with a regular gasoline pump style valve -- thereby eliminating any chance this type of accident could happen again.

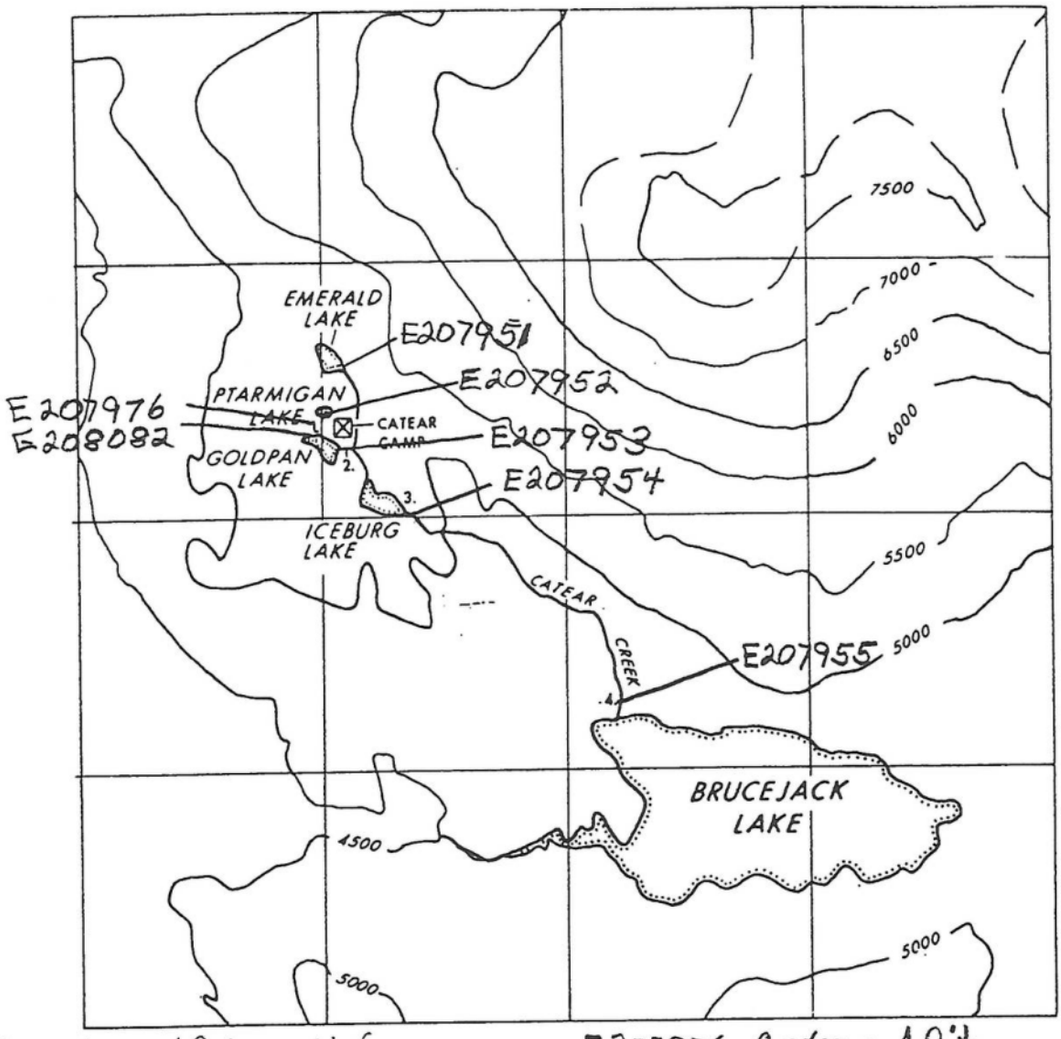
J.E. WYDER
Mine Manager

JEW/lmh OUR FILE: 4FUELSPILL


FIG 1
FUEL TANK
REFUELLING STATION
WEST BURN SITE


FIG 2
INSULATION
Burning Barrel
DAM SITE

AE7980



E207951 Emerald L. outlet
E207952 Ptarmigan L. outlet
E207953 Goldpan L. outlet
E207954 Iceberg L. outlet
E207955 Catear Cr. at Brucejack L.

E207976 Catear Adit
E208082 Catear Mill Discharge

LEGEND

1., 2., 3. & 4. Water sample locations

C.I. = 500'

1000 0 1000 2000 Metres

1 : 50, 000

NIELSEN - NORDIC

GOLDWEDGE PROPERTY

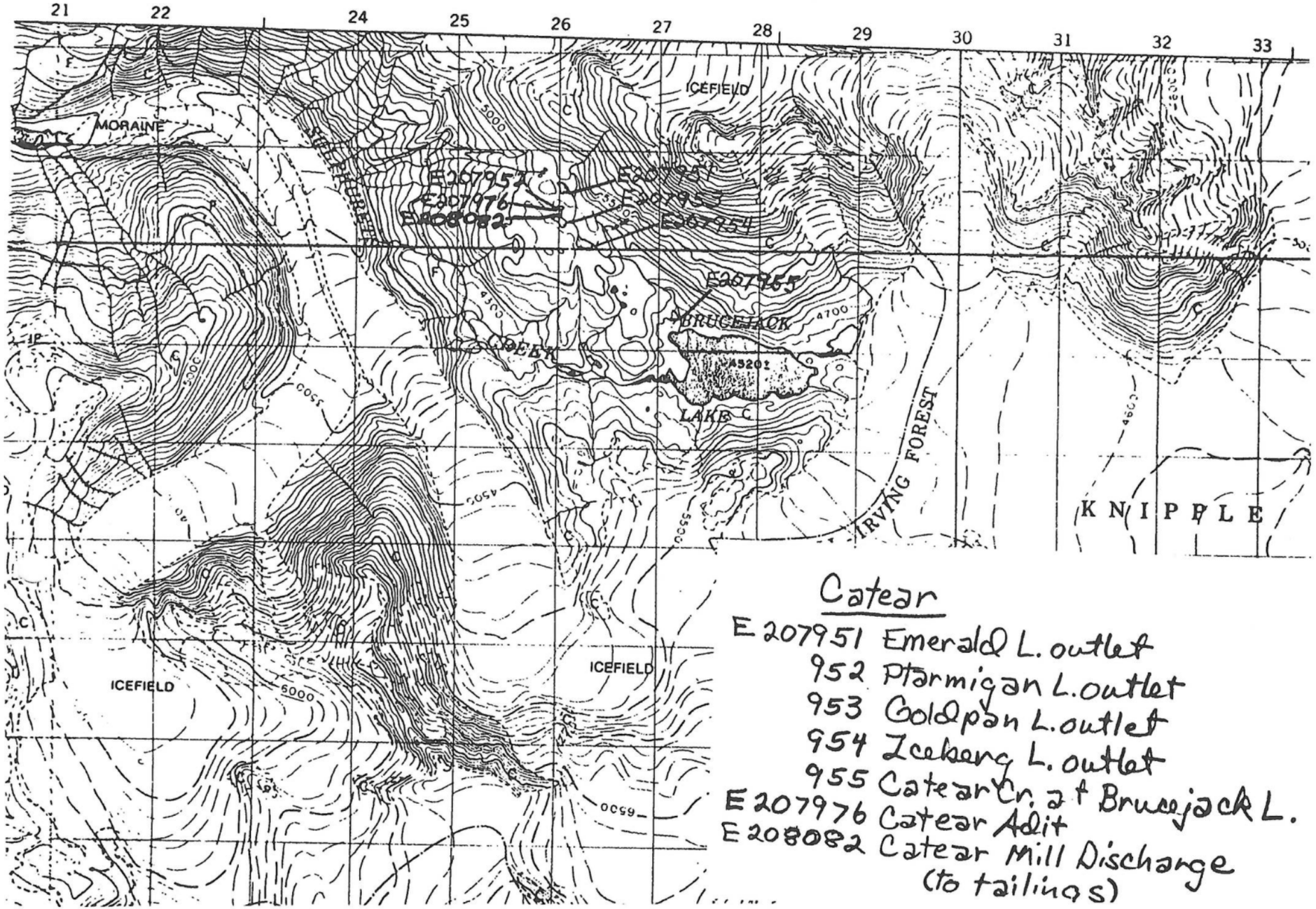
HYDROMETRIC SURVEYS & WATER QUALITY SAMPLING LOCATIONS

Source : Frank Mackie Glacier, 104 B/8 Ed. 1

Scale : 1:50,000 Figure 2-1

CANADA 104B/8 75.3023A

EDITION 1



Catear

E 207951 Emerald L. outlet
952 Ptarmigan L. outlet
953 Goldpan L. outlet
954 Iceberg L. outlet
955 Catear Cr. at Brucejack L.
E 207976 Catear Adit
E 208082 Catear Mill Discharge (to tailings)

Catear Resources Ltd.

Suite 400, 255 - 17th Avenue S.W.
Calgary, Alberta, Canada T2S 2T8
Phone: (403) 228-6761
Fax: (403) 229-3207

August 3, 1989 FILE: 4HOFWEBERX

Jim Hofweber, P.Eng.
Waste Management Officer
Northern Region
Ministry of Environment and Parks
3726 Alfred Avenue
Bag 5000
Smithers, B.C.
V0J 2N0

Dear Mr. Hofweber:

Re: August 1-2, 1989 Diesel Fuel Spill at
Goldwedge Property, Stewart, British Columbia

Subsequent to our August 3, 1989 telephone conversation with Ms. Barb Hall, please be herein notified that Catear Resources Ltd. had a 700 gal. (3150 L) spill of diesel fuel from a small storage tank located above the mine portal at their Goldwedge property.

This accidental spill occurred on Tuesday and Wednesday, August 1 and 2 between the hours of 8 PM and 8 AM when a hose coiled on top of the tank fell off the tank and knocked open a gate valve located at the bottom of the tank. The fuel drained down slope 30 m into Goldpan Lake where it is being contained by a floating boom upstream of the Goldpan Lake. Efforts began immediately to clean up the fuel from the lake surface and the cleanup should be completed by August 8, 1989.

Should you have any further questions please contact Bill Nielsen or Ed Kruchkowski (403) 228-6761.

Yours truly,

CATEAR RESOURCES LTD.

E.R. Kruchkowski
President

ERK/ly

cc: Ms. Barb Hall
Waste Management Technician

MINISTRY OF ENVIRONMENT

WASTE MANAGEMENT BRANCH

File No. PE-1980.
ALEX

CALL FORM

Date of Call 4 Aug 3189

Calling Party Bill Nielsen Telephone No. 228-6761

Address of Caller Cateas (Calgary).

Nature of Call

BN's - Stage I - Submitted
- want to report a diesel spill.
- 1000 gal tank located above mill spilled ~ 100 gal (due to gate valve being opened between 8:00 pm Aug 2 & 8:00 am Aug 3 189 (hose coiled on top of tank & somehow) fell off during the night).
- flowed ~ 30m down slope into Goldpan Lake.
- presently contained within a rubber type belt boom
- trying to soak up with cloths & moss.

Received by BH Referred to CL - spill report.

Follow-up

BH called BN back
- no containment - was suppose to be only temporary storage.
- suggested purchasing sorbent pads for this incident and future incidents.

BN will be faxing letter of explanation.

JA

(Signed) BH

ENV. 2100 cc

Province of
British Columbia

Ministry of
Environment

Skeena Region
Bag 5000
Smithers
British Columbia
V0J 2N0
Telephone: (604) 847-7270

November 28, 1989

PE-7980

Catear Resources Ltd.
Attention: Mr. Bill Nielsen
Suite 400, 255 - 17th Ave. S.W.
Calgary, Alta
T2S 2T8

Dear Mr. Nielsen:

Thank you for your summation memo of our conversation of September 13, 1989.

Please find the following a review of that memo.

1(b) The permit monitoring program is not required throughout the winter unless discharge from the mill is occurring.

1(c) In reference to Permit PE-7980, Appendix C-1, Monitoring Program the location "outlet of Goldpan Lake" is understood to actually be the outlet of Iceberg Lake. Further clarification of sample points will follow with the next field inspection.

3. The requirement for a flow metering device for the outflow from Iceberg Lake will be determined prior to the development of a full scale operation on site. If, however, you wish to establish one before that time you may contact the Water Management Branch for further information concerning the construction or installation of such a device. Phone 847-7278.

4. In regards to the monitoring for potential acidic drainage from the middlings pond and waste rock we assume that it is acid generating unless demonstrated otherwise. In that case several things need to be done as soon as possible during the next construction season:

   i) Any pooled water at the base or in the perimeter ditch should be sampled monthly for sulphate and for metals (as in the permit: pH, dissolved SO4, Al, As, Cu, Fe, Mn, Pb, Zn, alkalinity).

   ii) The potential acid generating sites need to be covered and protected from incidental runoff and precipitation as best as possible.

5. In regards to testwork for potential acid generation of waste rock please refer to Appendix B-1 of your permit. As far as the sorting of waste rock and timing of the results of the rock analysis, an assayer on-site might be most beneficial.

For a copy of the CCREM guidelines call (604) 387-6989. Please find enclosed a copy of the B.C. Provincial objectives. Also included is a copy of "Approved and Working Criteria for Water Quality", developed by the Water Management Branch. Where there is a difference between the CCREM guidelines and the B.C. Provincial Objectives the B.C. Objectives apply.

I hope I have covered all the issues to your satisfaction. If you have any further questions you may contact me at 847-7553.

Sincerely,

Barb Hall

Barb Hall
Waste Management Technician
Skeena Region

Enc.

Catear Resources Ltd.

Suite 400, 255 - 17th Avenue S.W.
Calgary, Alberta, Canada T2S 2T8
Phone: (403) 228-6761
Fax: (403) 229-3207

PE-7980.

MEMO

DATE: September 20, 1989

FILE: 3HALLX

TO: Barb Hall
Waste Management Branch
Ministry of Environment and Parks
Bag 5000
Smithers, B.C.
V0J 2N0

FROM: Bill Nielsen
c/o Catear Resources Ltd.

Dear Ms. Hall:

Just a note to summarize our discussion of 13 September last. I appreciated the opportunity of meeting with you to clarify some problems related to the Goldwedge Property and await your input regarding the issues we discussed.

In summary:

1. I submitted the Jack Wyder report concerning the August 1, 1989 diesel spill at the Goldwedge site.

2. We discussed and reviewed the 1989 water quality monitoring program at Goldwedge. We agreed that:

a) tailings samples would be taken monthly in concert with the water quality sampling already ongoing.

b) you would discuss our winter monitoring requirements with your staff people and report back to me,

c) the water quality control point for the 10000 t test permit should be the outlet of Iceberg Lake where it enters Catear Creek not Goldpan Lake as it is currently stated in the permit. We discussed the potential of amending the existing permit to correct this geographical error.

.../2

3. We discussed the need for installing a water flow metering device for the outflow of Iceberg Lake. I believe you were going to evaluate the need for this device and if we did indeed need to instal one, you would provide suggestions for the types of equipment we should instal.

4. We discussed the need for monitoring potential acidic drainage from the waste rock and middlings storage areas and you said that you would provide us with some information on how to set up monitoring stations for these components of our mining operation.

And finally,

5. We discussed our proposal for future underground rock sampling and testwork for potential acid generation. We want to have enough information to be proactively sorting acid consuming waste rock from potentially acid generating waste rock as we further develop the decline and access drifts to mining zones. We decided that you would look into this procedure as well and report back your findings to me.

I am sorry that we could not rendevous at the mine site during your visit. However, issues related to deficiencies in the Stage I Submission are currently occupying much of my time. In that regard, could you please forward us copies of the CREAM MMLEAR AND B.C. Standards for mine discharge water quality.

Should you have any questions or concerns regarding any aspect of the Goldwedge Project, please contact me at (604) 228-6761.

Sincerely,

W.A. Nielsen
Nordic Environmental Services
for Catear Resources Ltd.

WAN/ly

British Columbia

Ministry of Environment
Policy and Planning Division
Parliament Buildings
Victoria, B.C.
V8V 1X5

MEMORANDUM

To: Mr. Raymond Crook
Chairman, MDSC
Ministry of Energy, Mines
and Petroleum Resources

Date: 89-10-05

File: 63.2.51.3.05

15.3023

RE: Goldwedge Project - Stage I Review RE-7980

The Ministry of Environment has not yet completed its review of the Stage I Report for the Goldwedge Project submitted by Catear Resources Ltd. Our comments on this report will not be completed until October 25, 1989.

Ministry staff met with the Company's consultant, Mr. Bill Nielson, on September 13, 1989, at a meeting of the N/W Mine Development Review Committee in Smithers. At that time, Mr. Nielson was informed that the proposed environmental management plan for the Goldwedge Project had many deficiencies. He was advised in a general way of the changes required in Section 5 of the report. These changes have been well summarized in the minutes of the meeting as compiled by Mr. Ted Hall and distributed by Mr. Bryan Good on September 26, 1989 (a copy of the relevant portion of the minutes is attached for your reference). Subsequent to the September 13 meeting, Ministry staff have discussed these items further with company consultants. Thus, even though our comments will be late, they should not be a surprise to the company.

David Parsons

David Parsons
Ministry Coordinator, MDRP

Attachment

cc: Mr. Dick Anderson, Regional Director
Smithers
Mr. Doug Dryden, Policy and Planning Division
Mr. Ken Lozoway, Policy and Planning Division
MOE Review Participants

Province of
British Columbia

Ministry of
Environment

Skeena Region
Bag 5000
Smithers
British Columbia
V0J 2N0
Telephone: (604) 847-7270

Catear Resources Ltd.
Attention: Mr. W.A. Nielsen
Suite 400, 255 - 17th Ave. S.W.
Calgary, Alta.
T2S 2T8

PE-7980
50.7430

Dear Mr. Nielsen:

Re: Monitoring Data for August 1989 and Diesel Fuel Spill

Thank you for the above mentioned monitoring data as well as the report that was requested by Terry Roberts concerning the details of the diesel spill.

Due to poor weather conditions we were unable to fly into the site on September 20, 1989.

Please find enclosed guidelines to assist you in developing a Fuel Spill Contingency Plan. We request that a plan be submitted to this office for review before October 31, 1989 and associated equipment and supplies should also be on site before that time.

Please note I have also enclosed the most recent contact list for reporting spills in the Skeena Region and an applicable portion of the BC Fire Code.

In regards to the monitoring data, as you explained to me on September 13, 1989, there has been some confusion as to the location of the monitoring site and the labelling of the site on the monitoring data form. I have scheduled an inspection for the first week in October (weather permitting) and at that time would like to do several things:

1. Correspond sample sites with sample names.
2. Complete an audit split sample.
3. Sample and inspect the middlings pond.
4. Inspect the area effected by the diesel fuel spill.

In response to your questions regarding the flow metering, the tailings discharge rate should be properly monitored on a daily

basis. Since the Stage I submission has not been reviewed as yet the discharge rate from Iceburg Lake is not required, however it would be to your benefit to be able to submit such background data.

If you have any questions or comments you may contact me at 847-7553.

Sincerely,

Barb Hall

Barb Hall
Waste Management Technician
Skeena Region

enc.

PE-7980

AG
CL
JH

Catear Resources Ltd.

Suite 400, 255 - 17th Avenue S.W.
Calgary, Alberta, Canada T2S 2T8
Phone: (403) 228-6761
Fax: (403) 229-3207

M E M O

From: Bill Nielsen
Nordic Environmental Services
Calgary, Alberta

Date: Sept. 13, 1989

To: Jim Hofweber
Waste Management Officer
Smithers, B.C.

Re: August 1, 1989 Diesel Fuel Spill at Catear's Goldwedge Property

---

Subsequent to your request for a written report by September 15, 1989, please find attached the report prepared by J.E. Wyder, Mine Manager and person responsible for cleanup operations and modifications to the fueling system. In addition to the gasoline pump style valve it should also be noted that the 25 mm gate valve was left in the line and is closed when refueling is completed thereby providing additional in-line safety.

Should you have further questions please contact me at (403)228-6761.

W.A. Nielsen
Environmental Affairs

WAN/lmh

Encl.

OUR FILE: 4FUELSPILLX

FUEL SPILL
CATEAR GOLDWEDGE PROPERTY

At approximately 9:00 a.m. on August 1, 1989 approximately 3150 L (700 gallons) of diesel fuel drained into the ground next to Goldpan Lake. The lake is located on Catear/Newhawk mineral leases located about 60 km north of Stewart, B.C. The lake is at the headwaters of a group of lakes that drain east to Brucejack Lake and eventually to Nipple Lake and the Bowser River.

The accident happened at a site used for refuelling crawler tractors (Figure 1). A hose leads down from a 4500 L tank located about 5 m vertically above and 15 m horizontally from the refueling site. The valve at the refueling station was a 25 mm gate valve, ie. a valve opened and shut by moving a 10 cm "handle" from being parallel to the hose (open) to 90° to the axis of the hose (shut). The valve was hung on a nail between useages.

Through vibration (the refueling station is next to two compressors and a motor generator) the hose was knocked to the ground in such a way as to strike the gate valve handle and cause it to open the fuel line.

The diesel fuel leaked into ground consisting of loose rock fill adjacent to Goldpan Lake. The fuel quickly flowed onto the surface of the lake.

An anti-pollution dam had been placed across the outlet of the lake prior to July 3, 1989 specifically to help retain any such spill of this nature. The dam has worked admirably in isolating the diesel spill within the confines of Goldpan Lake.

The lake is roughly oriented east (the dam end) - west (close to the spill). Prevailing winds are east west. Thus the diesel in general gathered in the west end in the evening and at the east end in the morning.

At the west end the diesel fuel was burned by igniting it (Figure 1). This removed a major part of the oil. At the east end (Figure 2) the fuel was absorbed by using glass wool insulation bats (about 60 cm x 40 cm x 7.5 cm) to soak up the oil. These bats were then burned in drums located next to the dam. The dam is basically a 60 cm wide discarded conveyor belt held vertical in the water with 15 cm wide wooden floats.

As of this writing no diesel slick is on the lake and it is assumed that most of the fuel has been recaptured and burnt. The lake is monitored each morning and night and will continue to be until freeze up. Special attention will be given to monitoring the spill during breakup in 1990.

The refueling line has been fitted with a regular gasoline pump style valve -- thereby eliminating any chance this type of accident could happen again.

J. E. Wyder

J.E. WYDER
Mine Manager

JEW/lmh OUR FILE: 4FUELSPILL

MINISTRY OF ENVIRONMENT

WASTE MANAGEMENT BRANCH

File No. PE-7980.

CALL FORM

Date of Call Feb 27/89.

Calling Party Bill Neilsen. Telephone No. 228-6761

Address of Caller Catear Office - Calgary, Alta.

Nature of Call

Re: ① Require permit to land fixed wing carrying fuel on glacier; Chopper fuel → camp?

② Permit required for airstrip construction on nearby ridge?

③ Monitoring data required through winter.

Monitoring data not submitted as company cannot afford to pay ~~them~~ Lab costs.

∴ Results are being returned by lab. Hill has been down since Oct. No

Received by BH. Referred to JH.

Follow-up samples taken since.

BH: ① No permit required - fuel storage area must be bermed.

② - no permit required by us → however request must be reviewed by Steering Committee

③ - Catear has been ticketted → lawyers office for not submitting monitoring data.

- Begin sampling again as soon as camp is open. - March?

(Signed) BH.

ENV. 2100 cc

MINE DEVELOPMENT REVIEW PROCESS
PROJECT FACT SHEET

CORPORATE DATA:

PROJECT NAME: **Goldwedge**

COMPANY NAME AND ADDRESS

Catear Resources Ltd.
Suite 400, 255 17th Ave. S.W.
Calgary, Alberta, Canada.
T2S 2T8
Phone (403) 228-6761
Fax (403) 229-3207

CONTACT/TITLE

Mr. E. R. (Ed) Kruchkowski
President

PROJECT DETAILS

PROJECT LOCATION

2 km NNW of Brucejack Lake, 70 km NNW of Stewart B.C.

ESTIMATED CAPITAL COST (Include Dedicated Off-Site Infrastructure)

$1.5 million

MINERALS (Types to be Mined)

Gold and Silver

MINE SYSTEM (Open Pit or Underground)

Underground

ESTIMATED PRODUCTION (Daily or Annual Mill/Plant Throughput)

181 tonnes per day

PROCESS PLANT/MILL (Type of Process, if Known)

Gravity/Flotation

PROPOSED MINE LIFE (Years)

6 to 10 years

MINERAL RESERVES/RESOURCES

RESERVES/RESOURCES (Tonnes in each Category)

Golden Rocket . proven developed and undeveloped 35,439 tonnes
. drill indicated and inferred 253,391 tonnes

Discovery . drill indicated and inferred 34,372 tonnes

Goldridge . drill indicated 14,566 tonnes

AVERAGE GRADE OF ORE (Each Mineral Commodity)

Golden Rocket . proven developed and undeveloped 28.35 gpt Au, 57.88 gpt Ag

Discovery . drill indicated and inferred 27.25 gpt Au, 35.62 gpt Ag

Goldridge . drill indicated 3.56 gpt Au, 2.05 gpt Ag

CUT-OFF GRADE

6.85 gpt

POTENTIAL FOR ADDITIONAL RESERVES

Excellent

ACCESS/TRANSPORTATION

ROAD (Preference and Alternates)
None

RAIL (Routing)
None

AIR ACCESS (Origin and Destination Points)
Stewart and Tide Lake Airstrip - Helicopter only

Shipping (Preferred Port Facilities, Alternates)
Stewart

POWER SUPPLY

REQUIREMENTS
450 - 600 KVa

SUPPLY ALTERNATIVES
Diesel Generator on Site

WORKFORCE INFORMATION

TOTAL OPERATIONAL WORKFORCE (Annual Average at Full Production)
30

HOUSING OPTIONS (Camp, Neighboring Communities, New Town)
Camp on Site

CONSTRUCTION WORKFORCE (Man-years)
50

CONSTRUCTION CAMP (Size)
25

WORKFORCE ROTATION (Weeks on/off)
6 on 2 off

INDIRECT/INDUCED EMPLOYMENT (Estimates if available)
Not available

DEVELOPMENT SCHEDULE

STAGE 1 SUBMISSION FILED (Month/Year)
February/March 1989

SITE CONSTRUCTION STARTUP (Quarter/year)
1st 1988

PRODUCTION STARTUP (Quarter/Year)
2nd 1989

Province of
British Columbia

Ministry of
Environment

Skeena Region
Bag 5000
Smithers
British Columbia
V0J 2N0
Telephone: (604) 847-7270

August 21, 1989 File: PE-7980

Catear Resources Ltd.
Attention: Mr. W.A. Nielsen
Suite 400
255 - 17th Avenue S.W.
Calgary, Alta.
T2S 2T8

Dear Mr. Nielsen:

Re: Monitoring Data for June, July 1989

Thank you for the above mentioned monitoring data.

The suspended solids results for July were significantly non-compliant, exceeding the permit limits by 156 mg/l in Goldpan Lake. I suggest that this be monitored more closely and a proper course of action be taken should it occur again. Continued non-compliance is a violation of the Waste Management Act.

Also, in reviewing your monitoring data submissions there has not been any data recording and/or reporting the discharge rate from the mill or from Goldpan Lake to Catear Creek as required by your permit. I suggest that a flow meter or guage system be installed before September 31, 1989 at both sites. Please refer to your permit for reporting frequency.

A site inspection and audit sampling is planned for sometime in September. Please inform personnel performing the sampling that I would like to do a split sample at that time (you may use that sample as your required sample for that month).

If you have any questions you may contact me at 847-7553.

Sincerely,

Barb Hall

Barb Hall
Waste Management Technician
Skeena Region

Catear Resources Ltd.

Suite 400, 255 - 17th Avenue S.W.
Calgary, Alberta, Canada T2S 2T8
Phone: (403) 228-6761
Fax: (403) 229-3207

August 3, 1989

FILE: 4HOFWEBERX

PE-7980

Jim Hofweber, P.Eng.
Waste Management Officer
Northern Region
Ministry of Environment and Parks
3726 Alfred Avenue
Bag 5000
Smithers, B.C.
V0J 2N0

Dear Mr. Hofweber:

Re: August 1-2, 1989 Diesel Fuel Spill at
Goldwedge Property, Stewart, British Columbia

Subsequent to our August 3, 1989 telephone conversation with Ms. Barb Hall, please be herein notified that Catear Resources Ltd. had a 700 gal. (3150 L) spill of diesel fuel from a small storage tank located above the mine portal at their Goldwedge property.

This accidental spill occurred on Tuesday and Wednesday, August 1 and 2 between the hours of 8 PM and 8 AM when a hose coiled on top of the tank fell off the tank and knocked open a gate valve located at the bottom of the tank. The fuel drained down slope 30 m into Goldpan Lake where it is being contained by a floating boom upstream of the Goldpan Lake. Efforts began immediately to clean up the fuel from the lake surface and the cleanup should be completed by August 8, 1989.

Should you have any further questions please contact Bill Nielsen or Ed Kruchkowski (403) 228-6761.

Yours truly,

CATEAR RESOURCES LTD.

E.R. Kruchkowski
President

ERK/ly

cc: Ms. Barb Hall
Waste Management Technician

Province of
British Columbia

Ministry of
Environment

Skeena Region
Bag 5000
Smithers
British Columbia
V0J 2N0
Telephone: (604) 847-7270

June 30, 1989 PE-7980

Catear Resources Ltd.
Attention: Mr. W.A. Nielsen
Suite 400, 255 - 17th Ave SW.
Calgary, Alta
T2S 2T8

Dear Mr. Nielsen:

Re: August, September, October 1988 Monitoring Results

Thank you for the above mentioned monitoring data. As you mentioned all parameters are in compliance.

In regards to the acid generation test work, please note in your permit, Appendix B-2, waste rock characterization, and submit the appropriate information as soon as possible. Also keep in mind that a 96 hr. LC50 toxicity test is required once the 10,000 tonne pilot test limit has been reached.

As you probably are aware environmental issues and problems have recently become a public and therefore, a governmental priority. In light of this increase in environmental concern the Ministry is focusing more on enforcement action. Please ensure that you review your permit requirements and submit the requested information.

Please find enclosed for your information a copy of the BC Fire Code regarding fuel containment, an excerpt from the Waste Management Act regarding waste disposal and strict liability and a copy of a format letter regarding proper incinerator operation.

We look forward to receiving and reviewing the monitoring data submission for June/July 1989.

If you have any questions or comments you may contact me at 847-7553.

Sincerely,

Barb Hall

Barb Hall
Waste Management Technician
Skeena Region

Enc.

Catear Resources Ltd.

Suite 400, 255 - 17th Avenue S.W.
Calgary, Alberta, Canada T2S 2T8
Phone: (403) 228-6761
Fax: (403) 229-3207

GA
BA

June 21, 1989 OUR FILE: 4HOFWEBX

Jim Hofweber
Waste Management Officer
Northern Region
MINISTRY OF ENVIRONMENT AND PARKS
3726 Alfred Avenue
Bag 5000
Smithers, B.C.
V0J 2N0

Dear Mr. Hofweber:

Please find attached the results of water quality sampling for Catear Resources' - Goldwedge Project for the months of August, September and October 1988 (prior to freeze-up). Samples taken in buckets for July 1988 were incorrectly handled and were not able to be analyzed.

Please also note the results of the two (2) fecal coliform samples recorded on the data sheet for September 30, 1988.

We were pleased to note that all sample parameters were well below acceptable levels set by your office in our August 8 Permit PE7980. We believe the high suspended solids level noted by EPS at Goldpan Lake were due to variations in the location of sample sites. Our sample location (Site 2) is located at the outlet to Goldpan Lake downstream of the confluence with Emerald Creek. Subsequently, dilution of the flow out of the sediment rich waters of Goldpan Lake with the clear waters of Emerald Creek significantly reduce TSS levels in our samples.

As you are aware, Catear is currently mobilizing men and equipment to renew activity at the Goldwedge property.

Plans for the next month include:

- replenishing fuel tanks,
- construction of a berm around the 50,000 gallon fuel tank,
- installation of a Knelson concentrator and small bullion furnace to reduce concentrates in the mill,
- removal of ore from #1 stope,
- drifting and raise development,
- further acid generation testwork both from the decline host rock and from the surface materials in the area of a proposed on-site airstrip, and
- surveys for airstrip location and tailings pond engineering design requirements.

Cont'd ... /2

In addition we plan to collect two (2) sets of water samples (including 2 new sites at the outlet of Ptarmigan Lake and upstream in Emerald Creek). The first set will be collected during the week of June 19-24, 1989 prior to renewed on-site activity. The second set will be taken in early July following renewal of mining and milling actitities. We were thinking of having ASL conduct ICP scans for metals on the June samples to give us a comparison of background levels with our total and dissolved metal concentrations. If you have any comments or additional advice concerning these investigations I would appreciate a call.

Work is progressing on the focussed stage 1 submission and we are aiming to submit within the next month. I will be contacting you regarding the levels of detail we will be required to develop regarding topics such as environmental setting.

Thank you for your patience with Catear during these very difficult 6 months past. Both climatic and financial difficulties have impacted the planned progress of our project resulting in the undesirable environmental permitting deficiencies. We are commited to an environmentally acceptable and economically viable project at the Goldwedge location.

I can still be reached at Calgary (403) 228-6761 if you have helpful advice, concerns or questions.

Best Regards,

W.A. Nielsen
Nordic Environmental Services
for Catear Resources Ltd.

WAN/ly

attachments

Province of British Columbia
Ministry of Environment
WASTE MANAGEMENT

MEMORANDUM

January 24, 1989,
File: 75.3023
PE-7980

Al Phillips,
Project Review Assistant,
Prince George, B.C.

Subject: Goldwedge Project Prospectus Review - Catear Resources.

The above noted Prospectus, as well as information contained in Ministry files and obtained from on-site visit observations, has been reviewed by the Regional Waste Management Branch. It is believed that this project poses low environmental risk, since:

a) it is a relatively small scale of the operation, resulting in limited quantities of tailings and waste rock generated;

b) the mill process involves only grinding, gravity concentrating and floatation with no cyanidation;

c) the receiving environment is devoid of fish for approximately 20 km. downstream (including a 4 km. reach which flows beneath Sulphurets Glacier);

d) Brucejack Lake, 1 km. downstream of this project, will very likely be requested for use as tailings and waste rock disposal by Newhawk Gold Mines Ltd., (Sulphurets Project);

However, there are serious outstanding information requirements that must be addressed by the company, which include:

1. Monitoring data as required by Waste Management Permit PE-7980, for July through January has not been submitted. (We are considering enforcement action on this item);

2. Acid generation test work for tailings and waste rock is inadequate and further test results must be submitted;

3. The mine plan must be detailed to the extent of firmly estimating the quantity of waste rock, both acid consuming and acid generating, if any, to be produced during the applied for mine life;

4. The total volume of tailings should be accurately predicted;

5. The above two estimates of tailings and acid generating waste rock, must be matched to the underwater storage capacity of Goldpan and Iceberg lakes.

6. Supernatant water quality should be predicted based on bench work;

7. If dams are to be used for containment of tailings and acid generating waste rock, construction design must accomodate that containment in perpetuity so as to address concerns regarding reclamation and abandonment;

8. All the appropriate contingencies, as well as an outline for reclamation and abandonment of the site must be prepared;

Taking all things into consideration, we feel that the company must submit a <u>focused</u> Stage I report that addresses the information requirements outlined above in 1 through 8. Only following receipt and review of an adequately prepared document will this office entertain a recommendation of an Approval-in-Principle for this project.

If you have any questions regarding these comments, please contact the undersigned at 847-7252, or Jim Hofweber at 847-7551.

Julia Beatty

Julia M. Beatty, RPBio,
Waste Management Branch,
Skeena Region.

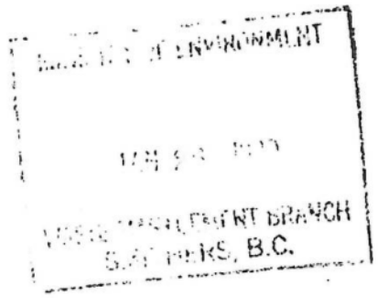
/jmb

c.c. J. Hofweber, Waste Mgmt.
T. Roberts, Waste Mgmt.
D. Parsons, Victoria.
P. Mehling, EPS, West Vancouver.

SAMPLE: 880558 ID: CATEAR LABID: #38 TYPE: GW
LOGGED IN: 16-AUG-88 DUE: 13-SEP-88 COMPLETED: 06-OCT-88
FROM: GODIN,BENOIT EPS,KAP 100 IN FRESH WATER

Lab Sample Number	ALK MG/L	COND UMHO/C	DISGF CD MG/L	DISGF CU MG/L	DISGF PB MG/L	DISICP MC MG/L	DISICP MT MG/L	NFR MG/L	PH REL.U.	SO4 MG/L	TOTGF CD MG/L	TOTGF CU MG/L	TOTGF PB MG/L	TR MG/L
2	21.5	58	(0.0001	(.0005	(.0005	29.3	29.3	12	7.4	7	(0.0001	(.0005	(.0005	35
3	27.0	90	(0.0001	(.0005	(.0005	46.3	46.3	(5	7.9	14	(.0001	(.0005	(.0005	48
4	34.0	123	(0.0001	(.0005	(.0005	53.8	54.8	431	7.9	19	(.0001	(.0005	(.0005	556
5	78.5	290	(0.0001	(.0005	(.0005	141	144	16	8.3	68	(.0001	(.0005	(.0005	213

PE-7980



SAMPLE: 880558 ID: CATEAR LABID: #38 TYPE: GW
LOGGED IN: 16-AUG-88 DUE: 13-SEP-88 COMPLETED: 06-OCT-88
FROM: GODIN,BENOIT EPS,KAP 100 IN FRESH WATER

Lab Sample Number	DISICP AG MG/L	DISICP AL MG/L	DISICP AS MG/L	DISICP B MG/L	DISICP BA MG/L	DISICP BE MG/L	DISICP CA MG/L	DISICP CD MG/L	DISICP CO MG/L	DISICP CR MG/L	DISICP CU MG/L	DISICP FE MG/L	DISICP MG MG/L	DISICP MN MG/L	DISICP MO MG/L	DISICP NA MG/L	DISICP NI MG/L	DISICP P MG/L	DISICP PB MG/L	DISICP SB MG/L	DISICP SE MG/L	DISICP SI MG/L	DISICP SN MG/L	DISICP SR MG/L	DISICP TI MG/L	DISICP V MG/L	DISICP ZN MG/L
2	(.01	(.05	(.05	(.01	.028	(.001	11.3	(.005	(.005	(.005	(.005	(.005	.3	.002	(.01	.6	(.02	(.1	(.05	(.05	(.05	.76	(.05	.064	(.002	.01	(.002
3	(.01	(.05	(.05	(.01	.025	(.001	18	(.005	(.005	(.005	(.005	(.005	.3	(.001	(.01	.5	(.02	(.1	(.05	(.05	(.05	.95	(.05	.057	(.002	(.01	(.002
4	(.01	.05	(.05	(.01	.042	(.001	20.1	(.005	(.005	(.005	(.005	(.005	.9	.096	(.01	2.7	(.02	(.1	(.05	(.05	(.05	.97	(.05	.429	(.002	(.01	(.002
5	(.01	(.05	(.05	(.01	.017	(.001	51.5	(.005	(.005	(.005	(.005	(.005	3.1	.057	(.01	10.7	(.02	(.1	(.05	(.05	(.05	2.95	(.05	2.07	(.002	(.01	(.002

SAMPLE: 880558 ID: CATEAR LABID: #38 TYPE: GW
LOGGED IN: 16-AUG-88 DUE: 13-SEP-88 COMPLETED: 06-OCT-88
FROM: GODIN,BENOIT EPS,KAP 100 IN FRESH WATER

Sample Number	TOTICP AG MG/L	TOTICP AL MG/L	TOTICP AS MG/L	TOTICP B MG/L	TOTICP BA MG/L	TOTICP BE MG/L	TOTICP CA MG/L	TOTICP CD MG/L	TOTICP CO MG/L	TOTICP CR MG/L	TOTICP CU MG/L	TOTICP FE MG/L	TOTICP MG MG/L	TOTICP MN MG/L	TOTICP MO MG/L	TOTICP NA MG/L	TOTICP NI MG/L	TOTICP P MG/L	TOTICP PB MG/L	TOTICP SB MG/L	TOTICP SE MG/L	TOTICP SI MG/L	TOTICP SN MG/L	TOTICP SR MG/L	TOTICP TI MG/L	TOTICP V MG/L	TOTICP ZN MG/L
2	(.01	.45	(.05	(.01	.044	(.001	10.9	.062	(.005	(.005	(.005	.106	.3	.005	(.01	.5	(.02	(.1	(.05	(.05	(.05	.99	(.05	.064	.003	(.01	(.002
3	(.01	.07	(.05	(.01	.028	(.001	18.9	(.005	(.005	(.005	(.005	(.005	.4	(.001	(.01	.5	(.02	(.1	(.05	(.05	(.05	.81	(.05	.061	(.002	(.01	.009
4	.02	1.17	.05	(.01	.124	(.001	22.8	(.005	.007	.007	.006	.148	1.2	.122	.01	3.2	(.02	(.1	(.05	.05	(.05	2.04	(.05	.504	.007	(.01	.019
5	(.01	.23	(.05	(.01	.028	(.001	53.7	(.005	(.005	(.005	(.005	.325	3.4	.073	(.01	11.4	(.02	(.1	(.05	(.05	(.05	2.61	(.05	2.19	.003	(.01	.012

2 Cateau Creek above Bruce Jack Lake.
3 Emerald Creek above Goldpan Lake.
4 Goldpan Creek between Goldpan Lake and Iceberg Lake.
5 Mine adit.

Province of British Columbia

Ministry of Energy, Mines and Petroleum Resources

MEMORANDUM

To: Selected Members
Mine Development
Review Process

Date: December 6, 1988

Re: Catear (Goldwedge) Gold/Silver Project
- Prospectus (November, 1988)

Catear Resources Ltd. has filed a prospectus on its Goldwedge Gold/Silver Project, located 2 km North Northwest of Brucejack Lake, and approximately 70 km North Northwest of Stewart. The total workforce is estimated to be 30. The proponent is proposing a 181 mtpd operation, with an underground minelife of 6 - 10 years, based on total reserves/resources estimated to be 337,768 tonnes. The potential for minelife extension is considered excellent

The company's development schedule appears somewhat optimistic in that there is no provision for a field season after receipt of the prospectus review comments and before the filing of a Stage I report. While official completion of the prospectus review is unlikely before mid-February, 1989, key agencies may be approached for direct discussions with the company in order to obtain a preview of prospectus review comments, thus allowing an early commencement of required Stage I fieldwork. If your agency is approached, please cooperate with this informal approach to exchanges. The company initiated in May, 1987, a study problem related to water quality, bathymetry, acid generation potential and tailings disposal. As well, permit approvals for a 10,000 tonne pilot test were obtained in July, 1988. This test is allowing the proponent to conduct metallurgy and recovery studies during late 1988 and early 1989. Information is currently being gathered related to water requirements and tailings disposal.

The Ministry of Energy, Mines and Petroleum Resources, in cooperation with the Mine Development Steering Committee, is planning before the end of 1988, to establish regionally-based Mine Development Advisory Committees to review and assess small, local, relatively non-controversial mine development proposals. These committees will be chaired by a District Mines Inspector, and will be comprised of regional representatives of key Mine Development Review Process agencies. The Catear Gold/Silver Project may be a candidate for review by the Smithers Mine

Development Advisory Committee (rather than by the MDSC) in the future, and your opinion is sought in this regard.

In the meantime, by no later than 1989-02-03, you are asked to review the prospectus and respond to the following questions from your agency's perspective:

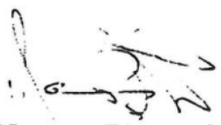
1. Does your agency require the company to provide information in a Stage I submission? If so, please outline your concerns and the topics to be addressed.

2. If not:

   (i) Does your agency wish to identify any matters which should be addressed at the permitting stage?

   (ii) Alternatively, does your agency decline all further involvement in the review of this project? (In accordance with normal practice, failure to respond will be interpreted as indicating no further interest).

3. Does your agency feel that, even if a Stage I submission is required, further review of this project could nevertheless be handled by the Smithers Mine Development Advisory Committee?



Norman Ringstad, Secretary
Mine Development Steering Committee
c/o Engineering and Inspection Branch
Mineral Resources Division

Attachment: Prospectus

ccs: Bruce McRae
Karen Koncorhada
Ralph McGinn
Rick Whittaker (workforce less than 100)

Distribution: see attached list

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NORDIC ENVIRONMENTAL SERVICES

Suite 8 5200 - 53rd Ave. N.W.
Calgary, Alberta
T3A 2C4
Phone 288-4807

November 18, 1988

Barbara Hall
Waste Management Technician
Northern Region
Ministry of Environment and Parks
3726 Alfred Avenue
Bag 5000
Smithers, B.C.
V0J 2N0

Dear Ms. Hall:

In response to your letter dated October 6 (received November 1), please find enclosed the following information relative to permit PE 7980 and mill throughput at the Goldwedge Property during the period of operation of the 10,000 tonne pilot test.

1. Flow rate from the gold milling complex to Goldpan Lake was measured on September 5, 1988. On that date the mill processed 31.5 tonnes of material or 1.31 tonnes per hour. The measured flow rate of tailings slurry to Goldpan Lake measured at 1530 h was 255 m^3/d.

2. As there is no discharge from Goldpan Lake directly into Catear Creek (see Figure 2-1 attached), therefore, we cannot respond to your request for that information. However, the flow rate from Goldpan Lake outflow into Iceberg Lake measured at water sampling station 2 on September 4, 1988 was 4819.8 m^3/d (1.97 cfs).

3. See attachment number 2, mill throughput for the Goldwedge Property calculated for the period of mill operation from mill start-up on 27 June 1988 to mill shut down on 8 October 1988. The data is summarized on a daily, monthly and total basis on two separate schedules for your convenience.

(continued from page 1)

4. Milling and mining operations are scheduled to begin once again during the third week of November 1988. I will be phoning you to arrange a site tour as soon as these operations are commenced.

5. I am sorry that the results of our July, August, September and October water sampling have not been forwarded to you. Water quality data and analysis have been tied up at ASL due to unforeseen difficulties originating with Catear Resources. I have been assured that these problems will be rectified within a few days and that these data will then be available to me. The results will be mailed to you the day I receive them.

Should you have further questions please telephone me at either 228-6761 or 288-4807.

Respectfully submitted by:

W.A. Nielsen, M.Sc.
Nordic Environmental Services
for Catear Resources Ltd.

Source : Frank Mackie Glacier, 104 B/8 Ed. 1

C.I. = 500'

1, 2, 3 & 4. Water sample locations

LEGEND

1000 0 1000 2000 Metres

1 : 50, 000

NIELSEN - NORDIC

GOLDWEDGE PROPERTY

HYDROMETRIC SURVEYS
& WATER QUALITY
SAMPLING LOCATIONS

Scale : 1:50,000 Figure 2-1

SCHEDULE 1: DAILY MILL THROUGHPUT -- JUNE TO OCTOBER 1988 FOR THE GOLDWEDGE PROPERTY

Note: Values are in tonnes of dry material per day.

Date	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER
1	0	25.8	0	32.0	26.8
2	0	29.0	0	31.9	0
3	0	19.1	0	30.3	34.6
4	0	31.3	0	31.5	33.6
5	0	31.5	0	32.0	34.6
6	0	31.9	0	30.2	35.7
7	0	33.8	22.1	29.6	30.1
8	0	34.0	0	27.0	31.0
9	0	31.0	23.3	32.2	mill shut
10	0	15.9	31.6	31.2	down
11	0	30.0	31.1	30.1	
12	0	29.3	32.8	30.8	
13	0	0	20.9	29.7	
14	0	26.1	0	31.1	
15	0	34.7	32.8	9.8	
16	0	33.3	26.6	22.7	
17	0	30.6	29.1	31.3	
18	0	23.6	28.9	26.2	
19	0	32.2	22.7	28.4	
20	0	31.4	11.7	31.9	
21	0	25.3	0	31.1	
22	0	31.2	0	32.3	
23	0	29.1	0	32.4	
24	0	29.4	6.4	31.9	
25	0	11.2	31.3	16.7	
26	0	29.6	27.2	32.1	
27	8.7	26.7	30.3	31.6	
28	12.5	26.2	33.4	6.5	
29	0	14.0	24.0	0	
30	25.9	27.3	30.4	26.9	
31		25.1	32.0		

SCHEDULE 2: MONTHLY AND TOTAL MILL THROUGHPUT -- JUNE TO OCTOBER 1988 FOR THE GOLDWEDGE PROPERTY

Note: Values are in tonnes of dry material

MONTH	TONNAGE PROCESSED
June	47.1
July	829.6
August	528.6
September	821.4
October	226.4
TOTAL	2453.1

MINISTRY OF ENVIRONMENT

WASTE MANAGEMENT BRANCH

TR, BH

File No. PE-7980

CALL FORM

Date of Call Oct 24, 88

Call~~ing~~ed Party BILL NIELSEN Telephone No. 228-6761

Address of Caller CATEAR RESOURCES, CALGARY

Nature of Call UPDATE ON PROJECT:
a) MILL IS DOWN, BEING REFITTED W/ BALLMILL FLOTATION CELLS
b) MONITORING DATA FOR JULY, AUG & SEP BEING SENT

MY RESPONSE
a) WMB WILL NOT VISIT SITE THIS WEEK AS PLANNED. WILL WAIT TILL MILL IS OPERATING MID-LATE NOV.
- ~~b)~~ ANY PROCESS CHANGE (FLOTATION, ET AL) WILL REQUIRE AMENDMENT OF PE-7980
b) I REMINDED B.N. THAT MONITORING DATA IS REQUIRED ON A MONTHLY BASIS.

Received by Referred to

Follow-up - I REQUESTED THE START-UP DATE OF MILLING.

- I INFORMED BN. THAT CONTRARY TO THE STATEMENT IN PARAGRAPH 4 OF HIS LETTER DATED OCT. 11, 88, ALL MATERIAL PROCESSED THROUGH THE MILL WILL BE COUNTED TOWARD THE 10,000 TONNE TOTAL AUTHORIZED BY THE PERMIT (AND THE EMDRSC.). THIS MUST BE REPORTED ON A MONTHLY BASIS.

- Nov 24, 88 - Ken Smanayck ~ 3530 t during July 1 ~ end of Sept.

(Signed) J. I. [signature]

ENV. 2100 cc

Catear Resources Ltd.

Suite 400, 255 - 17th Avenue S.W.
Calgary, Alberta, Canada T2S 2T8
Phone: (403) 228-6761
Fax: (403) 229-3207

BH
PE-7980

October 12, 1988

Newhawk Gold Mines Ltd.
Suite 860 - 625 Howe Street
Vancouver, B.C.
V6C 2T6

Attention: Mr. D.A. McLeod
President

Dear Sir:

Further to our telephone conversation of September 23, 1988 and your fax letter of the same date, I would like to report on the results of our water quality testing.

Mr. Bill Nielsen of Nordic Environmental Services, Calgary, collected fecal coliform samples at the outlets of Iceberg Lake and Catear Creek on Friday, September 30, 1988. These samples were flown to Vancouver where they were analyzed by ASL Analytical Laboratories (contact Ms. Barbara Szczachor - 253-4188). The samples were found to contain no fecal coliform. As both of these sites are downstream of our camp and mining operations it is obvious that Catear is not contaminating your water supply as stated in the above-mentioned correspondence.

We trust these results will alleviate your concerns in regards to our operation.

Yours truly,

CATEAR RESOURCES LTD.

E.R. Kruchkowski
President

ERK/lmh

cc: Skeena Health Unit, Terrace
Waste Management Branch, Smithers
Ray Crook, Chairman MDSC, MEMPR - Victoria
John Dick, MOE, Victoria
P. Mehling, EPS, West Vancouver

NEWHAWK GOLD MINES LTD. (N.P.L.)

PE-7980
PE-7922

BY TELECOPIER

September 23, 1988

Labour Resources Ltd.
Suite 400, 255 - 17th Avenue S.W.
Calgary, Alberta
T2S 2T8

Attention: Mr. Ed Kruchkowski
President

168 tot. col. at bottom top
1/100 ml
sample taken by Saskia

Dear Sirs:

Further to our telephone conversation this morning, we have been advised by the medical health officer in Terrace that Bruce Jack Lake, which is the source of our water supply for our 50 man camp, has been contaminated by high coliform count as a result of your operation upstream.

It is our intention to strongly protest that you continue to discharge untreated sewage into our water supply and request that you immediately take positive steps to remedy this untenable situation.

Yours very truly,
NEWHAWK GOLD MINES LTD. (N.P.L.)
Per:

Donald A. McLeod, President

cc: Skeena Health Unit, Terrace
Waste Management Branch, Smithers
Ray Crook, Chairman, MOSC, MEMPR - Victoria
John Dick, MOE, Victoria
P. Mehling, IPS, West Vancouver

Suite 960 - 625 Howe Street, Vancouver B.C. V6C 2T6 Telephone (604) 687-7848

NEWHAWK GOLD MINES LTD. (N.RL.)

Telecopier (604) 689-5041

TELECOPIER COVER LETTER

Date: Sept 23/88

Please deliver the following pages to:

Name: Larry Roberts

Company: Waste Management Branch

City: Smithers

Telecopier No: ( ) 847-7591

From: D.A. McLeod Time sent: 11:31 am

There are 2+1 pages to this message including cover letter.

Sent by: M Bain Telephone (604) 687-7545

Additional Comments:

PERMIT REFERRAL AND DISTRIBUTION SLIP

NORTHERN REGION
APPLICATION DATE Nov 12, 87
APPROVAL NO. ______
PERMIT NO. AE 7980

NEW PERMIT [X] AMENDMENT: TECHNICAL [ ] MINOR TECHNICAL [ ] ADMIN. CHANGES [ ] APPROVAL [ ]

W.M.O. HOF TECH ______ C.O. ______

REGISTERED (LEGAL) ADDRESS	MAILING ADDRESS	AGENT'S ADDRESS
CATEAR RESOURCES LTD	① CATEAR RESOURCES LTD	RESCAN ENVIRONMENTAL
3000 - 595 BURRARD ST.	SUITE 400, 255-17th AVE S.W.	SERVICES LTD
BOX 49052	CALGARY, ALBERTA T2S 2T8	SUITE 510, COOPERS & LYBRAND
VANCOUVER, B.C.	② 2nd BOX 311, STEWART B.C.	BLDG, 1111 W. HASTINGS ST.
V7X 1R3	V0T 1W0	VANCOUVER B.C. V6E 2J3

	Init.	IN	OUT
STENO (for typing)	DM	88-06-28	88-06-29
SECTION HEAD (review)		88-06-29	88-06-30
PROCESSOR (edit)	JH	88/07/21	88/07/21
EXPEDITOR/PROCESS CLERK (reg. address & S.L.'s) ok HOF	DM	88-07-25	88-07-26
SECTION HEAD (endorse)		88/07/28	88/07/26
MANAGER (endorse)	RH	88/07/27	88/07/28
EXPEDITING CLERK (prepare originals)	C	88/07/28	88/07/28
MANAGER (for signature)	RH	88/07/28	88/07/28
EXPEDITING CLERK check:	DM	AUG 9 1988	

dates/signature/order [✓]
photocopy/mailing [✓]
monthly report entry [✓]
PASS detailed data sheet [ ]
distribution stamp/ return to Manager [ ]
mailing date 88-08-10

COPY OF PERMIT & L.O.T.

Permittee: Cl
- Bordered copy to registered address [X]
- plain x'd copy to mailing address [X] DM x 2
- agent (if applicable) [X] DM
- Central Registry (Victoria) [X] DM
- Environment Canada [X] DM
- Other Agency (specify) [X] DM
  - ② MEMPR SMITHERS

ORIGINAL PERMIT (locked file) "CK" [X]

NOTIFICATION ONLY (Mandatory)
- Water Management [X] DM
- Concerned Persons [ ]
- Health Branch [X] DM
- Regional District [X] DM K-S
- Fish & Wldlf Regional [X] DM TRAPPE

(As applicable)
- Agriculture [ ]
- Mines RAY CROOK [X] DM
- Fisheries Br. Marine Res. [ ]
- PLANNING & ASSESSMENT BRANCH MEMPR ~~Air Emissions Management~~ [X]

	Date Completed	Init.
TECHNICIAN/W.M.O. (complete PASS data report)		
EXPEDITING CLERK (enter PASS data report on computer)		

Determined by Processor's Initial JH

PUBLICATION OF MANAGER'S DECISION

Required	Init.	Date Completed	Init.
Yes [ ] No [X]	JH		

CONCERNED PERSONS

NAME	ADDRESS	S.L.#	MAILING DATE
NONE			

Province of British Columbia

Ministry of Environment
WASTE MANAGEMENT

MEMORANDUM

AUG 9 1988

PE-7980

Headquarters Central Registry
Waste Management Branch
810 Blanshard Street
Victoria, B.C.
V8V 1X5

Re: Application Pursuant to Waste Management Act
on behalf of Catear Resources Ltd.

Enclosed is a copy of Permit No. PE-7980 dated JUL 28 1988

D. Meier
Expeditor

Encl.

Province of
British Columbia

Ministry of
Environment
and Parks

Waste Management
Northern Region
Bag 5000
Smithers
British Columbia
V0J 2N0
Telephone: (604) 847-7260

AUG 9 1988

PE-7980

Mr. B.A. Heskin, P. Eng.
Regional Director General
Pacific Region
Environmental Protection
Conservation & Protection
Environment Canada
3rd Floor, Kapilano 100, Park Royal
WEST VANCOUVER, B.C. V7T 1A2

Dear Mr. Heskin:

Re: Application Pursuant to Waste Management Act
on behalf of Catear Resources Ltd.

Enclosed is a copy of Permit No. PE-7980 dated JUL 28 1988

Yours truly,

D. Meier
Expeditor

Encl.

Province of
British Columbia

Ministry of
Environment
and Parks

Waste Management
Northern Region
Bag 5000
Smithers
British Columbia
V0J 2N0
Telephone: (604) 847-7260

AUG 9 1988

PE-7980

Inspection Branch
Ministry of Energy, Mines & Petroleum Resources
Bag 5,000
SMITHERS, B.C. V0J 2N0

Attention: Doug Flynn

Dear Mr. Flynn:

Re: Application Pursuant to Waste Management Act
on behalf of Catear Resources Ltd.

Enclosed is a copy of Permit No. PE-7980 dated JUL 28 1988

Yours truly,

D. Meier
Expeditor

Encl.

Province of
British Columbia

Ministry of
Environment
and Parks

Waste Management
Northern Region
Bag 5000
Smithers
British Columbia
V0J 2N0
Telephone: (604) 847-7260

AUG 9 1988

PE-7980

X Water Management Branch - Smithers
Attention: Regional Engineer

X Medical Health Officer - Terrace

X Regional District of Kitimat-Stikine

X Fish and Wildlife Branch - Terrace

X Mineral Policy & Evaluation Branch
Energy, Mines & Petroleum Resources
Room 430 A, 617 Government Street
Victoria, B.C. V8V 1X4
Attention: Ray Crook

X Planning and Assessment Branch
777 Broughton Street
Victoria

Re: Application Pursuant to Waste Management Act
on behalf of Catear Resources Ltd.

Permit No: PE-7980, dated JUL 28 1988 has been issued to the subject applicant.

D Meier

D. Meier
Expeditor

JH/dm

File: AE-7980
From: J. Hofweber
Northern Region
Date: June 28, 1988

RESUME FOR PERMIT APPLICATION ASSESSMENT

Application dated November 25, 1987 on behalf of Catear Resources Ltd. located near Sulphurets Creek, British Columbia

---

1. APPLICATION

The application requests authorization to discharge 430 m^3/day of typical gold mill tailings from a 10,000 tonne bulk sample to Goldpan Lake and 6546 m^3/day of tailings decant and influent runoff from Goldpan Lake to Catear Creek.

The discharge from Goldpan Lake to Catear Creek is characterized as:

pH range	6.5 - 8.5
diss Al	0.50 mg/L
Diss Cd	0.01 mg/L
diss Cr	0.05 mg/L
diss Cu	0.05 mg/L
diss Fe	0.30 mg/L
diss Pb	0.05 mg/L
diss Sb	0.25 mg/L
diss Zn	0.20 mg/L
diss As	0.50 mg/L

The milling operation will be limited to 10,000 tonnes of ore undergoing gravity separation. Treatment of effluent will be limited to settling in Goldpan Lake.

2. APPLICATION REVISIONS

The application did not specify total suspended solids (TSS) as an effluent characteristic. Environment Canada requested that TSS be included in the permit in reference to the "Federal Metal Mining Liquid Effluent Regulations" which specify a maximum of 50 mg/L for a single grab sample and a maximum monthly average of 25 mg/L. It is recommended that the permit be issued with a limit of 75 mg/L which coincides with the maximum of the Provincial Objectives for the Mining, Smelting and Related Industries of B.C. This limit is justified per the discussions outlined in the Technical Assesment of this application.

3. HISTORY

The property was visited by the author during its exploration phase in June and September, 1987. Meetings with the company president, Ed Krutchkowski indicated his intention to process a 10,000 tonne bulk sample. The author referred the company to Ray Crook of MEMPR regarding the mine development review process and suggested that Catear engage an environmental consulting firm to prepare a prospectus and submit applications. Rescan Environmental Consultants Ltd. was selected by the company and submitted the subject application on behalf of Catear Resources Ltd.

4. ADMINISTRATIVE ASPECTS

The application was posted on the site November 15, 1987, published in the B.C. Gazette and the Stewart Sentinel newspaper and circulated to the appropriate agencies. The production capacity form was received indicating SIC code 0611, "gold mine" and a capacity of 98 t.p.d.

5. POLICY/OBJECTIVES

The application conforms to the "Pollution Control Objectives for the Mining, Smelting and Related Industries of British Columbia, 1977".

6. AGENCY COMMENTS

Ministry of Health, Terrace: objections[1]
Regional District of Kitimat-Stikine: no reply
Fish & Wildlife, Smithers: no objection
Water Management, Smithers: no objection

Inspector of Mines, Smithers: no comment
Environment Canada: conditional support[2]

1) The response, dated 88-01-15, from District Public Health Inspector, Saskia van Beynum, registered an objection to the application because Newhawk Gold Mines Ltd's. development camp draws drinking water from Brucejack Creek at the outlet of Brucejack Lake (which receives inflow from Catear Creek and Goldpan Lake). As discussed in the Technical Assessment for this application, subsequent testing of tailings samples indicates the decant water quality meets B.C. drinking water guidelines. This information was forwarded to Ms. van Beynum on 88-06-08. A memo dated 88-06-13 indicated that Ms. van Beynum has withdrawn her objection based on the tailings testwork.

2) Correspondence from Environment Canada dated 88-01-21, 88-02-18 and 88-05-04 supports granting of the subject permit "with conditions and monitoring requirements as recommended" below:

a) "additional acid generation test work on mill tailings is recommended as a permit condition"

- additional AMD test work will be covered in the monitoring program.

b) "underwater disposal site [must] have adequate capacity and depth"

- this has been demonstrated by information submitted on lake volume and discharge rate.

c) "additional test work to fully characterize ... waste rock ... to be included in the permit"

- this will be covered by a special clause in the permit (see Recommendations section).

d) recommended monitoring program:

i) tailings effluent sampled for pH, dissolved Cu, Fe, Pb, Zn, sulfate and percent solids on three occasions.

ii) Goldpan Lake outlet sampled monthly for pH, alkalinity/acidity, sulfate, total and dissolved Cu, Fe, Pb and Zn.

iii) tailings solids sampled for acid generation potential.

iv) Results reported within ten days of sampling. Project report within sixty days of completion of 10,000 tonne milling

- these recommendations have been reflected in the proposed monitoring program

e) permit specification that mercury and cyanide are not approved reagents for this operation.

7. CONCERNED PERSONS

None.

8. SITE INSPECTION REPORT

The site was visited on two occasions prior to submission of this application. Subsequently submitted information has been consistent with observations made during the two site visits.

9. SECURITY REQUIREMENT

Security is not recommended for this application.

10. DISCUSSION OF TECHNICAL ASPECTS

The effluent discharge from the tailings impoundment is not expected to have a detrimental effect on the receiving environment because:

A. Tailings are not acid generating.

B. No reagents are used in the operation.

C. There is sufficient retention time in Goldpan Lake to reduce suspended solids to adequate levels.

D. Tailings testwork has shown that dissolved metals levels will be extremely low.

E. There is further protection for aquatic resources considering the additional retention time and available dilution in Brucejack Lake and Sulphurets Creek.

11. RECOMMENDATIONS

It is recommended that the Regional Waste Manager, in accordance with Section 8 of the Waste Management Act, issue Permit PE-7980 to Catear Resources Ltd. as outlined below:

Appendix 01

authorizes 430 m^3/d to Goldpan Lake from a gold mill

Appendix 02

authorizes 6546 m^3/day to Catear Creek from Goldpan Lake

Appendices B-1 and B-2

contain standard clauses:

1. MAINTENANCE OF WORKS
2. EMERGENCY PROCEDURES
3. BYPASSES
4. PROCESS MODIFICATIONS

special clauses:

5. MILL REAGENTS
   per request from Environment Canada

6. MILL PRODUCTION
   limited to 10,000 tonnes per Provincial Mine Development Guidelines

7. WASTE ROCK DISPOSAL
   to prevent acid generation

8. WASTE ROCK CHARACTERIZATION
   to prevent acid generation

Appendices C-1 and C-2

monitoring program per technical assessment

J. Hofweber, P.Eng.
Waste Management Officer
Northern Region

JH/dm

File: AE-7980
From: J. Hofweber
Northern Region
Date: June 28, 1988

TECHNICAL ASSESSMENT FOR PERMIT AMENDMENT APPLICATION

Application dated November 25, 1987 on behalf of Catear Resources Ltd. located near Sulphurets Creek, British Columbia

1. SOURCE OF DISCHARGE

The source of discharge is a pilot-scale gold mill employing crushing, grinding and gravity separation. The mill will be designed to initially process approximatley 100 tons per day of ore-grade material. Ore will be ball-milled to minus 100 mesh before undergoing separation on jig tables. Free gold will be removed as the heaviest fraction while middlings represent a gold concentrate (containing 60-70% of recoverable gold) and are comprised of sulphides and some silicates. This concentrate will be stored for future processing under full-scale operation. The remaining fraction is tailings material described as follows:

sulphur content	0.964%
potential acidity	30.1*
neutralization potential	34.0*
paste pH	8.1

*units - tons $CaCO_3$ equivalent per thousand tons material

A multi-element metals scan was performed on a sample of tailings solids and is attached as Table 1. Tailings supernatant was analyzed for sulphate, nitrate, nitrite, ammonia and dissolved arsenic, copper, iron, lead and zinc. Tailings slurry was also left to settle and supernatant sampled after 1 hr, 5 hrs, 24 hrs, and 5 days. Results are shown in Table 2. The broad interpretation of these results is that provincial objectives for dissolved metals and drinking water objectives (except lead*) can be met at time = 0 hr settling, suspended solids at time = 5 days; while the federal objectives for total metals can be met at between 1 and 5 hrs and suspended solids at approximately 5 days settling. A particle size analysis is attached as Table 3. No reagents will be used in the process and tailings supernatant will be recirculated from Goldpan Lake.

*The objective concentration for lead is $\leq$ 1 ug/L, the maximum acceptable concentration is 50 ug/L. The tailings decant tested 2 ug/L.

2. PROPOSED METHOD OF TREATMENT OF DISCHARGE

The tailings slurry will be discharged to Goldpan Lake which will function as a settling pond and permanent tailings deposition site. If acid generating waste rock is encountered, it too will be deposited in Goldpan Lake as an acid generation prevention strategy.

The surface area of Goldpan Lake is 9500 m^2 with an estimated volume of 60,000 m^3. The pilot mill will process 10,000 tonnes of ore, with 7% or 700 tonnes removed as gold concentrate. The total amount of tailings solids is 9300 tonnes. Assuming a density of 2.7 t/m^3, yields 3445 m^3 of tailings solids to be deposited in Goldpan Lake. Waste rock which has been identified as potentially acid-generating will also be deposited in Goldpan Lake. Current estimates, based upon seven samples tested, indicate approximately 714 m^3 of potentially acid-generating waste rock will require lake disposal. Tailings and waste rock together will occupy 4159 m^3 (or approximately 7%) of Goldpan Lake volume. Deposition will be such that beaching is avoided and all wastes remain submerged.

At a rate of discharge of 430 m^3/d, a maximum (complete mixing) retention time of 140 days (60,000 m^3/430 m^3/d) is calculated. The actual retention time cannot be estimated, but is presumed to be in excess of the 5 days which were required to achieve the 27 mg/L suspended solids

level attained during the settling tests. If monitoring results at the outlet of Goldpan Lake indicate suspended solids levels which exceed permit limits, a simple baffle system could be used to provide additional settling time.

The maximum rate of discharge from Goldpan Lake is specified as 6546 cubic metres to accomodate precipitation and runoff entering the lake.

3. RECEIVING ENVIRONMENT

The receiving environment is described in the following excerpts from correspondence from Rescan Environmental Services Ltd. to the Waste Management Branch:

> "The Catear property, at an elevation of 1520 m, drains to the southeast, emptying into the northwest corner of Brucejack Lake via Catear Creek. The difference in elevation between Goldpan Lake and Brucejack Lake is 140 meters, with an average grade of 13 percent. Goldpan Lake is fed by Ptarmigan Lake, immediately to the north, and Ptarmigan Lake is groundwater fed. Goldpan Lake discharges to Lower Goldpan Lake, a long narrow lake immediately to the southeast of Goldpan Lake. Goldpan and Lower Goldpan Lakes are joined by a narrow constriction approximately 100 m long. Lower Goldpan Lake discharges to the southeast into Catear Creek, which empties into Brucejack Lake approximately 1100 meters downstream.
>
> Flow estimates for Goldpan Lake at its discharge and Catear Creek at the discharge to Brucejack Lake were extrapolated from the Newhawk hydrology study (Ker, Priestman & Associates Ltd., 1987) using their respective catchment areas. High and low flow estimates are tabulated in Table 4 (attached).
>
> These ranges should not be misinterpreted as upper and lower bounds for monthly or annual flows. Instead they are high and low estimates spanning a range of uncertainty for the long term mean monthly or annual flows. Individual values may fall outside these ranges on occasion, but the long-term means should fall within them.
>
> Three fishery surveys were carried out for Newhawk, in late July, late August and late September; methods used were minnow traps, electroshocking, seining and gill netting. Coho were present in the Unuk River below Sulphurets Creek confluence and only dolly varden were found in the Unuk above Sulphurets Creek. No fish were found in Sulphurets Creek above the falls 1 km from the mouth.
>
> No fish were observed or collected in Brucejack Lake. Minnow traps set in July and gillnets set in August and September produced zero catch. No fish were observed on the echo sounder during a three day bathymetric survey. Brucejack Lake at 1380 m elevation is separated from lower Sulphurets Creek at 610 m elevation by three sets of impassable falls and a 4 km long section of glacier. As a result of these surveys, it has been concluded that Brucejack Lake is devoid of fish.
>
> The lakes in the area of Catear's project are small and are frozen to an unknown depth for most of the year. It has been established that Brucejack Lake is devoid of fish and thus no fish could migrate upstream from Brucejack into Goldpan Lake. The hostile climate, topography and lack of fish habitat are strong evidence that Goldpan Lake is also devoid of fish."

Based on personal observations and available information from consultants and other agencies, there are no aquatic life resources of any significance downstream of the discharge until the section of Sulphurets Creek below the falls 1 km above the confluence of Sulphurets Creek and the Unuk River. However the Newhawk Gold Mines Ltd. development camp on Brucejack Creek just below Brucejack Lake currently draws its drinking water from Brucejack Creek which flows out of Brucejack Lake and is the headwaters of Sulphurets Creek. Therefore drinking water criteria should apply at the outlet of Brucejack Lake. It is expected that the proposed

discharge will have no measurable impact at this point. It should be noted that Newhawk has applied to the relevant agencies for the use of Brucejack Lake as a tailings and acid generating waste rock disposal area.

4. PROPOSED MONITORING

The following monitoring program is proposed as a permit requirement:

LOCATION	PARAMETERS	FREQUENCY
mill production	throughput, tonnes of ore per day tailings discharge, cubic metres per day	daily
tailings decant	pH, dissolved SO_4, Al, As, Cu, Fe, Mn, Pb, Zn	monthly
outlet of Goldpan Lake	pH, TSS, acidity, alkalinity, dissolved SO_4, total and dissolved Al, As, Cu, Fe, Mn, Pb, Zn	monthly
	toxicity - 96 hr LC_{50}	once, during the last week of operation
tailings solids	acid generation potential	once during representative mill operating conditions

This monitoring program incorporates the recommendations of Environment Canada and should adequately characterize the effluent as well as its impact on the receiving environment.

5. ASSESSMENT

Tailings and supernatant analyses for TSS and dissolved metals indicate that treatment by settling in Goldpan Lake should produce an effluent of acceptable quality. The relatively benign nature of the decant, together with the dilution afforded by the receiving environment, will insure that no measurable impact will occur in the sensitive lower 1 km of Sulphurets Creek. Drinking water standards will be met at the Newhawk campsite.

J. Hofweber, P.Eng.
Waste Management Officer
Northern Region

JH/dm

TABLE 1

Chemical Characteristics of
Tailings Solids

Aluminum	Al	%	0.65
Silver	Ag	ppm	2.4
Arsenic	As	ppm	45
Barium	Ba	ppm	920
Beryllium	Be	ppm	<0.5
Bismuth	Bi	ppm	<2
Calcium	Ca	%	1.23
Cadmium	Cd	ppm	<0.5
Cobalt	Co	ppm	<1
Chromium	Cr	ppm	9
Copper	Cu	ppm	23
Iron	Fe	%	1.03
Gallium	Ga	ppm	<10
Mercury	Hg	ppm	<1
Potassium	K	%	0.32
Lanthanum	La	ppm	10
Magnesium	Mg	%	0.11
Manganese	Mn	ppm	350
Molybedenum	Mo	ppm	4
Sodium	Na	%	0.01
Nickel	Ni	ppm	2
Phosphorus	P	ppm	1090
Lead	Pb	ppm	14
Antimony	Sb	ppm	<5
Selenium	Se	ppm	10
Strontium	Sr	ppm	59
Titanium	Ti	%	<0.01
Thallium	Tl	ppm	<10
Uranium	U	ppm	<10
Vanadium	V	ppm	10
Tungsten	W	ppm	5
Zinc	Zn	ppm	29

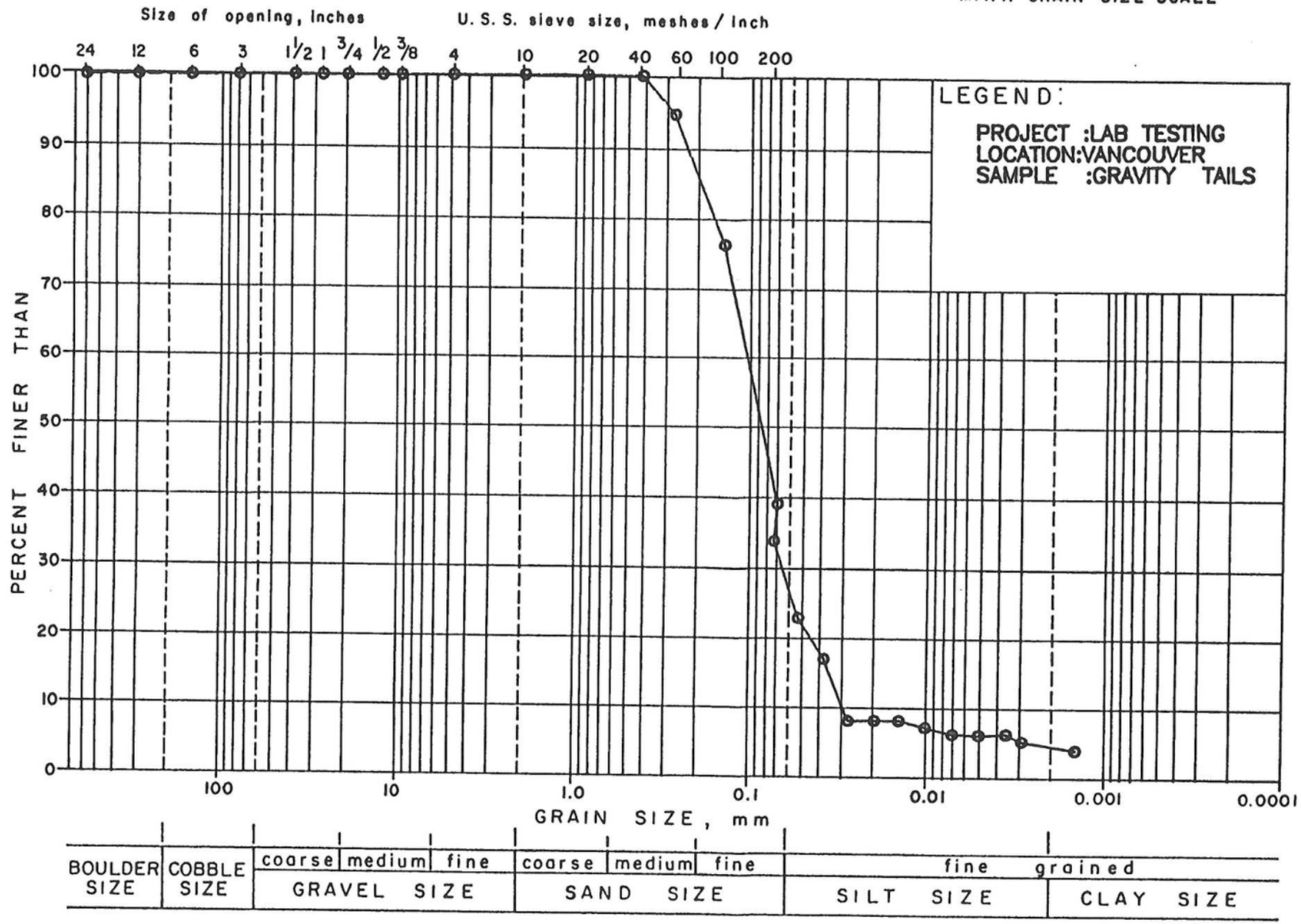
TABLE 2

Tailings Analysis After Various Settling Times

PARAMETER	AT TIME=0	SUPERNATANT AFTER SETTLING 1 hr	5 hr	24 hr	5 d	B.C. OBJECTIVE	MMLER
Sulphate (mg/L)	25						
Nitrate/nitrite (mg/L) N	0.80					10-25	
Ammonia (mg/L) N	1.600					1-10	
Total diss. P (mg/L)	0.860					2-10	
Total susp.solids (mg/L)	20900	6600	3500	450	27		25
TOTAL METALS (ug/L)							
Arsenic As		570	350	29	9		500
Copper Cu		4	6	4	4		300
Iron Fe		680	800	700	120		
Lead Pb		4	8	14	18		200
Zinc Zn		2	2	4	4		500
DISSOLVED METALS (ug/L)							
Arsenic As	4	4	5	5	5	100-1000	
Copper Cu	2	2	2	2	<2	50-300	
Iron Fe	12	14	12	18	22	300-1000	
Lead Pb	2	<2	2	2	<2	50-200	
Zinc Zn	4	2	2	4	2	200-1000	

PROJECT NO. 8821054 DRAWN REVIEWED DATE

M.I.T. GRAIN SIZE SCALE



GRAIN SIZE DISTRIBUTION

TABLE 3

Table 4

Mean Monthly Flow Estimates (m^3/s)

Month	GOLDPAN LAKE AT OUTLET		CATEAR CREEK AT MOUTH	
	Low	High	Low	High
Jan	0.0	.001	0.0	.020
Feb	0.0	.001	0.0	.017
Mar	0.0	.001	0.0	.017
Apr	0.0	.003	.006	.042
May	.006	.017	.084	.22
Jun	.025	.038	.34	.50
Jul	.036	.067	.48	.90
Aug	.034	.063	.45	.84
Sept	.020	.032	.27	.42
Oct	.011	.021	.14	.28
Nov	.002	.008	.028	.11
Dec	0.0	.003	.006	.042

BC COMPANY

NAME: CATEAR RESOURCES LTD.

INCORPORATION NO: C -0278473 INCORPORATION DATE: 15 JAN., 1982
PREVIOUS NUMBER : A19281 CONTINUATION DATE: 25 MAY, 1984
PREV JURSDICTION: ALBERTA

LAST ANNUAL REPORT DATE: 25 MAY, 1987 NBR OF PRINCIPALS: 4

IN LIQ: NO RECEIVER: NO REPORTING: YES ENCUMBRANCES: YES

REGISTERED OFFICE: 3000 - 595 BURRARD ST.
BOX 49052
VANCOUVER, B.C.
V7X 1R3

Search Print Required?
M: R T: SE SE73 - PRESS ENTER FOR MORE INFORMATION
C /0278473
Date: 88/02/22 Company Search Time: 11:03:16

RECORDS OFFICE: 3000 - 595 BURRARD ST.
BOX 49052
VANCOUVER, B.C.
V7X 1R3

DIRECTOR: Y OFFICER: Y
DIR/OFF NAME: EDWARD RICHARD KRUCHKOWSKI
POSITION: PRESIDENT
ADDRESS: 23 TEMPLESIDE BAY N.E.
CALGARY, ALBERTA
T1Y 3L6

DIRECTOR: Y OFFICER: N
DIR/OFF NAME: DEREK COAKWELL MARTIN
POSITION:
ADDRESS: 2200 - 736 - 6TH AVENUE S.W.
CALGARY, ALBERTA
T2P 3W1

Search Print Required?
M: R T: SE SE73 - PRESS ENTER FOR MORE INFORMATION
C /0278473
Date: 88/02/22 Company Search Time: 11:03:32

Sent From: MINI RY OF ENVIRONMENT & PARKS
FAXCOM NO. 847-7591
Smithers, B.C.

Addressee's Faxcom # 687 4277 Date: 88/07/05

ADDRESSEE'S NAME: JENNIFER GREGORY

MINISTRY/PROGRAM: RESCAN ENVIRONMENTAL SERVICES

CITY: VAN.

Please call addressee when received at: 689-9460

No. of pages: 11

SENDER'S NAME: J. HOFWEBER

MINISTRY/PROGRAM: WMB

CITY: SMITHERS

Telephone # : 847-7551

Message: Permit draft
Please review & comment.

Province of British Columbia

MEMORANDUM

To:

Ministry of Environment
Waste Management Branch
Bag 5000
Smithers, B. C.
V0J 2N0

Date: June 13/88

ATTENTION: JIM HOFWEBER

RE: APPLICATION BY CATEAR RESOURCES LTD.
Dated November 25, 1987
Your File: AE - 7980

Thank you for sending me the results of the tailings testwork for the effluent discharge to Goldpan Lake by Catear Resources.

As you noted in your memo of June 7, 1988, the tailings decant meets the B. C. Drinking Water Quality Standards and therefore should not adversely affect the Newhawk Gold Mines drinking water supply.

We no longer object to this discharge provided the quality of the effluent is monitored to ensure that the Newhawk drinking water remains safe.

Yours truly,

Saskia van Beynum

Saskia van Beynum, C.P.H.I.(C)
Public Health Inspector
Skeena Health Unit #16

SvB/ph

(OP 3310)

Province of British Columbia

MEMORANDUM

TO: SASKIA VAN BEYNUM
SKEENA HEALTH UNIT
3412 KALUM ST
TERRACE, B.C. V8G 4X2

FROM: J. HOFWEBER
WASTE MGT BR.
SMITHERS

SUBJECT: CATEAR RES

DATE: 88/06/07

FILE: AE 7480

- [x] For Your Information
- [ ] Please Process
- [ ] Please O.K. and Return
- [ ] Return With More Details
- [ ] Please Discuss With Me
- [ ] Investigate and Report
- [ ] Per Your Request
- [ ] Please Answer
- [ ] For Your Signature
- [ ] For Your File

Fold Here for Window Envelope

Saskia,

Attached please find the info on Catear's effluent loading. Please note that tailings decant meets Canadian Drinking Water Guidelines max acceptable conc. for the elements tested.

Regards, Jim

PS Please respond re: your objection & their permit appl.

Fold Here for Window Envelope

REPLY:

FILE COPY FOR YOUR RECORD OF THE INQUIRY AND REPLY (QP 4035) ISLAND BUSINESS FORMS LTD.

Environment Canada | Environnement Canada
Conservation and Protection | Conservation et Protection

Environmental Protection
3rd Floor, Kapilano 100, Park Royal
West Vancouver, British Columbia V7T 1A2

Your file / Votre référence
AE-7980

Our file / Notre référence
4484-37/C235

J. H.

May 4, 1988

Mr. T. Roberts
Head, Industrial Section
Waste Management Branch
Northern Region
Ministry of Environment & Parks
Bag 5000
Smithers, B.C.
V0J 2N0

Dear Mr. Roberts:

Re: Application pursuant to the Waste Management Act
on behalf of Catear Resources Ltd.
dated November 25, 1987

We have reviewed the additional information in support of the subject permit application submitted by Rescan Environmental Services Ltd. on behalf of Catear Resources Ltd. in letters to your office dated March 17, 1988, March 19, 1988, and April 12, 1988.

Federal agency information requirements for this application have now been met and we would support the granting of a permit for Catear's proposed 10,000 tonne pilot operation, with conditions and monitoring requirements as recommended in our letters to you dated January 21, 1988 and February 18, 1988.

The results of acid generation potential testwork on a sample of gravity tailings solids from a bulk metallurgical test (3-1000 lb. bulk samples) indicate the tailings are marginally acid consuming. We suggest that actual tailings from Catear's pilot mill also be sampled for percent sulphur, neutralization potential, and paste pH analysis to corroborate this finding and to provide useful data for inclusion in possible future submissions.

Non-acid generating volcanic wall rock is estimated to represent approximately 85 per cent of the waste rock to be produced, while an estimated 15 per cent of waste rock is expected to be acid

.../2

Canada

generating sericite schist. Given that the majority of waste rock is now predicted to be non-acid generating, it may not be necessary to dispose all of this material in Goldpan Lake. Provided the company can assure that careful rock characterization and handling procedures will be implemented to ensure segregation of potentially acid generating waste rock, the non-acid generating material could be stored on land or used to construct a ramp to transport the potentially acid generating rock for disposal in deep water.

Your continued cooperation in this matter is appreciated. For further discussion, Ms. Lisa Cox may be contacted at 666-3487.

Yours truly,

M. Ito, P.Eng.
Chief, Environmental Protection Branch

cc: O. Langer, DFO, New Westminster
A. Von Finster, DFO, Whitehorse
V. Bartnik, IW/L, Vancouver
E. Kruchkowski, Catear Resources Ltd.
J. Gregory, Rescan Environmental Services Ltd.

Rescan Environmental
Services Ltd.

Refer to File no.

Suite 510 Coopers & Lybrand Building
1111 West Hastings Street
Vancouver, B.C. V6E 2J3
Tel: (604) 689-9460
Fax: (604) 687-4277

April 12, 1988

AE 7980 TR FM

Ministry of Environment
Waste Management Branch
3726 Alfred Avenue
Bag 5000
Smithers, B.C.
V0J 2N0

Attention: **Jim Hofweber, P.Eng.**
Waste Management Officer

Dear Sir,

Re: Catear Resources' Proposed 10,000 tonne Pilot Operation
Application for a Permit Authorizing an Effluent Discharge

As per our letter dated March 17, 1988, enclosed are the final results of the tailings testwork conducted under Rescan's supervision in order to fulfill requirements for permit approval for Catear's 10,000 tonne pilot operation. A metallurgical test was run in February 1988 at Nesmont Labs with three 1000-lb bulk samples. The tailings sample was taken from the gravity circuit of this recent metallurgical test.

The results presented here include the following:

- -pH and percent solids of the tailings slurry,
- -acid generation potential tests and metals analysis on the tailings solids, and
- -analysis for suspended solids and metals on the tailings sample after various settling times.

Results

The pH and percent solids content of the slurry are reported below:

pH = 7.8
percent solids = 11.8%

Acid/base accounting conducted on the gravity tailings solids showed them to be marginally acid-consuming.

Sulphur content =	0.964 %
Maximum Potential Acidity =	30.1*
Neutralization Potential =	34.0*
Paste pH =	8.1

* Units = tons $CaCO_3$ equivalent per thousand tons material

Generation of acidity from Catear tailings would be precluded by the discharge into Goldpan Lake.

A thirty-two element metals scan was performed on the tailings solids (Table 1). Metals were analyzed by the ICP method. The chemical characteristics of the tailings solids reflect the removal of sulphide middlings in the gravity separation circuit. The sulphides will be stored for future processing. None of the elements in the tailings solids were at levels of concern.

The tailings supernatant was analyzed for sulphate, nitrate/nitrite, ammonia and dissolved metals: arsenic, copper, iron, lead and zinc. In addition, the slurry was left to settle and aliquots removed after 1 hr, 5 hr, 24 hr and 5 days. The aliquots were analyzed for total suspended solids and total and dissolved metals: arsenic, copper, iron, lead and zinc. Results are reported in Table 2, with the B.C. Pollution Control Objectives and the Federal Metal Mining Liquid Effluent Regulations (MMLER) also presented for comparison.

The B.C Objectives were met for all parameters analyzed in the tailings slurry (time = 0). After five days of settling, all parameters except suspended solids met the federal MMLER. The suspended solids level decreased from an initial concentration of 20,900 mg/L to 27 mg/L after five days of settling. However, it is expected that the MMLER of 25 mg/L for suspended solids will be enforced at the outlet of the lake, at which point the discharged effluent will have been greatly diluted with surface runoff.

With a total lake volume of approximately 60,000 m^3 and a tailings discharge of roughly 500 m^3 per day, a retention time of 120 days is estimated. The true

retention time of the lake cannot be accurately determined from the present data, but it is conservative to assume that the retention time will be considerably longer than five days. It follows that the Regulation of 25 mg/L for suspended solids at the outlet of the lake should be met without difficulty. The downstream effect of the tailings deposition into Goldpan Lake will be negligible, as reflected in the results of the metals analysis and suspended solids analysis after settling.

These testwork results complete what Rescan understands to be the final requirements for permit approval of tailings discharge into Goldpan Lake. I would like to emphasize once more the tight schedule that Catear is presently under and ask that you attend to the final processing of this permit as soon as possible. If further discussion pertaining to the tailings testwork results is required or any additional information for the final processing of the permit is outstanding, please contact me at the above number.

Yours very truly,

RESCAN ENVIRONMENTAL SERVICES LTD.
per:

Jennifer Gregory
Environmental Engineer
Encl.

cc: Peri Mehling, Environment Canada
Ed Kruchkowski, Catear Resources Ltd.

TABLE 2

Tailings Analysis After Various Settling Times

PARAMETER	AT TIME=0	SUPERNATANT AFTER SETTLING 1 hr	5 hr	24 hr	5 d	B.C. OBJECTIVE	MMLER Max. single grab	MMLER Max. mo. mean
Sulphate (mg/L)	25					10-25		
Nitrate/nitrite (mg/L) N	0.80					1-10		
Ammonia (mg/L) N	1.600					2-10		
Total diss. P (mg/L)	0.860							
Total susp.solids (mg/L)	20900	6600	3500	450	27		50	25
TOTAL METALS (ug/L)								
Arsenic As		570	350	29	9		1000	500
Copper Cu		4	6	4	4		600	300
Iron Fe		680	800	700	120			
Lead Pb		4	8	14	18		400	200
Zinc Zn		2	2	4	4		1000	500
DISSOLVED METALS (ug/L)								
Arsenic As	4	4	5	5	5	100-1000		
Copper Cu	2	2	2	2	<2	50-300		
Iron Fe	12	14	12	18	22	300-1000		
Lead Pb	2	<2	2	2	<2	50-200		
Zinc Zn	4	2	2	4	2	200-1000		

TABLE 1

Chemical Characteristics of
Tailings Solids

Aluminum	Al	%	0.65
Silver	Ag	ppm	2.4
Arsenic	As	ppm	45
Barium	Ba	ppm	920
Beryllium	Be	ppm	<0.5
Bismuth	Bi	ppm	<2
Calcium	Ca	%	1.23
Cadmium	Cd	ppm	<0.5
Cobalt	Co	ppm	<1
Chromium	Cr	ppm	9
Copper	Cu	ppm	23
Iron	Fe	%	1.03
Gallium	Ga	ppm	<10
Mercury	Hg	ppm	<1
Potassium	K	%	0.32
Lanthanum	La	ppm	10
Magnesium	Mg	%	0.11
Manganese	Mn	ppm	350
Molybedenum	Mo	ppm	4
Sodium	Na	%	0.01
Nickel	Ni	ppm	2
Phosphorus	P	ppm	1090
Lead	Pb	ppm	14
Antimony	Sb	ppm	<5
Selenium	Se	ppm	10
Strontium	Sr	ppm	59
Titanium	Ti	%	<0.01
Thallium	Tl	ppm	<10
Uranium	U	ppm	<10
Vanadium	V	ppm	10
Tungsten	W	ppm	5
Zinc	Zn	ppm	29

TABLE 2

Tailings Analysis After Various Settling Times

PARAMETER	AT TIME=0	SUPERNATANT AFTER SETTLING 1 hr	5 hr	24 hr	5 d	B.C. OBJECTIVE	MMLER
Sulphate (mg/L)	25						
Nitrate/nitrite (mg/L) N	0.80					10-25	
Ammonia (mg/L) N	1.600					1-10	
Total diss. P (mg/L)	0.860					2-10	
Total susp.solids (mg/L)	20900	6600	3500	450	27		25
TOTAL METALS (ug/L)							
Arsenic As		570	350	29	9		500
Copper Cu		4	6	4	4		300
Iron Fe		680	800	700	120		
Lead Pb		4	8	14	18		200
Zinc Zn		2	2	4	4		500
DISSOLVED METALS (ug/L)							
Arsenic As	4	4	5	5	5	100-1000	
Copper Cu	2	2	2	2	<2	50-300	
Iron Fe	12	14	12	18	22	300-1000	
Lead Pb	2	<2	2	2	<2	50-200	
Zinc Zn	4	2	2	4	2	200-1000	

Catear Resources Ltd.
Suite 400, 255 - 17th Avenue S.W.
Calgary, Alberta, Canada T2S 2T8
Phone: (403) 228-6761
Fax: (403) 229-3207

IR BW
75,302
AE 798

MINISTRY OF ENERGY, MINES and PETROLEUM RESOURCES
Rec'd MAR 22 1988
SMITHERS, B.C.

March 15, 1988

MINISTRY OF ENVIRONMENT
MAR 24 1988

Ministry of Energy, Mines &
Petroleum Resources
Bag 5000
Smithers, B.C.
V0J 2N0

Attention: Doug Flynn

Dear Mr. Flynn:

In response to your letter requesting an update on the production schedule for the Catear Goldwedge property for 1988, I have prepared the following synopsis for you.

Goldwedge Milestones for 1988

1. Complete construction of mill and crusher facility for 10,000 ton bulk test. (The gravity separation section) By April 15, 1988.

2. Mine and Mill 10,000 ton bulk sample (at 100 tpd). By July 30, 1988.

3. Start work on obtaining Stage 1 approval from government. By April 15, 1988.

4. Complete construction of mill to include the flotation. By July 15, 1988.

5. After approval is received start mining and milling at 250 tons per day. By July 30, 1988.

Yours truly,

CATEAR RESOURCES LTD.

R. Rasku, P.Eng.
Project Manager

RR/lmh

DWF

FACSIMILE MESSAGE

Rescan
RESCAN GROUP LIMITED
Suite 510 - 1111 West Hastings Street
Vancouver, B.C. Canada V6E 2J3
Phone (604) 689-9460
Fax (604) 687-4277
Telex 04-508563

DATE Mar. 18/88 TIME 11:30 OPERATOR

TO WMB LOCATION Smithers

ATTENTION Jim Hofweber

FROM Jennifer Gregory LOCATION

COPY TO LOCATION

ATTENTION

SUBJECT

TOTAL NUMBER OF PAGES INCLUDING THIS TITLE PAGE

MESSAGE

Jim,

For your review + comment.

Please call me.

Jennifer

March 17, 1988

DRAFT

Environment Canada
Conservation and Protection
Environmental Protection Branch
Kapilano 100, Park Royal, Third Floor
West Vancouver, B.C.
V7T 1A2

Attention: **M. Ito, P.Eng.**
Chief, Environmental Protection Branch
Pacific and Yukon Region

Dear Sir,

Re: Application pursuant to the Waste Management Act on behalf of Catear Resources Ltd. dated November 25, 1987.

Further to your letter to Mr. T. Roberts of Waste Management Branch in Smithers dated February 18, 1988, we would like to respond to the position you have taken with regards to the compliance point for the Metal Mining Liquid Effluent Regulations (MMLER).

Tailings from a 10,000 tonne bulk sample will discharge to Upper Goldpan Lake. The outflow of Upper Goldpan Lake enters a small constriction separating it from Lower Goldpan Lake. During the meeting held February 3, 1988 at our offices, there was some discussion as to where the compliance point should be, either at the discharge of Upper Goldpan Lake or at the discharge of Lower Goldpan Lake. The recommendation of the Regional Manager in Smithers is to have the compliance point at the discharge of Lower Goldpan Lake.

We feel that your suggestions of provision of control structures, tailings pretreatment and other effluent control measures are unreasonable for a project of this size and in this particular setting. We also believe that the requirement to meet the MMLER at the outlet of Upper Goldpan Lake is unreasonable considering the abscence of environmental sensitivities. However, in the interest of resolving the issue quickly, Catear has agreed to the Upper Goldpan Lake compliance point, but wishes to register its protest.

We trust that Catear's position in this matter is clarified. Please contact me if at the above number if you have any questions or comments.

Yours very truly,

RESCAN ENVIRONMENTAL SERVICES LTD.
per:

Jennifer C. Gregory
Environmental Engineer

cc: Ed Kruchkowski, Catear Resources Ltd.
Jim Hofweber, Waste Management Branch, Smithers

Rescan Environmental
Services Ltd.

e 510 Coopers & Lybrand Building
1111 West Hastings Street
Vancouver, B.C. V6E 2J3
Tel: (604) 689-9460
Fax: (604) 687-4277

March 19, 1988
Refer to File No

Ministry of Environment
Waste Management Branch
3726 Alfred Avenue
Bag 5000
Smithers, B.C.
V0J 2N0

Attention: **Jim Hofweber, P.Eng.**
Waste Management Officer

Dear Sir,

Re: Catear Resources' Proposed 10,000 tonne Pilot Operation
Application for a Permit Authorizing an Effluent Discharge

As outlined in our letter of March 17, 1988, testwork on tailings from Catear's metallurgical samples is presently being conducted. Enclosed are the following results of the tailings and acid generation testwork:

-Particle size analysis of tailings
-Acid generation potential testwork on waste rock samples
-Description of location of previous waste rock samples (sericite schist) taken for acid generation tests.

The recent waste rock samples were taken by Catear from various locations along the walls of the decline; these samples represent approximately 85% of the waste rock that will be produced from the pilot operation. All four samples are non-acid-producing, with three of the four quite strongly acid-consuming. The remaining 15% of the waste rock will be sericite schist; samples of this material were taken and tested previously (Chemex certificate A8725910) and a description of their locations is enclosed from Catear (letter to Rescan dated Feb. 16, 1988).

If you have any questions regarding these results, please contact me at the above number. Further testwork results will be forwarded to you as they become available.

Yours very truly,

RESCAN ENVIRONMENTAL SERVICES LTD.
per:

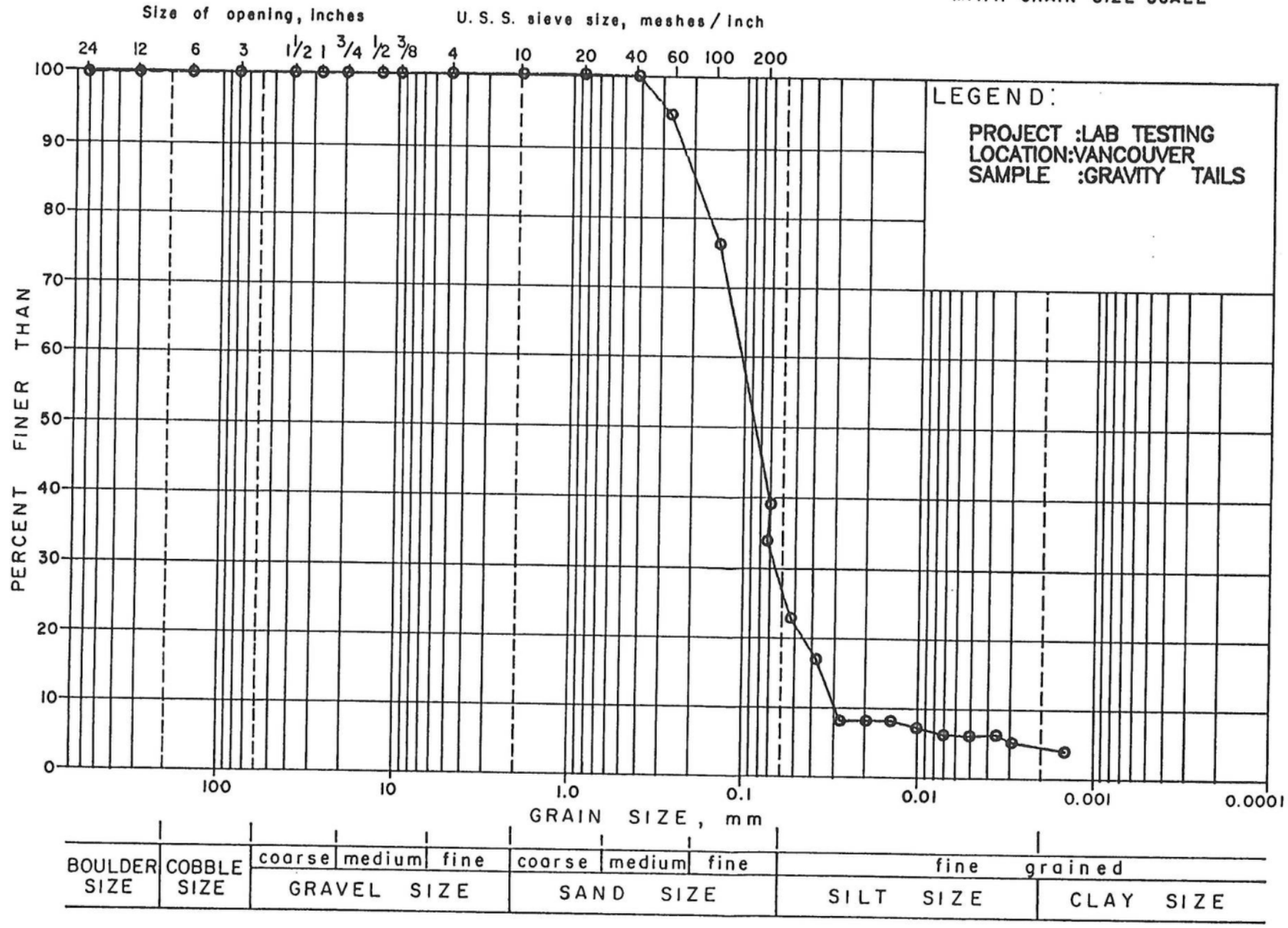
Jennifer C. Gregory
Environmental Engineer

Encl.

cc: Lisa Cox, Environment Canada
Ed Kruchkowski, Catear Resources Ltd.

PROJECT NO. 8821054 DRAWN REVIEWED DATE

M.I.T. GRAIN SIZE SCALE



GRAIN SIZE DISTRIBUTION

GRAINSIZE ANALYSIS

Project#: 8821054
Client : RESCAN
Project : LAB TESTING
Location: VANCOUVER

Borehole:
Sample : GRAVITY TAILS
DATE : MARCH 3/88

1st SIEVE :
Wt before sieve = 50.0
2nd SIEVE :
Wt before sieve = 50.0

HYDROMETER :
Weight = 50.00
Gs = 2.71

Size	Wt Ret (gms)	% Ret	% Ret Total	Diameter (mm)	% Pass
3"	0.0	0.0	0.0	76.20	100.0
1 1/2"	0.0	0.0	0.0	38.10	100.0
1"	0.0	0.0	0.0	25.40	100.0
3/4"	0.0	0.0	0.0	19.10	100.0
1/2"	0.0	0.0	0.0	12.70	100.0
3/8"	0.0	0.0	0.0	9.52	100.0
#4	0.0	0.0	0.0	4.76	100.0
#10		0.0	0.0	2.00	100.0
#20		0.0	0.0	0.840	100.0
#40	0.1	0.2	0.2	0.420	99.8
#60	2.7	5.3	5.3	0.250	94.5
#100	9.3	18.5	18.5	0.149	76.0
#200	18.5	36.9	36.9	0.074	39.1
Pan	19.5	39.0	39.0		

HYDROMETER ANALYSIS

Elapsed Time	Hydro Read	Temp (C)	Corr	Hydro Corr	Diam (mm)	% Pass
0.5	21.0	19.5	-3.8	17.2	0.0809	33.9
1	15.5	19.5	-3.8	11.7	0.0592	23.0
2	12.5	19.5	-3.8	8.7	0.0426	17.1
4	8.0	19.5	-3.8	4.2	0.0309	8.2
8	8.0	19.5	-3.8	4.2	0.0219	8.2
15	8.0	19.5	-3.8	4.2	0.0160	8.2
30	7.5	19.5	-3.8	3.7	0.0113	7.2
60	7.0	19.5	-3.8	3.2	0.0080	6.2
120	7.0	18.9	-3.9	3.1	0.0057	6.1
240	7.0	19.4	-3.9	3.1	0.0040	6.2
360	6.5	19.2	-3.9	2.6	0.0033	5.2
1440	6.0	18.0	-4.0	2.0	0.0017	3.9

Chemex Labs Ltd.

Analytical Chemists * Geochemists * Registered Assayers
212 BROOKSBANK AVE , NORTH VANCOUVER,
BRITISH COLUMBIA, CANADA V7J-2C1
PHONE (604) 984-0221

To : CATEAR RESOURCES LTD.

400 - 255 17TH AVE. S.W.
CALGARY, ALBERTA
T2S 2T8

Project :
Comments: ATTN: EDWARD R KRUCHOWSKI

**Page No. : 1
Tot. Pages: 1
Date : 6-MAR-88
Invoice # : I-8812330
P.O. # : NONE

CERTIFICATE OF ANALYSIS A8812330

SAMPLE DESCRIPTION	PREP CODE		S % (Leco)	MAX POT ACID **	Neutral Poten**	PASTE pH						
SAMPLE A	208	--	1.550	48.4	244.00	8.3	NON					
SAMPLE B	208	--	0.071	2.2	85.00	8.1	NON					
SAMPLE C	208	--	2.45	76.6	98.00	8.4	NON					
SAMPLE D	208	--	0.407	12.7	148.00	8.2	NON					

WASTE ROCK A/G TEST

- these samples are representative of 85% of the total waste rock.
(other 15% ≡ serecite schist)
↳ (previous a/g tests)

ALL ASSAY DETERMINATIONS ARE PERFORMED OR SUPERVISED BY B.C. CERTIFIED ASSAYERS

CERTIFICATION : [signature]

Chemex Labs Ltd.
Analytical Chemists * Geochemists * Registered Assayers
212 BROOKSBANK AVE., NORTH VANCOUVER,
BRITISH COLUMBIA, CANADA V7J-2C1
PHONE (604) 984-0221

To: CATEAR RESOURCES LTD.
400 - 255 17TH AVE. S.W.
CALGARY, ALBERTA
T2S 2T8

RECEIVED MAR 1 4 1988

A8812330

Comments: ATTN: EDWARD R. KRUCHOWSKI

CERTIFICATE A8812330

CATEAR RESOURCES LTD.
PROJECT :
P O # : NONE

Samples submitted to our lab in Vancouver, BC.
This report was printed on 6-MAR-88.

SAMPLE PREPARATION

CHEMEX CODE	NUMBER SAMPLES	DESCRIPTION
208	4	Assay: Crush, split, ring -140

* NOTE 1:

The 32 element ICP package is suitable for trace metals in soil and rock samples. Elements for which the nitric-aqua regia digestion is possibly incomplete are: Al, Ba, Be, Ca, Cr, Ga, K, La, Mg, Na, Sr, Ti, Tl, W.

ANALYTICAL PROCEDURES

CHEMEX CODE	NUMBER SAMPLES	DESCRIPTION	METHOD	DETECTION LIMIT	UPPER LIMIT
380	4	S %: Leco induction furnace	LECO-IR DETECTOR	0.001	100.0
1117	4	Maximum potential acidity	CALCULATION	0.0	N/A
1118	4	Neutralization potential	TITRATION	N/A	N/
1119	4	Paste pH	POTENTIOMETER	N/A	N/A

WASTE ROCK - acid generation test

Rescan Environmental
Services Ltd.

Refer to File no

Suite 510 Coopers & Lybrand Building
1111 West Hastings Street
Vancouver, B.C. V6E 2J3
Tel: (604) 689-9460
Fax: (604) 687-4277

March 17, 1988

Ministry of Environment
Waste Management Branch
3726 Alfred Avenue
Bag 5000
Smithers, B.C.
V0J 2N0

Attention: **Jim Hofweber, P.Eng.**
Waste Management Officer

Dear Sir,

Re: Catear Resources' Proposed 10,000 tonne Pilot Operation
Application for a Permit Authorizing an Effluent Discharge

Thank you for having your representative Frazer Mckenzie attend the meeting of February 3 in our offices to discuss permit approval requirements for Catear's proposed pilot operation. Further to this meeting, as promised, are our comments on the concerns of your department and of Environment Canada, regarding the permit approval for discharge of tailings into Goldpan Lake for a 10,000 tonne pilot milling operation.

This letter discusses what we understand to be the relevant issues involved in the project and gives further information as requested by your office and Environment Canada for permit approval. The four issues discussed are:

1. assurance that the pilot plant tailings and waste rock can be fully accommodated in Goldpan Lake;
2. a description of the flow regime in the area of Goldpan Lake to predict the downstream effects of the tailings disposal;
3. a rationale to support the belief that there are no fish in Goldpan Lake; and

4. a discussion of the testwork to characterize the tailings.

A map of the project area is enclosed.

1. Capacity of Goldpan Lake

The surface area of Goldpan Lake is 9500 m^2, as measured from the 1:2000 topographic map. In the Tailings Disposal Plans report by Piteau Engineering on the Goldwedge Property (Piteau Engineering Ltd., 1987), the volume of Goldpan Lake was estimated as 60,000 m^3. Using the surface area measured, this volume allows for an average depth in the lake of 6 meters - a figure which Catear suggests is too low. Nevertheless, in the absence of more precise information, it is therefore assumed that the volume of 60,000 m^3 is the best estimate for the volume of the lake. Goldpan Lake is covered with ice and snow for a major portion of the year, opening up from approximately late June to November.

The pilot mill will process 10,000 t of ore, with 7% or 700 t removed as gold concentrate. The total amount of tailings solids is then 9300 t. Assuming 20% solids by weight, this results in 3400 m^3 of solids and 37200 m^3 of liquids for a total tailings volume of 40,600 m^3. The supernatant will be recycled back to the mill, therefore, the lake will need to accommodate a total of 3400 m^3 of tailings solids from the pilot operation. Waste rock will be produced from construction of a 10'x14' decline a total of 1200 feet to reach the mineralized area. At a density of 2.7 tonne/m^3, a total of 4760 m^3 or 12,900 t of waste rock will be produced. Thus the total amount of tailings and waste rock to be deposited into the lake is 8200 m^3, occupying approximately 14 percent of the total volume of the lake. There is no doubt that Goldpan Lake can easily accommodate all of the waste produced from the pilot operation. The waste rock and tailings will be deposited in the lake at locations that will ensure that they will be covered by water on a continuous basis.

per 10,000 t of production

2. Description of Flow Regime in the Property Area

The Catear property, at an elevation of 1520 m, drains to the southeast, emptying into the northwest corner of Brucejack Lake via Catear Creek. The difference in elevation between Goldpan Lake and Brucejack Lake is 140 meters, with an average grade of 13 percent. Goldpan Lake is fed by Ptarmigan Lake, immediately to the north, and Ptarmigan Lake is groundwater fed. Goldpan Lake discharges to Lower Goldpan Lake, a long narrow lake immediately to the southeast of Goldpan

may ask that they compile following uncontaminated the O

Lake. Goldpan and Lower Goldpan Lakes are joined by a narrow constriction approximately 100 m long. Lower Goldpan Lake discharges to the southeast into Catear Creek, which empties into Brucejack Lake approximately 1100 meters downstream.

Flow estimates for Goldpan Lake at its discharge and Catear Creek at the discharge to Brucejack Lake were extrapolated from the Newhawk hydrology study (Ker, Priestman & Associates Ltd., 1987) using their respective catchment areas. High and low flow estimates are tabulated in Table 1 (attached).

These ranges should not be misinterpreted as upper and lower bounds for monthly or annual flows. Instead they are high and low estimates spanning a range of uncertainty for the long term mean monthly or annual flows. Individual values may fall outside these ranges on occasion, but the long-term means should fall within them.

3. Rationale for Lack of Fish in Goldpan Lake

Three fishery surveys were carried out for Newhawk, in late July, late August and late September; methods used were minnow traps, electroshocking, seining and gill netting. Coho were present in the Unuk River below Sulphurets Creek confluence and only dolly varden were found in the Unuk above Sulphurets Creek. No fish were found in Sulphurets Creek above the falls 1 km from the mouth.

No fish were observed or collected in Brucejack Lake. Minnow traps set in July and gill nets set in August and September produced zero catch. No fish were observed on the echo sounder during a three day bathymetric survey. Brucejack Lake at 1380 m elevation is separated from lower Sulphurets Creek at 610 m elevation by three sets of impassable falls and a 4 km long section of glacier. As a result of these surveys, it has been concluded that Brucejack Lake is devoid of fish.

The lakes in the area of Catear's project are small and are frozen to an unknown depth for most of the year. It has been established that Brucejack Lake is devoid of fish and thus no fish could migrate upstream from Brucejack into Goldpan Lake. The hostile climate, topography and lack of fish habitat are strong evidence that Goldpan Lake is also devoid of fish.

4. Tailings Characterization Testwork

In response to the information requested during the meeting of February 3, a metallurgical test was carried out at the end of February. A bulk sample of representative ore was delivered to Nesmont Labs and three 1000 lb test samples were run through the gravity circuit proposed for the pilot operation. Tailings were collected and are presently being analyzed as follows:

SLURRY: -Percent solids
-pH

SOLIDS: -Metals analysis
-Particle size analysis
-Acid generation potential

SUPERNATANT: -total and dissolved metals: Cu, Fe, Pb, Zn, As
-sulphate, nitrate/nitrite, ammonia, total dissolved P
-metals analysis and suspended solids after various settling times

The tailings testwork will be completed as soon as possible and results will be forwarded as they are received.

We are sure that you understand the tight schedule Catear is under, and would appreciate the rapid processing of the permit approval. If there is any further information you need or concerns you would like to discuss, please do not hesitate to call me.

Yours very truly,

RESCAN ENVIRONMENTAL SERVICES LTD.
per:

Jennifer Gregory

Jennifer Gregory
Environmental Engineer

Encl.

References

Ker, Priestman & Associates Ltd. *Sulphurets Joint Venture - Climate and Hydrology for the Stage I Submission.* September, 1987.

Piteau Engineering Ltd. *Report to Catear Resources Ltd. on Goldwedge Mine - Tailings Disposal Plans.* October, 1987.

cc: Lisa Cox, Environment Canada
Ed Kruchkowski, Catear Resources Ltd.

Table 1

Mean Monthly Flow Estimates (m^3/s)

Month	GOLDPAN LAKE AT OUTLET Low	GOLDPAN LAKE AT OUTLET High	CATEAR CREEK AT MOUTH Low	CATEAR CREEK AT MOUTH High
Jan	0.0	.001	0.0	.020
Feb	0.0	.001	0.0	.017
Mar	0.0	.001	0.0	.017
Apr	0.0	.003	.006	.042
May	.006	.017	.084	.22
Jun	.025	.038	.34	.50
Jul	.036	.067	.48	.90
Aug	.034	.063	.45	.84
Sept	.020	.032	.27	.42
Oct	.011	.021	.14	.28
Nov	.002	.008	.028	.11
Dec	0.0	.003	.006	.042

Environment Canada | Environnement Canada
Conservation and Protection | Conservation et Protection
Environmental Protection

Kapilano 100, Park Royal, Third Floor
West Vancouver, BC V7T 1A2

Your file / Votre référence
AE-7980
Our file / Notre référence
4484-37/C235

February 18, 1988

Mr. T. Roberts
Head, Industrial Section
Waste Management Branch
Northern Region
Ministry of Environment and Parks
Bag 5000
SMITHERS, BC
V0J 2N0

Dear Mr. Roberts:

Re: Application pursuant to the Waste Management Act
on behalf of Catear Resources Ltd.
dated November 25, 1987

Further to our letter to you dated January 21, 1988 regarding the subject application, we have additional comments in response to new information provided by the applicant at a meeting held February 3, 1988 at Rescan Environmental Services Ltd. in Vancouver.

The application states that effluent resulting from the processing of a 10 000-tonne bulk sample will discharge to Goldpan Lake and thence to Catear Creek. It is now apparent that the outflow from Goldpan Lake enters a small stream which flows into an unnamed lake which then discharges to Catear Creek. Pursuant to the federal Metal Mining Liquid Effluent Regulations, we require that the discharge from Goldpan Lake to the small stream feeding the unnamed lake meet the effluent quality criteria stated in the Regulations.

To ensure compliance with the Regulations, Goldpan Lake must function as an effective sedimentation basin. This may require construction of an outlet control structure, diversion of upstream drainages, pretreatment of tailings, or other effluent control measures. The tailings outfall should be located to optimize sediment removal and retention within the Lake.

The outlet of Goldpan Lake should be sampled monthly for pH, alkalinity/acidity, sulfate, total and dissolved metals (As, Cu, Fe, Pb, Zn) and suspended solids. Monthly lake discharge sampling should commence immediately, and extend until one month after mill

. . 2

Canada

shutdown. The sampling program should continue on a quarterly basis for one year thereafter. Arsenic should be added to the suit of metals to be analyzed in the mill tailings effluent.
In addition, we recommend a requirement for a receiving water monitoring program at the outlet of the second lake. Sampling frequencies and parameters should be the same as for the discharge from Goldpan Lake. Other conditions and recommendations outlined in our January 21st letter concerning pre-permitting information requirements, permit criteria, and monitoring schedules remain unchanged.

The pilot mill operation will provide a valuable opportunity for the Company to collect data in support of a possible Stage I submission. Accordingly, the Company may wish to consider extending the monitoring program to include the types of environmental studies that would be required should the project proceed to full-scale development.

We trust the above clarifies our position. Ms. L. Cox may be contacted at 666-3487 for further discussion.

Thank you for your continued cooperation in this matter.

Yours truly,

M. Ito, P.Eng.
Chief, Environmental Protection Branch
Pacific and Yukon Region

cc: D. Rowse - DFO, Prince Rupert
O. Langer - DFO, New Westminster
A. Von Finster - DFO, Whitehorse
W. Knapp - DFO, Vancouver
V. Bartnik - IW/L, Vancouver
E. Kruchkowski - Catear Resources Ltd.
J. Gregory - Rescan Environmental Services Ltd.
B. Godin - EP, West Vancouver
B. Kelso - EP, West Vancouver

WMB 12364

Catear Resources Ltd.

Suite 400, 255 - 17th Avenue S.W.
Calgary, Alberta, Canada T2S 2T8
Phone: (403) 228-6761
Fax: (403) 229-3207

February 16, 1988

Jennifer C. Gregory
Environmental Engineer
Rescan Environmental Services Ltd.
Suite 510 Coopers & Lybrand Building
1111 West Hastings Street
Vancouver, B.C.
V6E 2J3

Dear Jennifer:

Sorry about the delay in getting the information to you. Between being out of town and other business my life appears too hectic.

The samples on the Chemex certificate of A8725910 are all drill core and are described as follows:

Sample	Location	Description
#33 82-84	north of the glory hole on the east side of the Golden Rocket Vein 74.3 feet below surface	Sericit schist 5-10% pyrite
#42 19.5-21.5	south east of the glory hole on the east side of the Golden Rocket Vein 13.8 feet below surface	Sericite schist weakly pyritic
#42 165-167	southeast of the Glory hole just east of the Golden Rocket zone 116.7 feet below surface	Sericite schist pyrite 5-10%
#50 152.5-154.5	along the Goldridge mineralized zone 124.9 feet below surface	Sericite schist with 2-3% pyrite
#57 368-370	immediately beneath the Glory hole on the east side of the Golden Rocket zone 333.5 feet below surface	Sericite schist with 5-10% pyrite

These rocks are all sericite schists and would represent 25-30% of the waste

rock outside of the mineralized zone. Further testing of the volcanics in the wall zones will be conducted in the near future.

Yours truly,

CATEAR RESOURCES LTD.

E.R. Kruchkowski
President

ERK/lmh

Environment Canada | Environnement Canada

Conservation and Protection | Conservation et Protection

Environmental Protection

Kapilano 100, Park Royal, Third Floor
West Vancouver, BC V7T 1A2

Your file / Votre référence: AE-7980

Our file / Notre référence: 4484-37/C235

February 18, 1988

Mr. T. Roberts
Head, Industrial Section
Waste Management Branch
Northern Region
Ministry of Environment and Parks
Bag 5000
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Canada

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We trust the above clarifies our position. Ms. L. Cox may be contacted at 6-3487 for further discussion.

Thank you for your continued cooperation in this matter.

Yours truly,

M. Ito, P.Eng.
Chief, Environmental Protection Branch
Pacific and Yukon Region

cc: D. Rowse - DFO, Prince Rupert
O. Langer - DFO, New Westminster
A. Von Finster - DFO, Whitehorse
W. Knapp - DFO, Vancouver
V. Bartnik - IW/L, Vancouver
E. Kruchkowski - Catear Resources Ltd.
J. Gregory - Rescan Environmental Services Ltd.
B. Godin - EP, West Vancouver
B. Kelso - EP, West Vancouver

Meeting re. Cateur Resources, Feb. 3, 1988.

AE. 7980

Time: February 3, 1988. 200 pm.

Place: Rescan.

Present: John Brodie, Rescan
Jennifer Gregory, Rescan
Fraser McKenzie, WMB
Ed Kruchkowski, Cateur
Erik Ostensoe, Cateur.
Blythe Chang, DFO
Benoit Godin, EP
Lisa Cox, EP.

Status of mine development.

Driving decline about 310 ft.

Mountain of material stacked beside adit on shore of Uslapan Lake.

Crushing facility in 6 weeks.
Mill building erected - ball mill and Diester tables.

Midlings + 25 Au (sulphides + silicates)
2½ % shipped as rough gold concentrate.

Equip. operational by end of March - complete Phase I development program.

Phase II - deepen decline. After pilot opn., deepen mine by 120 ft.

120 tpd mill now. Potential for 250 tpd.

$\frac{10,000 \text{ t}}{120 \text{ tpd}} = 83 \text{ days}$ // ← Pilot plant opn. life.

58 diamond drill holes (DDH)

Production and Permit by end of March. ← Start-up date.

F.M. : The following info. required:
- surface area and depth of lake.
- snow depth.
- coverage of tailings (water depth)

E.K. Goldpan Lake: 60,000 m^3
Elev. 4650 ft. (1520.5m) = WL.
Over 1 mi. d/s to Brucejack Lake.

"Iceberg Lake": connected to outlet of Goldpan Lake.
Larger, deeper (steep vertical sides).
Elev. 4650 ft. (1520.5 m) = WL.

Unamed stream entering join between Goldpan and "Iceberg" flows year round.

Lakes do not freeze over. Snow cover provides insulation.

J.B. Flow estimates based on regional hydrology data obtained for Sulphurets project.
Projections for d/s water quality and flows will go as far as Catear Creek at the mouth where it discharges to Brucejack Lake.

E.K. Lake u/s of Goldpan is fed by U/G source - assumes fracture system in bedrock.
Possible fault zone connecting 2 u/s lakes.

E.K. Metallurgical Testwork.

Coarse crush to -100 mesh. } 2 kg sample.
Jig Table.

(Flotation Process) - proposed for full scale.

Tailings have been discarded.

" Company will rerun bench scale process (crush to -100 mesh +

when it is intersected by decline. Unit ops' will be documented.

Testwork performed by Nesmont (Sandon Industr.) in Delta.

J.B. Analyze tailings for: percent solids
metals (solids and supernatant).
NFR (supernatant).
acid generation potential, paste pH.
Supernatant to be collected after settling for t = retention time of Yukipan Lake.

E.K. Berm could be constructed at outlet of Yukipan Lake to dam it. - create "controlled" outlet for sample collection. (O/F weir).
- increase retention time.
- ~1m high dam - raise level of Yukipan Lake. Can't raise lake w/ muck, otherwise would flood bdk
Unamed Ck. could be diverted into "Iceberg" Lake to improve retention in Yukipan.

Possibility of diverting outlet from "Iceberg" Lake to flow directly into Sulphurets Ck., bypassing Brucejack Lk. and avoiding potential compliance conflicts with Sulphurets.

E.K. Waste rock volume = 10 × 14 × 320 ft = 44,800 ft³
Assume 30% increase in volume = + 13,440
58,240 ft³ (1648 m³). ← Volume rock in lake.

Waste rock density: 12 ft³ = 1 ton
→ mass of waste rock = $\frac{44800\ ft^3}{12\ ft^3/ton}$ = 3,733 ton //

Waste rock SG = 2.72.

E.K. Anticipate mine water discharge.
L.C. Sample mine water for chemical analysis.

E.K. Tailings. 120% volume increase, ore → tailings.
7% removed as concentrate.

Freshet: mid-May.
Snows until early June.

Tailings. Mineralized zone / tailings : 10.5 ft^3 = 1 ton.

10,000 tons tailings , 7.07% concentrate.
700 tons ore.
9,300 tons.

Say 10,000 tons × $\frac{10.5\ ft^3}{ton}$ × 120% = 126,000 ft^3
= 3,566 m^3 // ← Volume tailings in lake.

Goldpan Lake vol. = 60,000 m^3.

Tailings : $\frac{3566}{60000}$ = 6% vol. Goldpan Lake //.

Rock : $\frac{1648}{60000}$ = 2.75% ~ 3% vol. Goldpan Lake //.

Total : 6% + 3% = 9% vol. Goldpan Lake // ← Total waste storage, % of lake capacity.

Approx. $\frac{1}{10}$ volume of Goldpan Lake.

E.K. Bruce Ballentyne, GSC (Ottawa) - water quality data.

Arsenopyrite
As, Sb high in soils.

J.B. Argument why no fish in Goldpan Lake:
- no fish in Bracejack Lake - data avail. from Sulphurets studies.
- less hospitable conditions in Goldpan
- too cold
- Ed's experience & observations
- no insects
- rock faces 5-6 ft. high in Catear Ck.

Connection: Goldpan to "Iceberg" : 20 ft. wide
100 ft. long.

Environment Canada | Environnement Canada
Conservation and Protection | Conservation et Protection

Environmental Protection
3rd Floor, Kapilano 100, Park Royal
West Vancouver, British Columbia V7T 1A2

Your file Votre référence

Our file Notre référence
4484-37/C235

AE-7980

January 29, 1988

Mr. E. Kruchkowski
Catear Resources Ltd.
Suite 400
255 - 17th Avenue S.W.
Calgary, Alberta
T2S 2T8

Dear Mr. Kruchkowski:

Re: Federal Metal Mining Liquid Effluent Regulations

This agency has received information from the British Columbia Waste Management Branch (WMB) that your company wishes to obtain approval for the operation of a gold mine in B.C. Please note that all new, reopened, or expanded metal mines in B.C., except gold mines using cyanidation, are subject to the Federal Metal Mining Liquid Effluent Regulations (copy enclosed). We are conducting a review of your proposal in concert with the W.M.B. and will attempt to implement our requirements through the Waste Management Permit system. However, we will discuss the implementation of our requirements directly with your company if they are not reflected in the terms of the issued permit or letter of transmittal.

Yours truly,

M. Ito, P.Eng.
Chief, Environmental Protection Branch

Encl.

cc: T. Roberts, WMB, Smithers
O. Langer, DFO, New Westminster
W. Knapp, DFO, Vancouver
J. Gregory, Rescan Environmental Services Ltd.

Canada

CATEAR/
RESCAN MEETING

ATTENDED BY:

Erik	- Geologist	
Blythe	- DFO	
Jennifer Gregory	- Rescan	
John Brodie	- Rescan	Feb 03/88
Frazer McKenzie	- Waste Mngmnt	
Ed Krutchkowski	- Catear	
Lisa Cox	- E.A.P.	
Ben Wa	- E.P.	

John Brodie
- Catear has a tight schedule ~ wants permits

Ed K. (review of project)
- driving decline at present
- waste rock at Goldpan L.; weakly acid generating
- ~~co~~ crusher bldg ~ operational within 6 wks
- then mill bldg to be erected. ball mill, dixtrix tables
- tailings ~> to adequate storage
- 2½% of rock = conc. w/ 60-70% of Gold
- could be oper. by end of March
- phase 1 : Development Program
- Phase 2 : depends on committment by approval agencies
  ~> MINING CONTRACTOR (will have to ship out if no extension on contra
  - deepen decline + other work Phase 1 ✓
- Stope rock between now + ends of March (10,000)
- decline is spiral (phase 2 : extend + drift)
- want to be able to bring 10 000 up + process immediately
* - enough reserves for full-scale already
  4 different views systems 100,000 tonne @ 10 g.
- gather metallurgical info.
- correlation of drill holes w ground (actual)
- mine in bulk ~> to provide data w/ confidence

Ray Crook - doesn't see it as ~~to~~ pre full-scale continuum

* water supply

INFLOW TO GOLDPAN

60 000 m³ VOL. (ESTIMATED)
Goldpan

- exfiltration
- extrapolate from Newhawk : from regional hydrology study
- 300 gpm summer

- Permit: - require hydrology studies for stage 1

TAILINGS

- test studies ~ lost samples (4 ton of core.)
- can conduct samples again on smaller amnts
- stockpile middlings
- 100 mesh & coarser (i.e., -100 mesh) otherwise slime
- representative test? does a 2kg sample mean anything?
- flotation not part of pilot (save middlings)

• Nesmont (Delta)
- intersect zone (2 wks) — total. metals (after — retention time in lake)
  - supernatant (diss. metals)
  - gradation curve
  - solids (tailings)
  - % solids
  - metals
  - acid mine drainage (will carry on + do flotation study)

} 100 lbs ?

2 stages of tailings

Rescan: to include $ explanation of lab bench-test & tailings

- 3 -

jig tables
dyse tables
middling
tailing - w/ flotation
w/o flotation

WASTE ROCK:

- 16 x 14' x 320' waste rock to date — 12 cf/ton

10.5 in mineralized (cf/ton)

- another 900' just to get to start of pilot
- after pilot, deepen mine devel by another 1200' (seperate phase)

DAM @ end of Goldpan (to keep stream discharging only to iceberg)

---

start of spring = mid-May

TAILINGS:

- 10 000 ton ~~waste~~ ; 20% increase in volume @ 10.5 cf/ton
- 700 ton concentrate (7.07%)

ACID GENERATION:

- 5 more samples (Nov. - all acid generating)
- all rocks are pyritic (2 → 15% sulfides)
- some streams in area are very acidic (can't use for cooking)

Geological Survey (Bruce Ballytne) ~> background info.
(try to get info. from their study for Rescan Report)

7[illegible] m^3 waste
60 000 m^3 lake

FISH:

- minnow traps, sounded, gill nets, etc. on Brodeur Jack L.
- biologist says = too cold
- conclude nothing in Goldpan
- Ed K. - several yrs. camping in area & never seen anything
- shallow water over high boulders
- no birds, plants. (grasses in a swamp) arctic willow)
- no insect life (except shallow water @ outlet) ~~see~~ few larvae
- series of falls below Sulphurets camp
  ↳ cascading in canyon (10 m)

(Lakes rarely freeze due to snow cover).

Waste Rock - full scale

- EK concerned about volume of WR for underwater
- will it be necessary? yes, if underwater is only means of preventing AMD
- may be able to use other methods (covers, etc.) blending, etc.
- or utilize segregation
- interpretation of Nor. acid test results would help (Lisa requested interpretation)

MIDDLINGS

- flotation at later date (but early as possible - will want to recover gold a.s.a.p.), ∴ looking at conducting flotation

* AMENDMENT

POLITICS

- Newhawk - lakes are on their (Newhawk) mineral claim
- by-pass Brucejack to avoid contaminating water supply, & to appease Newhawk if they object
- ~~xxx~~

COMPLIANCE POINT

- end of Glacier Lake (preferred)
-

Brucejack L.

- as a buffer for env. protection = if don't meet at end of Glacier, then out
- ie. don't need buffer since will be OK or NO GO

- ~~Fish~~
- hydrology < Glacier L. / Goldpan
- confidence of submergence
- volumes of wastes

Compliance Pt.
- 100' x 20'

FOR AGENCIES:

(1) Downstream Water Quality
- acid generation to date
- includes tailings tests

(2) Fish

(3) Hydrology of Goldpan L. + geometry

- waste rock

(2) Refuse forms! — industrial & ash!

Feb. 03/88

PREPARATION FOR MEETING

430 m³/day → ~~[illegible]~~ Goldpan L

6 546 m³/day → Catear Creek.

(1)

(1) Lisa Cox

(2) Env.: Before or After Pilot project Requirements:

- acid production potential test work on mill tailings
- quality & quality of waste rock ~ ore body mineralogy

see (4) below

(3) frozen sampling site → select inside mill tailings bldg or a suitably constructed outside site

(4) What will be pre-operational & what will be pilot info. for assessment of full scale?

PRE?
i) fisheries values of Goldpan L.
ii)

AFTER
i)

(5) What are the Fed limits for:

pH
Cu
Pb
Ni
Zn
As 0.50?

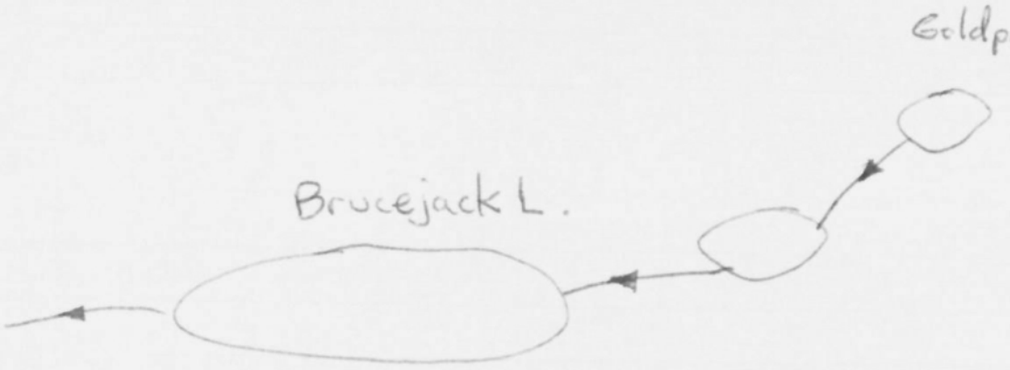
(6) Flocculant add'n.: proposed to use ~~[illegible]~~ Goldpan L.?

Habitat Biol. DFO - Blythe Chang ~ Regional
DFO - Wayne Knapp ~ Head Office

Al Von Finster - DFO

- move monitoring point: end of

(2)



Piteau Sites: ~> Goldpan L = cover acid mine tailings

Glacial Flour = turbid, but different particle from flour
smooth, soft round
contrast: tailings = jagged, etc.

STUDIES?

REGULATIONS = minimum! EPS will stick to this!

Metals: wouldn't set lower than background, but set it at best practicle technology

Look at:
Reg's (set by all) → ~~what~~ could
based on what can be achieved

Cyanide → couldn't reach consensus

contrast:

receiving water criteria
- multiple users can overload

Goldpan → already good treaty

International Boundary

- Enforcement ~ Compliance Monitoring
  ~ how to ensure that OK (agency audit)

Newhawk :

false alarms?
first come ?

- computer studies
- bathymetry, etc.

Philosophy:
- flocculants
- thickener
- } financial statement

↳ get info. + discuss due to precedence

INFO:

- how big is Goldpan
  - surface area
  - depth
  - ice cover
  - can tailings stay submerged

- characterize tailings } metals
  - supernatant
  - solids

- inflow / outflow to Goldpan (diln)
- applies to other Lakes d/s
- why the change (to include other L)
* - want to know what they propose & we'll consider (no commitments)
* - Bruejack?
  - Catear Cr. - quality of it before enters
  - then Catear becomes part of modelling for Newhawk, ∴ would have to re-do model
  - legal advice needed for compliance (internal)

- would need it in writing (their commitment)

Background Levels on Goldpan. for Brucejack discharge re to careers ~~[illegible]~~. contribution of mine generation

Waste Rock – need sufficient capacity in Goldpan to ensure that tailings + waste rock will be submerged to prevent acid mine drainage

lack of acidic waters on surface

– yellow surface rock show that weathering process already ~~[illegible]~~ oxydize exposed sulfur compounds

– milling of ore ~~[illegible]~~ greatly increases surface area of exposed ~~[illegible]~~ sulfur compounds for oxydation

Environment Canada | Environnement Canada
Conservation and Protection | Conservation et Protection

Environmental Protection

Kapilano 100, Park Royal, Third Floor
West Vancouver, BC V7T 1A2

Your file / Votre référence
AE-7980
Our file / Notre référence
4484-37/C235

January 21, 1988

Mr. T. Roberts
Head, Industrial Section
Waste Management Branch
Northern Region
Ministry of Environment and Parks
Bag 5000
SMITHERS, BC
V0J 2N0

Dear Mr. Roberts:

Re: Application pursuant to the Waste Management Act
on behalf of Catear Resources Ltd.
dated November 25, 1987

Reference is made to a letter from your office dated December 9, 1987 regarding the subject application to discharge gold mine/mill effluent into Goldpan Lake located at the headwaters of the Unuk River approximately 40 kilometers upstream from the British Columbia/Alaska border. The effluent results from the processing of a 10,000-tonne bulk sample. Federal interests in this proposal relate to the protection of water quality and resident and migratory fish species in the Unuk River system. In addition, the operation will be subject to the federal Metal Mining Liquid Effluent Regulations (MMLER) which apply to new metal mines except gold mines using cyanidation.

Because the mine operation will be regulated under the MMLER, certain additional information must be provided before the proposed tailings discharge to Goldpan Lake can be approved. Because of the small size of the proposed development, extensive evaluations are not considered necessary, and we anticipate such information could be generated from existing data. We would be pleased to meet with the applicant to discuss assessments needed to satisfy regulatory requirements as outlined below.

. . 2

Canada

The Regulations prohibit using a body of water frequented by fish as a tailings impoundment except when so designated in writing by the Minister of Fisheries and Oceans. Due to its extreme topographic setting, it is unlikely that Goldpan Lake supports fish, however, the applicant must provide evidence to support this contention in order to ensure consistency with the MMLER. A statement of fish presence/absence in Goldpan Lake and supporting data is required prior to approval of lake tailings disposal. A negative statement should be supported by rationale based on evidence such as the configuration of the lake, fish surveys of adjacent waterbodies, and fish habitat limitations.

If additional information confirms the absence of fish in Goldplan Lake, and a tailings discharge to the lake is approved, as a minimum, the discharge from the lake will be required to meet the MMLER effluent criteria. The lake discharge to Catear Creek must comply with regulated limits for pH and total metals (copper, lead, nickel, zinc and arsenic). The Regulations also require a maximum total suspended solids concentration of 50.0 mg/L in a grab sample, or a monthly mean of 25.0 mg/L. As such, the lake must function as an effective sediment removal pond. Flocculants may be required if acceptable levels are not achieved at the lake outlet.

In the light of federal concerns for protection of fish habitat and transboundary aquatic resources in downstream areas, before disposal the Company should prepare a preliminary assessment of the effect of a tailings discharge to Goldpan Lake on downstream water quality. Projections for downstream water quality impact should be based on characterization of tailings effluent from bench-scale metallurgical tests and stream flow dilution calculations.

In addition, we need information to assure that the pilot plant tailings can be fully accommodated in Goldpan Lake and that the tailings will be covered by water on a continuous basis. The applicant should also investigate how tailings can be placed in the lake in the most effective manner, eg., through optimum placement of the tailings outfall, to avoid beaching or erosion of the tailings deposit.

. . 3

Permit Criteria and Monitoring Program

Results of acid production potential tests on two Catear rock samples identified as "DDH 6227" and "Golden Wedge" confirmed both samples as potential acid producers (B.C. Research, 1987). We assume the Golden Wedge material is an ore sample and DDH 6227 is waste rock. The large net acid production potential of the Golden Wedge ore sample suggests the tailings may also have a high potential to develop acid mine drainage. Additional acid production potential test work on mill tailings is recommended as a permit condition. Tailings characterization for metal content, and paste pH analysis should be included in the acid generation prediction program.

Submergence in water is one approach to prevention of acid mine drainage in tailings. Water covers can provide an effective barrier to diffusive transport of oxygen thereby inhibiting sulfide oxidation and acid generation. However, for effective reduction of oxygen transfer, it is essential that the proposed underwater disposal site have adequate capacity and depth to ensure a continuous water cover of sufficient depth to avoid exchange with aerated surface layers.

The results of acid generation test work on sample DDH 6227 indicates the waste rock has marginal potential to generate acid mine drainage. Although the total sulfur content of the sample is low (1.12%), waste rock containing less than 2% sulfur has been known to generate acid mine drainage (Errington et al 1987). We therefore recommend that a requirement for additional test work to fully characterize the quality and quantity of waste rock expected from the pilot operation be included in the Permit. The rock sampling program should be fully documented in relation to ore body mineralogy. If waste rock is confirmed as a potential source of acid mine drainage, suitable handling and disposal techniques should be implemented.

The following permit monitoring program is recommended:

1. Mill tailings effluent should be sampled for pH, dissolved metals (Cu, Fe, Pb, Zn), dissolved sulfate, and percent solids on

. . 4

three occasions during the mill operations. Volumes of effluent discharged to Goldpan Lake and supernatant recycled to the mill should be recorded.

2. The outlet of Goldpan Lake should be sampled monthly for pH, alkalinity/acidity, sulfate, total and dissolved metals (Cu, Fe, Pb, Zn). Monthly lake discharge sampling should commence immediately and extend until one month after mill shutdown. The sampling program should continue on a quarterly basis for one year thereafter.

3. Results should be reported within ten days of sampling. Additional sampling such as a bioassay analysis may be required based on the results. A report on the pilot mill operation, including a summary of all data, should be completed within sixty days of completion of the campaign.

We further recommend that cyanide and mercury be specified as not approved reagents for this operation.

Although we anticipate no objections to the proposed effluent discharge once the requested pre-operational data is provided, we recommend withholding issuance of a permit until these information requirements are met.

Our comments on this application do not imply Environment Canada's or the Department of Fisheries and Oceans' approval for subsequent full-scale operation. We expect an opportunity to comment further if the project proceeds to full-scale development. In this regard, the 10 000-tonne bulk sample mining program will provide the Company with an opportunity to obtain valuable data in support of a possible full-scale proposal.

Although we expect our recommendations will be reflected in the Permit, we would appreciate the opportunity to discuss any proposed variances with you as our response has been developed within the context of requirements to protect the fishery resource pursuant to the Fisheries Act and responsibilities pursuant to the International Boundary Waters Treaty. Ms. Lisa Cox may be contacted at 666-3487.

. . 5

Thank you for giving us the opportunity to comment on this application. Your continued cooperation is appreciated.

Yours truly,

M. Ito, P.Eng.
Chief, Environmental Protection Branch
Pacific and Yukon Region

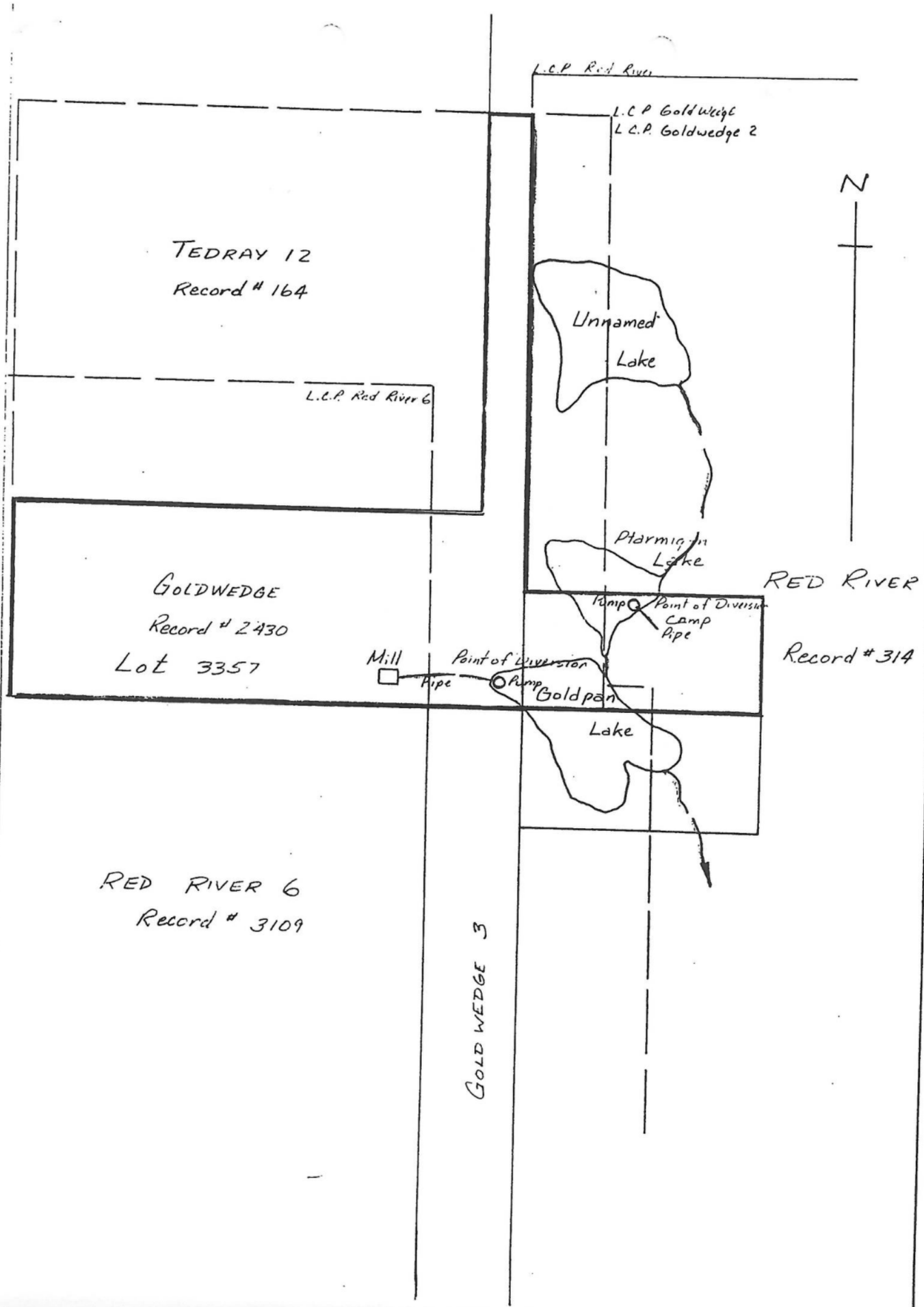
cc: D. Rowse - DFO, Prince Rupert
O. Langer - DFO, New Wesminster
W. Knapp - DFO, Vancouver
A. Von Finster - DFO, Whitehorse
D. Bernard - IW/L, Vancouver

E. Kruchkowski, Catear Resources Ltd. (Certified Mail)
J. Gregory, Rescan Environmental Services Ltd.

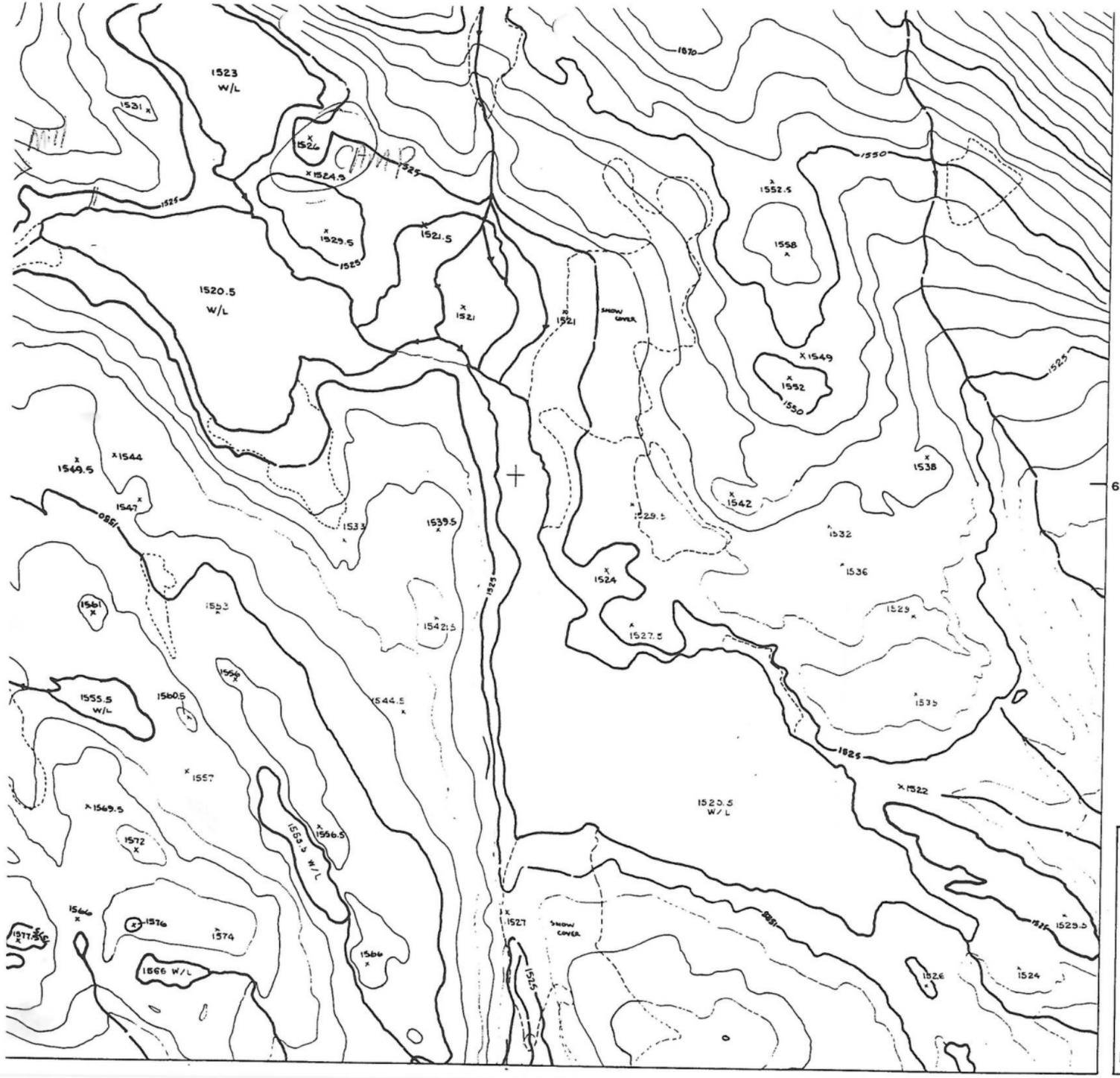
References

1. B.C. Research, October 8, 1987. Letter to Catear Resources Limited.

2. Errington, Dr. J.C., and K.D. Ferguson, 1987, Acid Mine Drainage in British Columbia, Today and Tomorrow. Proceedings of Acid Mine Drainage Seminar/Workshop, Halifax, Nova Scotia, March 23-26, 1987. Environment Canada.



Province of British Columbia — Ministry of Environment, Water Rights Branch	NORTHERN REGIONAL OFFICE
DRAWN BY: J. B. McGONIGAL DATE: JAN 22/88	PROJECT: Report on Water Application
APPROVED BY: REVISED:	SCALE: 1:2,000 MAP DESIGNATION: 104 B
FILE NO.: 6000406 W.R. Ref. Map No.: 104B/89	WATER DISTRICT: PRINCE RUPERT PRECINCT: TERRACE
	DRAWING No.: Sheet of , Index:



APPLICANT CATEAR RESOURCES LTD. or WORK ORDER ___

AGENT RESCAN ENVIRONMENTAL SERVICES LTD.

FILE NO: AE-7980
APPLICATION DATED Nov. 25 19 87
APPLICATION RECEIVED Nov. 30 19 87
WM REGION Smithers
PROCESSING OFFICE CODE 760
SECTION I
W.M.O. HOF

LOCATION DESCRIPTION Brucejack Lake (56 km NW Stewart)

INDUSTRY CODE 05 M.I NTS MAPSHEET 104 B 9

ADMINISTRATIVE CHECK LIST

1. APPLICATION SIGNED	X
2. APPLICATION DATED	X
3. RECEIVED WITHIN TIME LIMITED	X
4. AGENT FORM COMPLETED (If appointed)	
5. PRODUCTION CAPACITY FORM COMPLETED & SIGNED	X

ADMINISTRATIVELY ACCEPTABLE AS APPLICATION ___

PRELIMINARY TECHNICAL CHECK LIST

1. APPROPRIATE PLAN RECEIVED	✓
2. LAND DESCRIPTION ADEQUATE	✓
3. DESCRIPTION OF SOURCE	✓
4. TYPE & CHARACTERISTICS OF DISCHARGE	✓
5. QUANTITY OF DISCHARGE	✓
6. ADDITIONAL INFORMATION	N/A

TECHNICALLY ACCEPTABLE AS APPLICATION JH

PROCESSING SCHEDULE

1. CIRCULATED TO AGENCIES BY Dec 4 1987
2. PROOF OF PUBLISHING BY CA2 - Dec 17/87 S2 - Dec 23/87 19 ___
3. FINAL OBJECTION DATE ___ 19 ___
4. SITE INVESTIGATION DATE ___ 19 ___
5. TARGET RESUME DATE 88-02-28 19 ___
6. TARGET DECISION DATE ___ 19 ___
4. TARGET COMPLETION DATE ___ 19 ___

PUBLISHING REQUIREMENTS

1. PUBLISHING OR POSTING
   ✓ Required ___ Not Required
   (a) BRITISH COLUMBIA GAZETTE
   (b) Stewart Sentinal
   (c) ___
   (local papers or post office)

2. PERSONAL SERVICE
   ___ Required ✓ Not Required
   To: ___

Date (Signature, Waste Manager)

MINOR AMENDMENT
___ Publish Manager's decision

AMENDMENT IMPOSED BY MANAGER
___ Publish decision
___ Notify permittee

CIRCULATION INSTRUCTIONS

4	✓	HEAD OFFICE/CENTRAL REGISTRY
5	✓	FISH & WILDLIFE SMITHERS
5	___	MARINE RESOURCES SEC. FISHERIES BR.
5	___	AGRICULTURE & FISHERIES
5	✓	WATER MANAGEMENT
5	___	AIR MANAGEMENT PROGRAM
6	✓	E.P.S. OF ENVIRONMENT CANADA
7	✓	REGIONAL DISTRICT OF K-S
8	✓	HEALTH TERRACE
9	___	APPLICANT (TAILINGS POND)
10	✓	MINES (~~TAILINGS POND~~) SMITHERS
	___	LAND TITLES
	___	REGISTRAR OF COMPANIES
	___	DISTRICT OR MUNICIPALITY OF ___
	___	OTHER (SPECIFY) ___

DETERMINED BY J. Hofweber
DATE CIRCULATED ___ 19 ___
CLERK ___

Rescan Environmental Services Ltd.

Refer to File no.

e 510 Coopers & Lybrand Building
l West Hastings Street
Vancouver, B.C. V6E 2J3
Tel: (604) 689-9460
Fax: (604) 687-4277

November 9, 1987

Ministry of Environment
Waste Management Branch
3726 Alfred Avenue
Smithers, B.C.
V0J 2N0

Attention: **Jim Hofweber, P.Eng.**
Waste Management Officer

Dear Sir,

Re: Application for a Permit Authorizing an Effluent Discharge
Pilot Mill Proposal for Catear Resources' Goldwedge Property

Enclosed please find two copies of an application for a permit authorizing discharge of tailings from the processing of a 10,000 tonne bulk sample at Catear Resources Goldwedge Property.

The tailings are to be discharged into Goldpan Lake, as shown on the site plan, with recycle of water back to the mill. A water license application for the lake is being processed at the present time and Water Management will be issuing Catear a letter authorizing the use of this water for re-circulation purposes until that time when the processing of the water license is complete. Five representative samples of waste rock have been submitted to Chemex Labs for acid generation tests; results will be submitted to you as they become available.

Catear Resources is eager to commence with their pilot mill, and as such, would like to have this permit application processed and approved in as little time as possible. If I can be of any assistance, please do not hesitate to call me at the above number.

We appreciate your prompt attention to this application.

Yours very truly,

RESCAN ENVIRONMENTAL SERVICES LTD.
per:

Jennifer Gregory

Jennifer C. Gregory
Environmental Engineer

Encl.

cc: Catear Resources Ltd.

Received during
Feb 03/88 meeting
@ Rescan, Vancouver.
JW

FAX (403) 229-3207

BC RESEARCH

3650 Wesbrook Mall,
Vancouver, B.C.,
Canada V6S 2L2
Phone (604) 224-4331
Cable RESEARCHBC
Telex 04-507748
FAX (604) 666-7035

October 8, 1987
Our File: 4-07-423

Mr. Klaus Vink
Catear Resources Limited
Suite 400
255 - 17th Avenue S.W.
Calgary, Alberta
T2S 2T8

Dear Mr. Vink:

Tabulated results of acid production potential tests on your samples "DDH 6227" and "Golden Wedge" are attached.

Both → well rock samples are confirmed as potential acid producers, so disposal of material represented by these samples will require appropriate precautions.

The DDH 6227 material has a fairly small net acid production, and the sulphide reactivity was fairly low in the confirmation test. However, the Golden Wedge material has a relatively large net acid production and reactivity is quite high. By comparison with other similar materials we have tested, I would expect the Golden Wedge material to develop acid drainage within a short time (1-3 years) if disposed of as tailing unless a suitably alkaline environment is maintained.

I have enlosed a copy of the test procedure for you file.

I trust that this report is satisfactory; if you have any questions, please contact me.

Yours very truly,

B.C. RESEARCH

R. O. McElroy
Group Leader
Extractive Metallurgy
Industrial Chemistry Division

ROM/md
Enc.

Technical Operation of the BRITISH COLUMBIA RESEARCH COUNCIL, a Non-profit Industrial Research Society

TABLE 1

RESULTS OF CHEMICAL ACID PRODUCTION POTENTIAL TESTS ON SAMPLES SUBMITTED BY CATEAR RESOURCES

SAMPLE CODE	TOTAL SULPHUR (wt %)	POTENTIAL ACID (Kg/T)	SLURRY pH	ACID CONSUMPTION (Kg/T)	POTENTIAL ACID PRODUCER
DDH 6227	1.12	34.3	9.0	17.2	Yes
Golden Wedge	4.51	138	8.3	20.6	Yes

TABLE 2

RESULTS OF BIOLOGICAL CONFIRMATION TESTS ON SAMPLES SUBMITTED BY CATEAR RESOURCES

SAMPLE CODE	pH			CONFIRMED ACID PRODUCER
	Bioleach Final	+7.5g	+7.5g	
DDH 6227	2.1	2.7	3.4	Yes
Golden Wedge	1.7	2.0	2.3	Yes

Province of British Columbia | Ministry of Environment | WAS ANAGEMENT BRANCH

Waste Management File No. .....

APPLICATION FOR A PERMIT UNDER THE PROVISIONS OF THE WASTE MANAGEMENT ACT
(Effluent)

THIS APPLICATION is to be filed with the Regional Waste Manager at 3726 Alfred Avenue, Bag 5000

Smithers (Regional Office address), British Columbia V0J 2N0 (Postal Code)

"any person who may be adversely affected by the discharge or storage of the waste may within 30 days from the last date of posting under section 3 (a) or publication, service or display under section 4, write to the manager stating how he is affected."

PREAMBLE — The purpose of this application is to authorize the discharge of effluent from a gold mine/mill complex, resulting from the processing of a 10,000 tonne bulk sample.

1. I/We Catear Resources Ltd. (Full name, or if a company, British Columbia registered name)

of 3000 - 595 Burrard Street, Box 49052, Vancouver, B.C. V7X 1R3 (Address, or if a company, British Columbia registered address)

hereby apply for a permit to discharge effluent from gold mine and mill, with recycle of water from Goldpan Lake. (Type of operation causing effluent)

located at Brucejack Lake, approximately 56 km northwest of Stewart, B.C. (General location)

to Goldpan Lake thence to Catear Creek thence to Brucejack Lake thence to Sulphurets Creek thence to the Unuk River. (Name of creek, river, lake, bay, inlet or to land)

and give notice of application to all persons affected.

2. The land upon which the treatment works will be located is Goldwedge Mineral Claim, Record No.2430 and Lot 3357, Cassiar Land District, Skeena Mining Division. (Give legal description)

3. The discharge will be located at Goldwedge Mineral Claim, Record No.2430 and Lot 3357, Cassiar Land District, Skeena Mining Division. (Give legal description if different from the above)

4. The rate of discharge will be:
   Maximum daily to Goldpan Lake: 430m^3/d (Cubic metres/day)
   ~~Average daily (based on operating period)~~ to Catear Creek: 6546 m^3/d (Cubic metres/day)

   The operating period during which the effluent will be discharged is continuous (Hours/day, days/week, or date to date)

5. The characteristics of the effluent discharged shall be equivalent to or better than [insert values after completion of column (2) of table (a) on reverse side].
   To Goldpan Lake: typical tailings from a gold mill employing gravity separation only with no flotation, no cyanide or thiourea leach circuit.
   To Catear Creek (from Goldpan Lake):

pH range	6.5-8.5
dis. Al	0.50 mg/L
~~dis. Cd~~	~~0.01 mg/L~~
dis. Cr	0.05 mg/L
~~dis. Cu~~	~~0.05 mg/L~~
dis. Fe	0.30 mg/L
dis. Pb	0.05 mg/L
~~dis. Sb~~	~~0.25 mg/L~~
dis. Zn	0.20 mg/L
dis. As	0.50 mg/L

6. The type of treatment to be applied is none

7. Dated this ..... day of ....., 19.....

..... (PRINT name of applicant or agent)

..... (Signature of applicant or agent)

Telephone No. .....

A copy of this application was posted at the site in accordance with the Waste Management Regulations on .....
(Date)

ENV 1985 cc

PRODUCTION CAPACITY INFORMATION

MUST BE COMPLETED FOR ALL PERMIT APPLICATIONS
(see reverse side of form for production capacity units)

Industry Type Gold mine

Industry Code 0611

Production Capacity 98 tpd

Note: Production capacity must be reported in the units listed on the reverse for your Industry Type.

(date of signature)

Edward R. Kruchkowski
(print name of applicant or agent) (signature of applicant or agent)
President, Catear Resources Ltd.

*CAPACITY means design production or processing capacity of the works, in the units indicated for that industry, unless otherwise specified.

SEP 1 1987

File:

To: The Regional Waste Manager
at

Application Pursuant to Waste Management Act on
behalf of Catear Resources Ltd.
dated _____

I/we hereby authorize Rescan Environmental Services Ltd.
to deal with you directly on all aspects of the subject
Application.

_____
(Date)

_____
(Signature of applicant)
Edward Kruchkowski, President
Catear Resources Ltd.

SEP 1 1987

Chemex Labs Ltd.
Analytical Chemists * Geochemists * Registered Assayers
212 BROOKSBANK AVE., NORTH VANCOUVER,
BRITISH COLUMBIA, CANADA V7J-2C1
PHONE (604) 984-0221

To: RESCAN ENVIRONMENTAL SERVICES LIMITED

510 - 1111 WEST HASTINGS STREET
VANCOUVER, B.C.
V6E 2J3

A8725910

Comments: ATTN: ROY WARES CC: CATEAR

CERTIFICATE A8725910

RESCAN ENVIRONMENTAL SERVICES LIMITED
PROJECT :
P.O.# :

Samples submitted to our lab in Vancouver, BC.
This report was printed on 17-NOV-87.

SAMPLE PREPARATION

CHEMEX CODE	NUMBER SAMPLES	DESCRIPTION
208	5	Assay: Crush, split, ring -140

ANALYTICAL PROCEDURES

CHEMEX CODE	NUMBER SAMPLES	DESCRIPTION	METHOD	DETECTION LIMIT	UPPER LIMIT
380	5	S %: Leco induction furnace	LECO-IR DETECTOR	0.001	100.0
1117	5	Maximum potential acidity	CALCULATION	0.0	N/A
1118	5	Neutralization potential	TITRATION	N/A	N/A
1119	5	Paste pH	POTENTIOMETER	N/A	N/A

RECEIVED
NOV 18 1987
RESCAN ENVIRON. LTD.

Received During
Feb. 03/88 Meeting
@ Rescan, Vancouver
AM

Chemex Labs Ltd.
Analytical Chemists * Geochemists * Registered Assayers
212 BROOKSBANK AVE., NORTH VANCOUVER,
BRITISH COLUMBIA, CANADA V7J-2C1
PHONE (604) 984-0221

To : RESCAN ENVIRONMENTAL SERVICES LIMITED
510 - 1111 WEST HASTINGS STREET
VANCOUVER, B.C.
V6E 2J3
Project :
Comments: ATTN: ROY WARES CC: CATEAR

Page No. : 1
Tot. Pages: 1
Date : 17-NOV-87
Invoice # : I-8725910
P.O. # :

CERTIFICATE OF ANALYSIS A8725910

SAMPLE DESCRIPTION	PREP CODE		S % (Leco)	MAX POT ACID **	Neutral Poten**	PASTE pH
#33 82-84	208	--	5.61	175.0	130.55	8.4
#42 19.5-21.5	208	--	0.644	20.1	109.66	8.8
#42 165-167	208	--	5.35	167.0	10.86	8.1
#50 152.5-154.5	208	--	2.91	90.9	9.22	8.2
#57 368-370	208	--	4.97	155.0	122.10	8.6

CATEAR WASTE ROCK

ALL ASSAY DETERMINATIONS ARE PERFORMED OR SUPERVISED BY B.C. CERTIFIED ASSAYERS

CERTIFICATION : B Gwaite

Chemex Labs Ltd.

Analytical Chemists * Geochemists * Registered Assayers

212 BROOKSBANK AVE., NORTH VANCOUVER,
BRITISH COLUMBIA, CANADA V7J-2C1

PHONE (604) 984-0221

To : RESCAN ENVIRONMENTAL SERVICES LIMITED

510 - 1111 WEST HASTINGS STREET
VANCOUVER, B.C.
V6E 2J3

Project :

Comments: ATTN: ROY WARES CC: CATEAR

Page No. : 1
Tot. Pages: 1
Date : 17-NOV-87
Invoice # : I-8725910
P.O. # :

CERTIFICATE OF ANALYSIS A8725910

SAMPLE DESCRIPTION	PREP CODE		S % (Leco)	MAX POT ACID **	Neutral Poten**	PASTE pH						
#33 82-84	208	--	5.61	175.0	130.55	8.4						
#42 19.5-21.5	208	--	0.644	20.1	109.66	8.8						
#42 165-167	208	--	5.35	167.0	10.86	8.1						
#50 152.5-154.5	208	--	2.91	90.9	9.22	8.2						
57 368-370	208	--	4.97	155.0	122.10	8.6						

CATEAR WASTE ROCK

ALL ASSAY DETERMINATIONS ARE PERFORMED OR SUPERVISED BY B.C. CERTIFIED ASSAYERS

CERTIFICATION : B. Stewart

ENVIRONMENTAL LABORATORY
Report for form 00030339

Skeena - Waste Program ATTN: MACLEAN B

Site: NOSITE CATEAR TRENCH

75.3023

Submitted by (62925) MACLEAN D B

Address (09) Waste Management Branch
Northern Region
Bag 5000, 3726 Alfred
Smithers, BC V0J 2N0

MINISTRY OF ENVIRONMENT
NOV 19 1987
WASTE MANAGEMENT BRANCH
SMITHERS, B.C.

Phone No. -

Audit Sample ( )
Client study reference code (01)
Sampling agency code (06)

FR
BW.
F.A. AM

Site (NOSITE) CATEAR TRENCH

Sample Adjective ( )
Sample State (WW) Waste Water
Sample Descriptor (MS) Mining & Smelting Products

This form was processed to the computer on 3-JUL-1987 as RUSH
The cost for analyzing samples for this form is

Routine analysis:	$	247.68
Special analysis:	$	0.00
Total	$	247.68

Jimbo - for your info!
Note pH and metals
Zn Cd Cu Co etc.
sulfate

Site: NOSITE CATEAR TRENCH

From :87/06/25:0000 To :87/06/25:0000
Depth Range : 0.0 0.0 Tide :
Sample State: Waste Water
Sample Comment:

Parameter Description	Result	Units	Analytical Technique (Sparcode/Medium/Pres'n)
pH	?	pH units	Automated pH Meter (00041220/02/01)
Result 3.1, pH units. Analyzed outside of optimal time frame.			
Conductance Specific	675	uS/cm	Cond. Meter Siebold (00111160/02/01)
Hardness Total	105	mg/L	Calculated Result (0107CALC/--/--)
Hardness Dissolved	103	mg/L	Calculated Result (1107CALC/--/--)
Sulfate Dissolved	240	mg/L	Auto Methyl Thymol Blue (11211400/02/01)
Aluminum	18.7	mg/L	HNO3 Dig: ICP Analysis (Al-T0040/05/02)
Arsenic	0.017	mg/L	HCl/K2S2O8, Hydride; ICP (As-T0181/05/02)
Calcium	35.9	mg/L	HNO3 Dig: ICP Analysis (Ca-T0040/05/02)
Cadmium	0.01	mg/L	HNO3 Dig: ICP Analysis (Cd-T0040/05/02)
Cobalt	0.1	mg/L	HNO3 Dig: ICP Analysis (Co-T0040/05/02)
Chromium	< 0.01	mg/L	HNO3 Dig: ICP Analysis (Cr-T0040/05/02)
Copper	0.81	mg/L	HNO3 Dig: ICP Analysis (Cu-T0040/05/02)
Iron	10.3	mg/L	HNO3 Dig: ICP Analysis (Fe-T0040/05/02)
Magnesium	3.76	mg/L	HNO3 Dig: ICP Analysis (Mg-T0040/05/02)

Site: NOSITE CATEAR TRENCH

From :87/06/25:0000 To :87/06/25:0000
Depth Range : 0.0 0.0 Tide :
Sample State: Waste Water
Sample Comment:

Parameter Description	Result	Units	Analytical Technique (Sparcode/Medium/Pres'n)
Manganese	6.32	mg/L	HNO3 Dig: ICP Analysis (Mn-T0040/05/02)
Molybdenum	< 0.01	mg/L	HNO3 Dig: ICP Analysis (Mo-T0040/05/02)
Nickel	< 0.05	mg/L	HNO3 Dig: ICP Analysis (Ni-T0040/05/02)
Lead	0.011	mg/L	HNO3 Dig: HGA Analysis (Pb-T0060/05/02)
Vanadium	< 0.01	mg/L	HNO3 Dig: ICP Analysis (V--T0040/05/02)
Zinc	1.03	mg/L	HNO3 Dig: ICP Analysis (Zn-T0040/05/02)
Aluminum Dissolved	18.7	mg/L	ICP Analysis (Al-D0030/05/13)
Arsenic Dissolved	0.014	mg/L	HCl/K2S2O8, Hydride; ICP (As-D0181/05/13)
Boron Dissolved	< 0.01	mg/L	ICP Analysis (B--D0030/05/13)
Barium Dissolved	0.03	mg/L	ICP Analysis (Ba-D0030/05/13)
Calcium Dissolved	35.4	mg/L	ICP Analysis (Ca-D0030/05/13)
Cadmium Dissolved	0.01	mg/L	ICP Analysis (Cd-D0030/05/13)
Cobalt Dissolved	0.1	mg/L	ICP Analysis (Co-D0030/05/13)
Chromium Dissolved	< 0.01	mg/L	ICP Analysis (Cr-D0030/05/13)

Site: NOSITE CATEAR TRENCH

From :87/06/25:0000 To :87/06/25:0000
Depth Range : 0.0 0.0 Tide :
Sample State: Waste Water
Sample Comment:

Parameter Description	Result	Units	Analytical Technique (Sparcode/Medium/Pres'n)
Copper Dissolved	0.77	mg/L	ICP Analysis (Cu-D0030/05/13)
Iron Dissolved	10.2	mg/L	ICP Analysis (Fe-D0030/05/13)
Magnesium Dissolved	3.58	mg/L	ICP Analysis (Mg-D0030/05/13)
Manganese Dissolved	6.20	mg/L	ICP Analysis (Mn-D0030/05/13)
Molybdenum Dissolved	< 0.01	mg/L	ICP Analysis (Mo-D0030/05/13)
Nickel Dissolved	< 0.05	mg/L	ICP Analysis (Ni-D0030/05/13)
Lead Dissolved	0.010	mg/L	HGA Analysis (Pb-D0050/05/13)
Vanadium Dissolved	< 0.01	mg/L	ICP Analysis (V--D0030/05/13)
Zinc Dissolved	1.02	mg/L	ICP Analysis (Zn-D0030/05/13)

Phoned

DEX HEADER

DATE: 21 January 1988

TO: Jim Hofweber. Dex # 604-847-7217

POSITION TITLE: Waste Management Officer.

CITY: Smithers, B.C. (tel. 847-7551).

FROM: Lisa Cox

POSITION TITLE: Project Engineer. (tel. 666-3487).

CITY: ENVIRONMENTAL PROTECTION
CONSERVATION AND PROTECTION
ENVIRONMENT CANADA
WEST VANCOUVER, BRITISH COLUMBIA

RE: Cotean Resources.

NO. OF PAGES: 5 EXCLUDING HEADER DEX# 666-6281

ORIGINATOR SEQUENCE:

DEXED BY:
DATE: Jan 21 88
TIME: 8:25 AM

Environment Canada | Environnement Canada
Conservation and Protection | Conservation et Protection
Environmental Protection

Kapilano 100, Park Royal, Third Floor
West Vancouver, BC V7T 1A2

DRAFT COPY ONLY

Your file / Votre référence
AE-7980
Our file / Notre référence
4484-37/C295

January 21, 1988

Mr. T. Roberts
Head, Industrial Section
Waste Management Branch
Northern Region
Ministry of Environment and Parks
Bag 5000
SMITHERS, BC
V0J 2N0

Dear Mr. Roberts:

Re: Application pursuant to the Waste Management Act
on behalf of Catear Resources Ltd.
dated November 25, 1987

Reference is made to a letter from your office dated December 9, 1987 regarding the subject application to discharge gold mine/mill effluent into Goldpan Lake located at the headwaters of the Unuk River approximately 40 kilometers upstream from the British Columbia/Alaska border. The effluent results from the processing of a 10,000-tonne bulk sample. Federal interests in this proposal relate to the protection of water quality and resident and migratory fish species in the Unuk River system. In addition, the operation will be subject to the federal Metal Mining Liquid Effluent Regulations (MMLER) which apply to new metal mines except gold mines using cyanidation.

Because the mine operation will be regulated under the MMLER, certain additional information must be provided before the proposed tailings discharge to Goldpan Lake can be approved. Because of the small size of the proposed development, extensive evaluations are not considered necessary, and we anticipate such information could be generated from existing data. We would be pleased to meet with the applicant to discuss assessments needed to satisfy regulatory requirements as outlined below.

. . . 2

Canada

DRAFT COPY
ONLY

WMB Smithers
AE-7980

4484-37/C235
January 21, 1988

The Regulations prohibit using a body of water frequented by fish as a tailings impoundment except when so designated in writing by the Minister of Fisheries and Oceans. Due to its extreme topographic setting, it is unlikely that Goldpan Lake supports fish, however, the applicant must provide evidence to support this contention in order to ensure consistency with the MMLER. A statement of fish presence/absence in Goldpan Lake and supporting data is required prior to approval of lake tailings disposal. A negative statement should be supported by rationale based on evidence such as the configuration of the lake, fish surveys of adjacent waterbodies, and fish habitat limitations.

If additional information confirms the absence of fish in Goldplan Lake, and a tailings discharge to the lake is approved, as a minimum, the discharge from the lake will be required to meet the MMLER effluent criteria. The lake discharge to Cateer Creek must comply with regulated limits for pH and total metals (copper, lead, nickel, zinc and arsenic). The Regulations also require a maximum total suspended solids concentration of 50.0 mg/L in a grab sample, or a monthly mean of 25.0 mg/L. As such, the lake must function as an effective sediment removal pond. Flocculants may be required if acceptable levels are not achieved at the lake outlet.

In the light of federal concerns for protection of fish habitat and transboundary aquatic resources in downstream areas, before disposal the Company should prepare a preliminary assessment of the effect of a tailings discharge to Goldpan Lake on downstream water quality. Projections for downstream water quality impact should be based on characterization of tailings effluent from bench-scale metallurgical tests and stream flow dilution calculations.

In addition, we need information to assure that the pilot plant tailings can be fully accommodated in Goldpan Lake and that the tailings will be covered by water on a continuous basis. The applicant should also investigate how tailings can be placed in the lake in the most effective manner, eg., through optimum placement of the tailings outfall, to avoid beaching or erosion of the tailings deposit.

. . 3

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Permit Criteria and Monitoring Program

Results of acid production potential tests on two Catear rock samples identified as "DDH 6227" and "Golden Wedge" confirmed both samples as potential acid producers (B.C. Research, 1987). We assume the Golden Wedge material is an ore sample and DDH 6227 is waste rock. The large net acid production potential of the Golden Wedge ore sample suggests the tailings may also have a high potential to develop acid mine drainage. Additional acid production potential test work on mill tailings is recommended as a permit condition. Tailings characterization for metal content, and paste pH analysis should be included in the acid generation prediction program. (or pre-condition? pilot ok?

Submergence in water is one approach to prevention of acid mine drainage in tailings. Water covers can provide an effective barrier to diffusive transport of oxygen thereby inhibiting sulfide oxidation and acid generation. However, for effective reduction of oxygen transfer, it is essential that the proposed underwater disposal site have adequate capacity and depth to ensure a continuous water cover of sufficient depth to avoid exchange with aerated surface layers.

The results of acid generation test work on sample DDH 6227 indicates the waste rock has marginal potential to generate acid mine drainage. Although the total sulfur content of the sample is low (1.12%), waste rock containing less than 2% sulfur has been known to generate acid mine drainage (Errington et al 1987). We therefore recommend that a requirement for additional test work to fully characterize the quality and quantity of waste rock expected from the pilot operation be included in the Permit. The rock sampling program should be fully documented in relation to ore body mineralogy. If waste rock is confirmed as a potential source of acid mine drainage, suitable handling and disposal techniques should be implemented.

The following permit monitoring program is recommended:

1. Mill tailings effluent should be sampled for pH, dissolved metals (Cu, Fe, Pb, Zn), dissolved sulfate, and percent solids on

. . 4

three occasions during the mill operations. Volumes of effluent discharged to Goldpan Lake and supernatant recycled to the mill should be recorded.

2. The outlet of Goldpan Lake should be sampled monthly for pH, alkalinity/acidity, sulfate, total and dissolved metals (Cu, Fe, Pb, Zn). Monthly lake discharge sampling should commence immediately and extend until one month after mill shutdown. The sampling program should continue on a quarterly basis for one year thereafter.

3. Results should be reported within ten days of sampling. Additional sampling such as a bioassay analysis may be required based on the results. A report on the pilot mill operation, including a summary of all data, should be completed within sixty days of completion of the campaign.

We further recommend that cyanide and mercury be specified as not approved reagents for this operation.

Although we anticipate no objections to the proposed effluent discharge once the requested pre-operational data is provided, we recommend withholding issuance of a permit until these information requirements are met.

Our comments on this application do not imply Environment Canada's or the Department of Fisheries and Oceans' approval for subsequent full-scale operation. We expect an opportunity to comment further if the project proceeds to full-scale development. In this regard, the 10 000-tonne bulk sample mining program will provide the Company with an opportunity to obtain valuable data in support of a possible full-scale proposal.

Although we expect our recommendations will be reflected in the Permit, we would appreciate the opportunity to discuss any proposed variances with you as our response has been developed within the context of requirements to protect the fishery resource pursuant to the Fisheries Act and responsibilities pursuant to the International Boundary Waters Treaty. Ms. Lisa Cox may be contacted at 666-3487.

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DRAFT COPY ONLY

Mr. T. Roberts
WMB Smithers
AE-7980

Thank you for giving us the opportunity to comment on this application. Your continued cooperation is appreciated.

Yours truly,

M. Ito, P.Eng.
Chief, Environmental Protection Branch
Pacific and Yukon Region

cc: D. Rowse - DFO, Prince Rupert
O. Langer - DFO, New Wesminster
W. Knapp - DFO, Vancouver
A. Von Finster - DFO, Whitehorse
D. Bernard - IW/L, Vancouver

E. Kruchkowski, Catear Resources Ltd. (Certified Mail)
J. Gregory, Rescan Environmental Services Ltd.

References

1. B.C. Research, October 8, 1987. Letter to Catear Resources Limited.

2. Errington, Dr. J.C., and K.D. Ferguson, 1987, Acid Mine Drainage in British Columbia, Today and Tomorrow. Proceedings of Acid Mine Drainage Seminar/Workshop, Halifax, Nova Scotia, March 23-26, 1987. Environment Canada.

MINISTRY OF ENVIRONMENT

WASTE MANAGEMENT BRANCH

File No. AE-7980

CALL FORM

Date of Call JAN 20, 1988

Calling Party JENNIFER GREGORY Telephone No. 689-9460

Address of Caller RESCAN ENV. SERVICES VAN.

Nature of Call J.G called re: Cateo.

1) 20 men in camp for ~~mill~~ mill construction and for mill operation during 10,000 tonne bulk sample.

2) camp has a septic tank (size unknown - Ed Kwitchkowski) which discharges to ground.

3) she did not know if there was an incinerator on site.
I said that an auxiliary fuel, forced air manufactured unit was required by WMB regulation + that no permit is required if regulations are met.

Received by ~~Referred to~~

Follow-up

4) I asked her to think about TSS for AE 7980 discharge + pt. of compliance (Bruejack Lake vs Cateo Creek) + implications w/ re: to Newhawk.

(Signed) J. Hofweber

ENV. 2100 cc

Province of British Columbia

Ministry of Environment & Parks

Bag 5000
Smithers B.C
V0J 2N0

REFERRAL REPLY FORM

December 15, 1987

To:
Waste Management Branch
Bag 5000
Smithers, B.C.
V0J 2N0

ATTENTION: E. Elliott

Our File: 77.07

Your File: AE-7927/AE-7980

Referral No: 965/999

Re: _____ DATED: December 09, 1987

Applicant:

The above described referral has been examined by:

- [x] Habitat Protection (Fish + Wildlife)
- [x] Water Management
- [ ] Waste Management

MINISTRY RESPONSE:

The Ministry of Environment and Parks has no objections to the above application.

Designated Signatory G L Wolfe

(Print) Gordon Wolfe

SEE-MOORE PRINT, SMITHER

Province of British Columbia

MEMORANDUM

To: Ministry of Environment
Bag 5000
Smithers, BC
V0J 2N0

Date: 1988 01 15

ATTENTION: JIM HOFWEBER

RE: APPLICATION BY CATEAR RESOURCES LTD.
YOUR FILE: AE - 7980

Thank you for the opportunity to review this application.

We object to the approval of this application because of information received that water from Brucejack Lake is being used as a drinking water source by Newhawk Mines downstream and that the quality of the effluent does not meet the BC Drinking Water Quality Standards. Our objection will remain until the Newhawk drinking water supply can be shown to meet the BC Standards.

We also need further information regarding the proposed method of sewage disposal and proposed water source for the Catear site, as well as the tailings disposal for Newhawk Gold Mines.

If you can supply any of this information or have any questions, please do not hesitate to contact me at 638-3474.

Saskia van Beynum

Saskia van Beynum, C.P.H.I.(C)
Public Health Inspector
Skeena Health Unit #16

SvB/dio

cc Catear Resources Ltd.

(OP 331C)

Province of British Columbia

Ministry of Environment
WASTE MANAGEMENT BRANCH

MEMORANDUM

To: Bag 5000, Smithers, B.C. V0J 2N0

Date: December 9, 1987

Ministry of Environment and Parks
Waste Management Branch
Victoria, B.C.

Our File: AE-7980

Attention: Central Registry

Re: Application for a Waste Management Permit (Amendment)
on behalf of Catear Resources Ltd.
dated November 25, 1987

In connection with the above application, the following items are attached:

	X	Application Work Form
	X	Application
	X	Site Plan
To Follow	X	Product Capacity Information Form

E. Elliott
Expeditor

Encl.

Your File: 7980

Our File: AE-78980

To:- Regional Waste Manager
Ministry of Environment & Parks
Bag 5000
Smithers, B.C.
V0J 2N0

Re:- Application Pursuant to Waste Management Act on behalf of
CATEAR RESOURCES LTD.
dated November 25, 1987

We have reviewed the subject application to discharge _____
_____ to _____

✓ We have no comment.

___ We have concerns as follows:

___ The following would satisfy our concerns.

Yours truly,

MEMPR

258, Group 2, NWD, lying to the north and east of that part of District Lot 258 subdivided by Plan 17277.

The rate of discharge will be as follows: Maximum daily, 1 364 cubic metres per day. Average daily (based on operating period), 1 400 cubic metres per day.

The operating period during which the effluent will be discharged is (1) continuous and (2) May 1 to November 15 (80 hours per week) November to April (maximum of 80 hours per week depending upon production) — no discharge when soil snow covered or frozen.

The characteristics of the effluent discharged shall be equivalent to or better than the uncontaminated cooling water with a maximum temperature of 32°C to Chilliwack Creek and typical process water from processing operation to land.

The type of treatment to be applied is (2) screening and spray irrigation onto company-owned agricultural land.

A copy of this application was posted at the site in accordance with the Waste Management Regulations. November 12, 1987. — S. A. Black, *Agent*. [de17 — 43211]

WASTE MANAGEMENT APPLICATION

This application is to be filed with the Regional Waste Manager, 15326 — 103 A Avenue, Surrey, B.C. V3R 7A2.

Any person who may be adversely affected by the discharge or storage of the waste may, within 30 days from the last date of posting under section 3 (a) or publication, service or display under section 4, write to the Manager stating how he is affected.

Preamble — The purpose of this application is to allow the dumping of nonburnable waste from Whonnock Industries Limited dryland log-sorting grounds at Hope and the dumping of the ashes from Fill Site 1 to a new location.

Whonnock Industries Limited, Box 970, Hope, B.C. V0X 1L0, hereby applies for amendments as described below to Permit PR-6639 granted on August 30, 1983, last amended August 22, 1986, which authorizes the discharge of refuse from a dryland log-sorting operating located at Hope, B.C., to the land.

AMENDMENTS REQUESTED

The alternate fill site requested on January 22, 1987, has been rejected. We are now requesting another alternate fill site per attached map.

Legal description of new site: Lot A, Plan 31084, Section 5, Township 5, Range 26, W6M, Land District 59, Yale Division of Yale District.

Address of new site: 63235 Trans-Canada Highway, Hope, B.C.

Discharge rate is annual average of 9 cubic metres per day.

A copy of this application was posted at the site in accordance with the Waste Management Regulations on November 4, 1987. November 2, 1987. — Whonnock Industries Limited. [de17 — 43211]

WASTE MANAGEMENT APPLICATION

This application is to be filed with the Regional Waste Manager, 3726 Alfred Avenue (Bag 5000), Smithers, B.C. V0J 2N0.

Any person who may be adversely affected by the discharge or storage of the waste may, within 30 days from the last date of posting under section 3 (a) or publication, service or display under section 4, write to the Manager stating how he is affected.

Preamble — The purpose of this application is to obtain a permit to authorize the discharge of effluent from a gold mine/mill complex, resulting from the processing of a 10 000-tonne bulk sample.

Catear Resources Ltd., 3000, 595 Burrard Street (Box 49052), Vancouver, B.C. V7X 1R3, hereby applies for a permit to discharge effluent from a gold mine and mill, with recycle of water from Goldpan Lake, located at Brucejack Lake, approximately 56 kilometres northwest of Stewart, B.C., to Goldpan Lake; thence to Catear Creek; thence to Brucejack Lake; thence to Sulphurets Creek; thence to the Unuk River, and gives notice of application to all persons affected.

The land upon which the treatment works will be located is Goldwedge Mineral Claim, Record 2430 and Lot 3357, Cassiar Land District, Skeena Mining Division.

The discharge will be located at Goldwedge Mineral Claim, Record 2430 and Lot 3357, Cassiar Land District, Skeena Mining Division.

The rate of discharge will be as follows: Maximum daily — to Goldpan Lake, 430 cubic metres per day; to Catear Creek, 6 546 cubic metres per day.

The operating period during which the effluent will be discharged is continuous.

The characteristics of the effluent discharged shall be equivalent to or better than the following: To Goldpan Lake: typical tailings from a gold mill employing gravity separation only with no flotation, no cyanide or thiourea leach circuit. To Catear Creek (from Goldpan Lake): pH range, 6.5–8.5; dis. Al, 0.50 mg/L; dis. Cd, 0.01 mg/L; dis. Cr, 0.05 mg/L; dis. Cu, 0.05 mg/L; dis. Fe, 0.30 mg/L; dis. Pb, 0.05 mg/L; dis. Sb, 0.25 mg/L; dis. Zn, 0.20 mg/L; dis. As, 0.50 mg/L.

The type of treatment to be applied is none.

A copy of this application was posted at the site in accordance with the Waste Management Regulations. November 25, 1987. — Catear Resources Ltd. [de17 — 43211]

MINISTRY OF FINANCE AND CORPORATE RELATIONS

AMALGAMATION

I hereby certify that Howalt Holdings Ltd., which was amalgamated on the 31st day of March 1982 under Certificate 250319, and 301469 British Columbia Ltd., which was incorporated on the 6th day of December 1985 under Certificate 301469, are this day amalgamated, pursuant to the *Company Act*, as one company with the name **Howalt Holdings Ltd.** (336994).

Given under my hand and seal of office at Victoria, B.C., this 30th day of November 1987. — Roberta J. Lowdon, *Deputy Registrar of Companies*. [de17 — 43206]

AMALGAMATION

I hereby certify that N.W. Holdings Ltd., which was incorporated on the 19th day of February 1963 under Certificate 55834, and S. & M. Investments Ltd., which was incorporated on the 17th day of March 1967 under Certificate 73408, are this day amalgamated, pursuant to the *Company Act*, as one company with the name **S. & M. Investments Ltd.** (336960).

Given under my hand and seal of office at Victoria, B.C., this 30th day of November 1987. — Roberta J. Lowdon, *Deputy Registrar of Companies*. [de17 — 43206]

AMALGAMATION

I hereby certify that Aviva Resources Incorporated, which was incorporated on the 20th day of February 1981 under Certificate 227391, and VSC Speech Technology Inc., which was incorporated under the laws of Canada on the 25th day of October 1985 and granted a certificate of continuation under the British Columbia *Company Act*, on the 24th day of July 1987 under Certificate 330784C, are this day amalgamated, pursuant to the *Company Act*, as one company with the name **VSC Technology Inc.** (336726).

Given under my hand and seal of office at Victoria, B.C., this 25th day of November 1987. — B. Beckwith, *Assistant Deputy Registrar of Companies*. [de17 — 43206]

AMALGAMATION

I hereby certify that a certificate of amalgamation dated the 29th day of December 1986, with articles of amalgamation and amalgamation agreement attached thereto dated the same date, made between General Chemical Canada Ltd. Les Produits Chimiques General du Canada Ltee, a Federal corporation duly registered as an extraprovincial company under the laws of the Province of British Columbia under Certificate A-20422, and General Chemical Inc., a Federal corporation not registered in British Columbia, has this day been filed and pursuant thereto the amalgamated company is registered under the name **General Chemical Canada Ltd./Les Produits Chimiques General du Canada Ltee** (A-26853).

The business that the corporation will carry on in British Columbia is: Producing chemicals and electrical wiring products.

Given under my hand and seal of office at Victoria, B.C., this 27th day of November 1987. — Roberta J. Lowdon, *Deputy Registrar of Companies*. [de17 — 43206]

AMALGAMATION

I hereby certify that a certificate of amalgamation dated the 1st day of February 1986, with articles of amalgamation at-

NAME: CATEAR RESOURCES LTD.

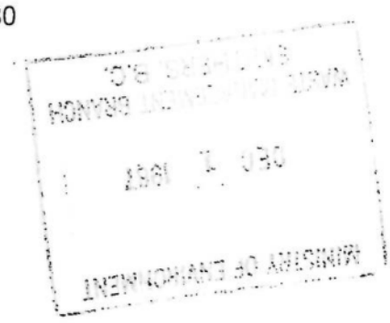
FILE NO. AE-7980

Discharge from: gold mine/mill complex

TYPE:	MI	MAP NUMBER	10489
INDUSTRY CODE:	05		
AREA	Brucejack Lake	DATE RECEIVED	Nov. 16/87
DATE ASSIGNED	87/12/02	S.I. ASSIGNED TO	HOF/MCK
DATE DUE S.I.		RESUME ASSIGNED TO	HOF
DATE DUE RESUME	88/02/28	DATE MAILED	

FOR PERMIT APPLICATIONS

AE-7980



Ministry of Environment
Waste Management Branch
Bag 5000
SMITHERS, B.C.
V0J 2N0

Gentlemen:-

In making an application for a Waste Management Permit, the undersigned authorizes the Waste Management Branch to act on his behalf with respect to Section 4(2) of the Waste Management Regulations.

It is understood that while there is no charge for this service, the applicant is responsible for all reasonable expenses incurred in publishing the application in local newspapers and these costs will be billed directly by the publisher.

Name: Edward R. Kruchkowski

Address: Catear Resources Ltd.

Suite 400, 255 - 17th Ave. s.w.

Calgary, Alberta T2S 2T8

(Signature of applicant or agent)

Telephone: (403) 228-6761

Province of British Columbia

Ministry of Environment

WASTE MANAGEMENT BRANCH

MINISTRY OF ENVIRONMENT
WASTE MANAGEMENT BRANCH
SMITHERS, B.C.

Waste Management File No. NE-7786

APPLICATION FOR A PERMIT UNDER THE PROVISIONS OF THE WASTE MANAGEMENT ACT
(Effluent)

THIS APPLICATION is to be filed with the Regional Waste Manager at 3726 Alfred Avenue, Bag 5000 Smithers (Regional Office address), British Columbia V0J 2N0 (Postal Code)

"any person who may be adversely affected by the discharge or storage of the waste may within 30 days from the last date of posting under section 3 (a) or publication, service or display under section 4, write to the manager stating how he is affected."

PREAMBLE — The purpose of this application is to authorize the discharge of effluent from a gold mine/mill complex, resulting from the processing of a 10,000 tonne bulk sample.

1. I/We Catear Resources Ltd. (Full name, or if a company, British Columbia registered name)

of 3000 - 595 Burrard Street, Box 49052, Vancouver, B.C. V7X 1R3 (Address, or if a company, British Columbia registered address)

hereby apply for a permit to discharge effluent from gold mine and mill, with recycle of water from Goldpan Lake. (Type of operation causing effluent)

located at Brucejack Lake, approximately 56 km northwest of Stewart, B.C. (General location)

to Goldpan Lake thence to Catear Creek thence to Brucejack Lake thence to Sulphurets Creek thence to the Unuk River. (Name of creek, river, lake, bay, inlet or to land)

and give notice of application to all persons affected.

2. The land upon which the treatment works will be located is Goldwedge Mineral Claim, Record No.2430 and Lot 3357, Cassiar Land District, Skeena Mining Division. (Give legal description)

3. The discharge will be located at Goldwedge Mineral Claim, Record No.2430 and Lot 3357, Cassiar Land District, Skeena Mining Division. (Give legal description if different from the above)

4. The rate of discharge will be:

Maximum daily to Goldpan Lake: $430 m^3/d$ (Cubic metres/day)

~~Average daily (based on operating period)~~ to Catear Creek: $6546 m^3/d$ (Cubic metres/day)

The operating period during which the effluent will be discharged is continuous (Hours/day, days/week, or date to date)

5. The characteristics of the effluent discharged shall be equivalent to or better than [insert values after completion of column (2) of table (a) on reverse side].

To Goldpan Lake: typical tailings from a gold mill employing gravity separation only with no flotation, no cyanide or thiourea leach circuit.

To Catear Creek (from Goldpan Lake):

pH range	6.5-8.5
dis. Al	0.50 mg/L
~~dis. Cd~~	~~0.01 mg/L~~
dis. Cr	0.05 mg/L
~~dis. Cu~~	~~0.05 mg/L~~
dis. Fe	0.30 mg/L
dis. Pb	0.05 mg/L
~~dis. Sb~~	~~0.25 mg/L~~
dis. Zn	0.20 mg/L
dis. As	0.50 mg/L

need to C

6. The type of treatment to be applied is none

7. Dated this 25 day of NOV, 19[illegible]

Edward R. Krudwagh (PRINT name of applicant or agent)

(Signature of applicant or agent)

Telephone No. (403) 228-4716

A copy of this application was posted at the site in accordance with the Waste Management Regulations on (Date)

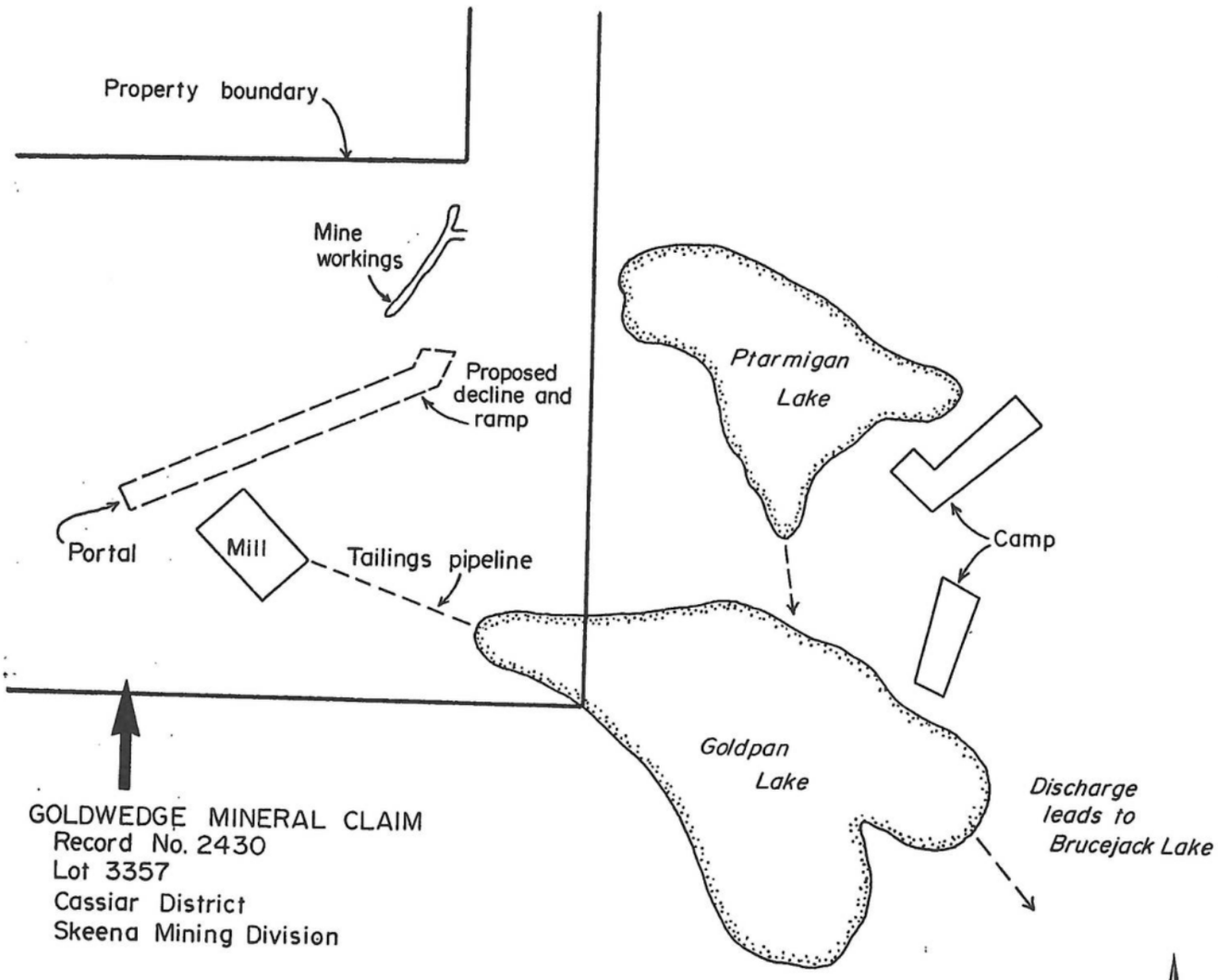
ENV 1985 cc

Province of British Columbia

Ministry of Environment

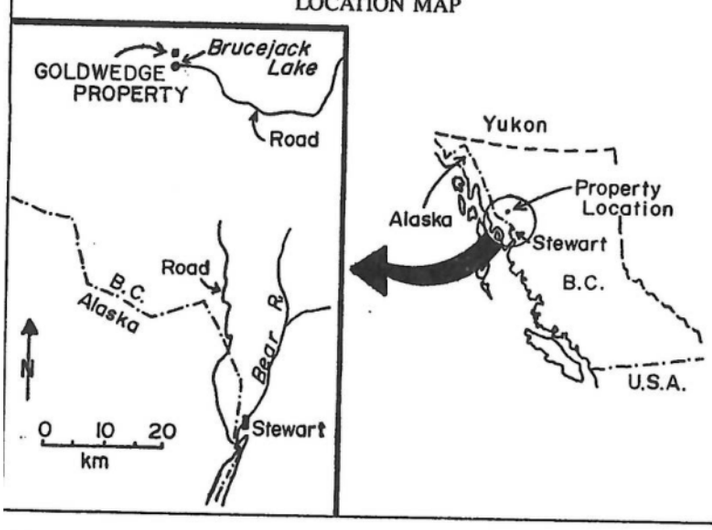
WASTE MANAGEMENT BRANCH

SITE PLAN



GOLDWEDGE MINERAL CLAIM
Record No. 2430
Lot 3357
Cassiar District
Skeena Mining Division

LOCATION MAP



Edward Kruchkowski
(Name of applicant(s))

NOV 25/87
(Date)

(Signature of applicant(s) or agent)

(FOR OFFICE USE ONLY)

Date Issued

Date Amended

Appendix..... to Permit No. .....

Approval No. .....

ENV 1987

Province of British Columbia

Ministry of Environment
WASTE MANAGEMENT BRANCH

MEMORANDUM

To: Bag 5000, Smithers, B.C. V0J 2N0

Date: December 9, 1987

Ministry of Environment and Parks
Waste Management Branch
Victoria, B.C.

Our File: AE-7980

Attention: Central Registry

Re: Application for a Waste Management Permit (Amendment)
on behalf of Catear Resources Ltd.
dated November 25, 1987

In connection with the above application, the following items are attached:

X Application Work Form

X Application

X Site Plan

X Product Capacity Information Form

E. Elliott

E. Elliott
Expeditor

Encl.

Province of British Columbia

Ministry of Environment
WASTE MANAGEMENT BRANCH

MEMORANDUM

Bag 5000, Smithers, B.C. V0J 2N0

To:

Date: December 9, 1987

___ Water Management Branch

Our File: AE-7980

_X_ Fish & Wildlife Branch - Smithers

___ Ministry of Agriculture & Fisheries,
Aquaculture & Commercial Fisheries Branch
Shellfish Unit, 808 Douglas St., Victoria, V8W 2Z7

___ Ministry of Agriculture & Fisheries - Smithers

_X_ Water Management Branch - Smithers

___ Waste Management Branch -
Air Emissions Management 810 Blanshard St.,
Victoria

_X_ Chief Inspector of Mines - Smithers

___ J.D.C. Fuller, Assistant Director Engineering
Water Management Branch, 765 Broughton St.,
Victoria

___ Ministry of Forests -

Re:- Application Pursuant to Waste Management Act
on behalf of Catear Resources Ltd.
dated November 25, 1987

It is our intention to dispose of this application as expeditiously as possible. Accordingly, if you wish to comment or make recommendations with respect to this application, you are required by the Waste Management Act to do so within 30 days of the date of this memorandum. Should you require additional time, it will be necessary for you to contact the undersigned and additional time may be given if the circumstances warrant it.

A questionnaire which may be used at your option for reply is enclosed.

E. Elliott
Expeditor

Encl.

Province of
British Columbia

Ministry of
Environment
& Parks

Waste Management
Northern Region
Bag 5000
Smithers, B.C.
V0J 2N0
Telephone: (604) 847-7260

December 9, 1987

File: AE-7980

Mr. B.A. Heskin, P. Eng.
Regional Director
Pacific Region & Yukon
Environmental Protection
Conservation & Protection
Environment Canada
3rd Floor, Kapilano 100, Park Royal
WEST VANCOUVER, B.C.
V7T 1A2

Dear Mr. Heskin:-

Re:- Application Pursuant to Waste Management Act
on behalf of Catear Resources Ltd.
dated November 25, 1987

It is our intention to dispose of this application as expeditiously as possible. All agencies contributing information in the form of technical data or recommendations with respect to the effect this application will have on their areas of interest, are being required to do so within thirty days (taken from the date of this letter).

If you should require more time in which to make comments or recommendations, please contact the undersigned and more time may be granted if warranted by the circumstances.

Yours truly,

E. Elliott

E. Elliott
Expeditor

Encl.

Province of
British Columbia

Ministry of
Environment
& Parks

Waste Management
Northern Region
Bag 5000
Smithers, B.C.
V0J 2N0
Telephone: (604) 847-7260

December 9, 1987

File: AE-7980

DOUBLE REGISTERED

Regional District of
Kitimat-Stikine
9 - 4644 Lazelle Avenue
TERRACE, B.C.
V8G 1S6

Dear Sir:-

Re:- Application Pursuant to Waste Management Act on behalf of Catear Resources Ltd.
dated November 25, 1987

We enclose for the information of your Board, a copy of the above referenced application for a Permit under the provisions of the Waste Management Act.

Yours truly,

L. Williamson
Expeditor

Encl.

Province of British Columbia

Ministry of Environment
WASTE MANAGEMENT BRANCH

MEMORANDUM

Bag 5000, Smithers, B. C. V0J 2N0

To:

Date: December 9, 1987

Medical Health Officer
Skeena Health Unit
#33 - 3412 Kalum Street
TERRACE, B.C.
V8G 2M9

Our File: AE-7980

SUBJECT: Application Pursuant to Waste Management Act
by Catear Resources Ltd.
dated November 25, 1987

The subject application is being processed in the Waste Management Branch office located at 3726 Alfred Avenue, Smithers, B.C.

Our staff contact for this particular application is Jim Hofweber whose telephone number is 847-7551.

It is our intention to dispose of this matter as expeditiously as possible, and should you wish to comment or make recommendations with respect to this application, you are required to do so within 30 days from the date of this notice. In the event that you require additional time to consider the matter, the individual named above should be contacted prior to the expiry of the 30 day period and additional time may be allowed if warranted by the circumstances.

E. Elliott

E. Elliott
Expeditor

Encl.

Province of British Columbia

Ministry of Environment & Parks

Waste Management
Northern Region
Bag 5000
Smithers, B.C.
V0J 2N0
Telephone: (604) 847-7260

December 3, 1987 File: AE-7980

Sentinel Newspaper
126 Granduc Site
STEWART, B.C.
V0T 1W0

Dear Sirs:

Please publish the attached application for a Waste Management Permit, in the next issue of your newspaper.

The appropriate location is in the legal notices section of your classified advertisements, and should be one column in width and in a type size and face consistent with your other classified ads.

Proof of publication, the full page on which the advertisement appeared (tear sheet), is to be sent IMMEDIATELY after **publication to the Waste Management Branch at the address shown on this letterhead.**

The costs of advertising are to be invoiced directly to the applicant, whose name and address is as follows:-

Catear Resources Ltd.
3000 - 595 Burrard Street
Box 49052
Vancouver, B. C.
V7X 1R3

If you have any questions, please contact the undersigned.

Yours truly,

E. Elliott
Expeditor

847-7280
Encl.

Province of British Columbia

Ministry of Environment
WASTE MANAGEMENT BRANCH

MEMORANDUM

Bag 5000, Smithers, B.C. V0J 2N0

To:

Date: December 9, 1987

Queen's Printer
541 Superior Street
VICTORIA, B.C.
V8V 4R6

File: AE-7980

SUBJECT: APPLICATION UNDER WASTE MANAGEMENT ACT

Please publish the attached application (Waste Management Branch File No: AE-7980) in the next addition of the B.C. Gazette - Part 1, and charge to the appropriate requistion number for the Waste Management Branch.

E. Elliott
Expeditor

847-7280
Encl.

Rescan Environmental
Services Ltd.

Refer to File no

Suite 3700 Coopers & Lybrand Building
1111 West Hastings Street
Vancouver, B.C. V6E 2J3
Tel: (604) 689-9460
Fax: (604) 687-4277

November 9, 1987

Ministry of Environment
Waste Management Branch
3726 Alfred Avenue
Smithers, B.C.
V0J 2N0

Attention: **Jim Hofweber, P.Eng.**
Waste Management Officer

Dear Sir,

Re: Application for a Permit Authorizing an Effluent Discharge
Pilot Mill Proposal for Catear Resources' Goldwedge Property

Enclosed please find two copies of an application for a permit authorizing discharge of tailings from the processing of a 10,000 tonne bulk sample at Catear Resources Goldwedge Property.

The tailings are to be discharged into Goldpan Lake, as shown on the site plan, with recycle of water back to the mill. A water license application for the lake is being processed at the present time and Water Management will be issuing Catear a letter authorizing the use of this water for re-circulation purposes until that time when the processing of the water license is complete. Five representative samples of waste rock have been submitted to Chemex Labs for acid generation tests; results will be submitted to you as they become available.

Catear Resources is eager to commence with their pilot mill, and as such, would like to have this permit application processed and approved in as little time as possible. If I can be of any assistance, please do not hesitate to call me at the above number.

We appreciate your prompt attention to this application.

Yours very truly,

RESCAN ENVIRONMENTAL SERVICES LTD.
per:

Jennifer Gregory

Jennifer C. Gregory
Environmental Engineer

Encl.

cc: Catear Resources Ltd.

Vol. 8 Sec. 1 Subsec. 01.01 Appendix 3

PRODUCTION CAPACITY INFORMATION

MUST BE COMPLETED FOR ALL PERMIT APPLICATIONS
(see reverse side of form for production capacity units)

Industry Type Gold mine

Industry Code 0611

Production Capacity 98 tpd

Note: Production capacity must be reported in the units listed on the reverse for your Industry Type.

NOV 25/87
(date of signature)

Edward R. Kruchkowski
(print name of applicant or agent) (signature of applicant or agent)
President, Catear Resources Ltd.

*CAPACITY means design production or processing capacity of the works, in the units indicated for that industry, unless otherwise specified.

SEP 1 1987

File:

To: The Regional Waste Manager
at

Application Pursuant to Waste Management Act on behalf of Catear Resources Ltd.
dated _____

I/we hereby authorize Rescan Environmental Services Ltd.
to deal with you directly on all aspects of the subject Application.

AUG 26/87
(Date)

(Signature of applicant)
Edward Kruchkowski, President
Catear Resources Ltd.

SEP 1 1987

Province of British Columbia

Ministry of Environment

WASTE [illegible] MENT BRANCH

Waste Management File No. AE - 7980

APPLICATION FOR A PERMIT UNDER THE PROVISIONS OF THE WASTE MANAGEMENT ACT
(Effluent)

THIS APPLICATION is to be filed with the Regional Waste Manager at 3726 Alfred Avenue, Bag 5000 Smithers (Regional Office address), British Columbia V0J 2N0 (Postal Code)

"any person who may be adversely affected by the discharge or storage of the waste may within 30 days from the last date of posting under section 3 (a) or publication, service or display under section 4, write to the manager stating how he is affected."

PREAMBLE — The purpose of this application is to authorize the discharge of effluent from a gold mine/mill complex, resulting from the processing of a 10,000 tonne bulk sample.

1. I/We Catear Resources Ltd. (Full name, or if a company, British Columbia registered name)
of 3000 - 595 Burrard Street, Box 49052, Vancouver, B.C. V7X 1R3 (Address, or if a company, British Columbia registered address)
hereby apply for a permit to discharge effluent from gold mine and mill, with recycle of water from Goldpan Lake. (Type of operation causing effluent)
located at Brucejack Lake, approximately 56 km northwest of Stewart, B.C. (General location)
to Goldpan Lake thence to Catear Creek thence to Brucejack Lake thence to Sulphurets Creek thence to the Unuk River. (Name of creek, river, lake, bay, inlet or to land)
and give notice of application to all persons affected.

2. The land upon which the treatment works will be located is Goldwedge Mineral Claim, Record No.2430 and Lot 3357, Cassiar Land District, Skeena Mining Division. (Give legal description)

3. The discharge will be located at Goldwedge Mineral Claim, Record No.2430 and Lot 3357, Cassiar Land District, Skeena Mining Division. (Give legal description if different from the above)

4. The rate of discharge will be:
Maximum daily [illegible] to Goldpan Lake: 430m3/d (Cubic metres/day)
~~Average daily (based on operating period)~~ to Catear Creek: 6546 m3/d (Cubic metres/day)
The operating period during which the effluent will be discharged is continuous (Hours/day, days/week, or date to date)

5. The characteristics of the effluent discharged shall be equivalent to or better than [insert values after completion of column (2) of table (a) on reverse side].
To Goldpan Lake: typical tailings from a gold mill employing gravity separation only with no flotation, no cyanide or thiourea leach circuit.
To Catear Creek (from Goldpan Lake):

pH range	6.5-8.5
dis. Al	0.50 mg/L
~~dis. Cd~~	~~0.01 mg/L~~
dis. Cr	0.05 mg/L
~~dis. Cu~~	~~0.05 mg/L~~
dis. Fe	0.30 mg/L
dis. Pb	0.05 mg/L
~~dis. Sb~~	~~0.25 mg/L~~
dis. Zn	0.20 mg/L
dis. As	0.50 mg/L

6. The type of treatment to be applied is none

7. Dated this 12 day of NOV, 1987

Edward R. Krukowski (PRINT name of applicant or agent)

[signature] (Signature of applicant or agent)

Telephone No. (403) 292-7761

A copy of this application was posted at the site in accordance with the Waste Management Regulations on NOV 15/87 (Date)

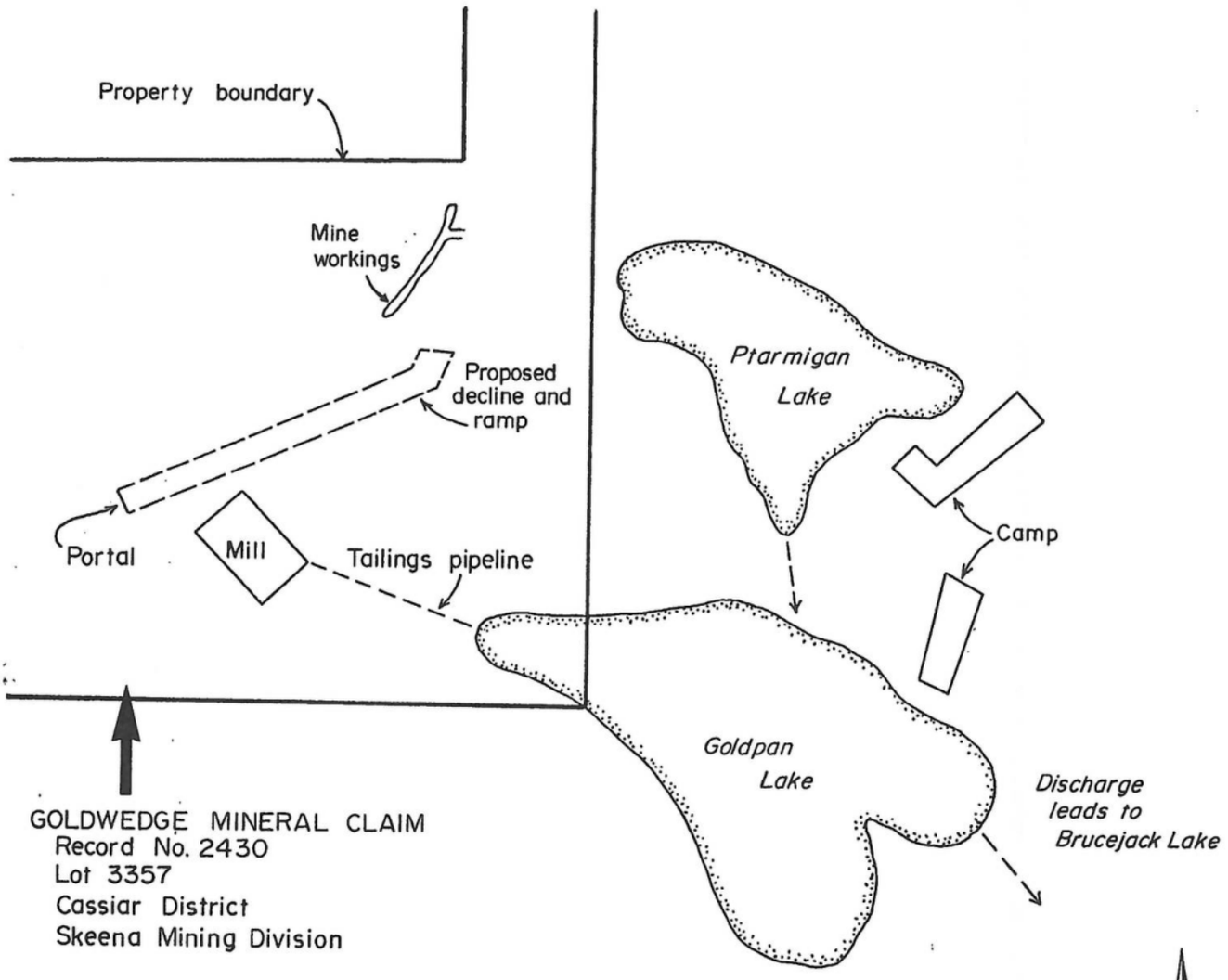
ENV 1985 cc

Province of British Columbia

Ministry of Environment

WASTE MANAGEMENT BRANCH

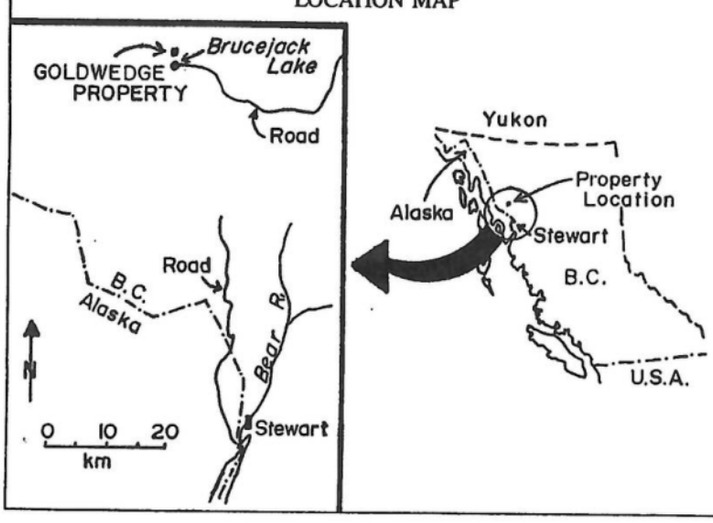
SITE PLAN



GOLDWEDGE MINERAL CLAIM
Record No. 2430
Lot 3357
Cassiar District
Skeena Mining Division

Scale 1:2,000

LOCATION MAP



Edward Kruchkowski
(Name of applicant(s))

Nov 12/87
(Date)

(Signature of applicant(s) or agent)

(FOR OFFICE USE ONLY)

Date Issued

Date Amended

Appendix..... to Permit No. .....

Approval No. .....

ENV 1987

PRODUCTION CAPACITY INFORMATION

MUST BE COMPLETED FOR ALL PERMIT APPLICATIONS
(see reverse side of form for production capacity units)

Industry Type Gold mine

Industry Code 0611

Production Capacity 98 tpd

Note: Production capacity must be reported in the units listed on the reverse for your Industry Type.

NOV 12/87
(date of signature)

Edward R. Kruchkowski
(print name of applicant or agent)
President, Catear Resources Ltd.

(signature of applicant or agent)

*CAPACITY means design production or processing capacity of the works, in the units indicated for that industry, unless otherwise specified.

File:

To: The Regional Waste Manager
at

Application Pursuant to Waste Management Act on behalf of Catear Resources Ltd.
dated _____

I/we hereby authorize Rescan Environmental Services Ltd. to deal with you directly on all aspects of the subject Application.

_____
(Date)

_____
(Signature of applicant)
Edward Kruchkowski, President
Catear Resources Ltd.

SE