24606

OKANAGAN OPAL INC.

KLINKER PROPERTY

TECHNICAL REPORT ON THE PROPERTY
EXPLORATION & DEVELOPMENT
AND
PRELIMINARY PRODUCT & PROPERTY EVALUATION

1994 PROGRAM

KLINKER & EWER MINERAL CLAIMS
NTS 82L/5E
Lat. 50° 22' N, Long. 119° 34' W
VERNON MINING DIVISION,
PROVINCE OF BRITISH COLUMBIA

- for -
OKANAGAN OPAL INC.,
P.O. BOX 298,
VERNON, B. C.

- by -
R. W. YORKE-HARDY, A.Sc.T.
Y-H. TECHNICAL SERVICES LTD.

Dates of Work : May 24, 1994 to Feb. 20, 1995

Date of Report Completion: February 20, 1995

24,606

GEOLOGICAL SURVEY BRANCH
ASSESSMENT REPORT

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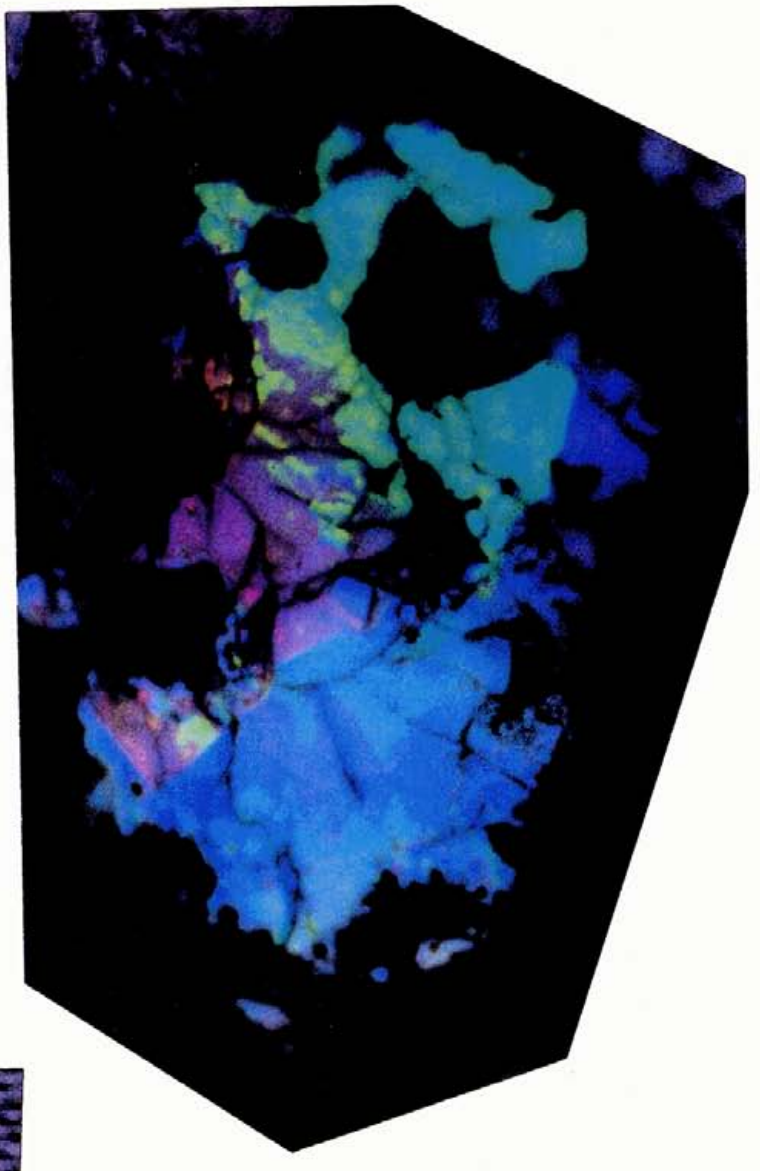
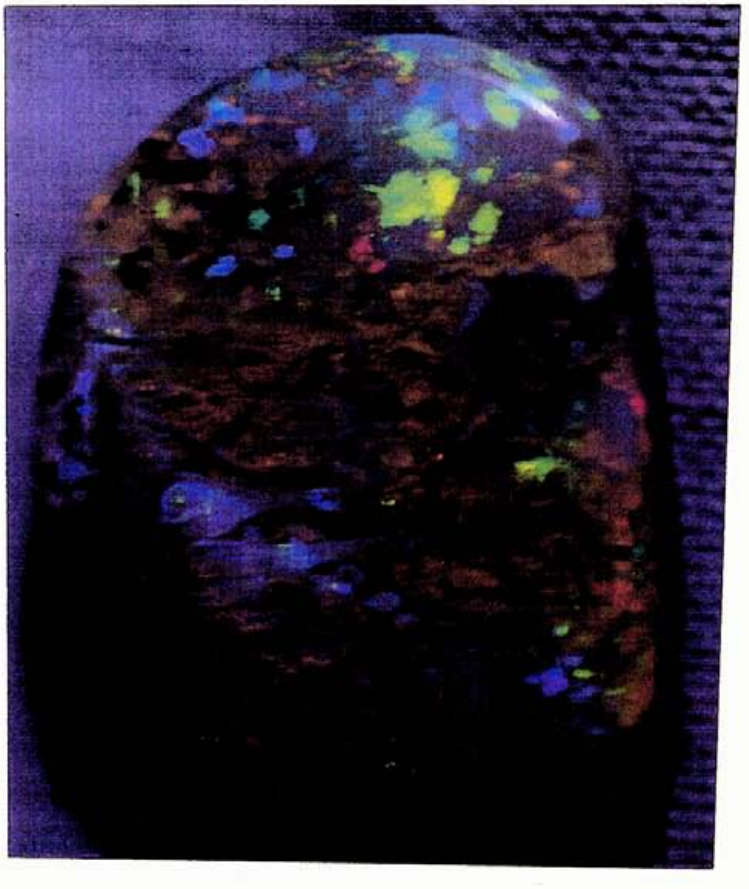


EXAMPLE OF DISCOVERY PIT OPAL
DESCRIPTION: -
OPAL TYPE: VEIN BOULDER OPAL
BASE COLOR: WHITE
COLOR DESC: BLUE/GREEN MULTI-COLOR
PATTERN: BROAD FLASH
BRIGHTNESS: 4.5



EXAMPLE OF BLUEBIRD PIT OPAL
DESCRIPTION: -
OPAL TYPE: MATRIX BOULDER OPAL
BASE COLOR: YELLOW
COLOR DESC: GREEN/BLUE MULTI-COLOR
PATTERN: FLASH
BRIGHTNESS: 4.0

Introduction:

This report is prepared as an internal private report for the Okanagan Opal Inc. and is intended solely for the Company's use. Two copies are to be submitted to the British Columbia Ministry of Mines as required to support the grant awarded under the 1994 Mineral Incentive Program. No other distribution of this is authorized and the contents are to be considered Private and Confidential.

During the 1994 exploration season a program consisting of prospecting, geological mapping, physical work and bulk sampling was conducted. This program was successful in significantly expanding the known limits of the Company's "precious opal" deposit. In addition, the central two mineral claims, the Klinker 1 and 2, were legally surveyed in order to prepare these two claims for "Lease Application" and "Small Scale Production Permit Application" in 1995. Locations of some of the adjacent Ewer claim posts were also surveyed in order to define property limits around the central Klinker claims.

Preliminary results from the 1994 program suggests that opal production should be sustainable for many years. To date there are approximately two million tons of rock inferred within the defined area of interest. Of this volume it is projected that 5% to 10%, or 100,000 to 200,000 tons of rock, will be precious opal bearing. Further work is required to prove these tonnages and to determine the full economic value of the deposit based on the "precious opal" content.

Albeit that the full scale and economic potential of the property remains to be determined, there was enough volume of commercial grade opal excavated during the 1994 season's bulk sampling program to provide the raw material necessary to commence a small scale gemstone cutting and retail sales business. Sorting, grading and cutting of finished gemstones commenced on a limited scale in November 1994 and continued through to late December 1994. This program re-commenced in January 1, 1995 and is scheduled to produce sufficient quality and quantity of finished "opal product" to commence a local retail sales operation by May 1, 1995; in time for the commencement of the 1995 tourist season. There is presently enough opal exposed on site to support a small scale mining/gem cutting/retail sales operation for several years.

The Company's main focus is to develop a business centred around the marketing of locally mined and crafted opal jewellery by first targeting the large number of tourists visiting North Okanagan Region of British Columbia. As production levels increase the market base will be expanded to other "tourist centres" throughout British Columbia and across Canada prior to marketing Internationally. It is not expected that "rough stone" will be sold until after internal needs are met.

The Klinker Property is the first location in British Columbia, or in Canada; to yield commercial grade, precious opal gemstone material. Okanagan Opal Inc. is the first Canadian company to produce commercial grade, precious opal gemstones from Canadian material. For that matter, Okanagan Opal Inc. is the first company in Canada

to undertake to produce on a commercial basis; finished "precious gemstones", of any type, from a Canadian natural resource deposit.

It is projected that this vertically integrated "opal business" will produce a profit by the end of the second year of production and sales; this expected by December 31, 1997. Thereafter it is projected that production and sales will support the business for many years and that profits will provide a good return to the shareholders.

Location and Access:
The Klinker Property is located some 23 kilometres north-west of the City of Vernon, British Columbia and is situated at the upper limits of McGregor Creek which drains east into Equesis Creek, which in turn drains south-east into the west side of Okanagan Lake at a point 9.5 kilometres south-west of the north end of the lake.

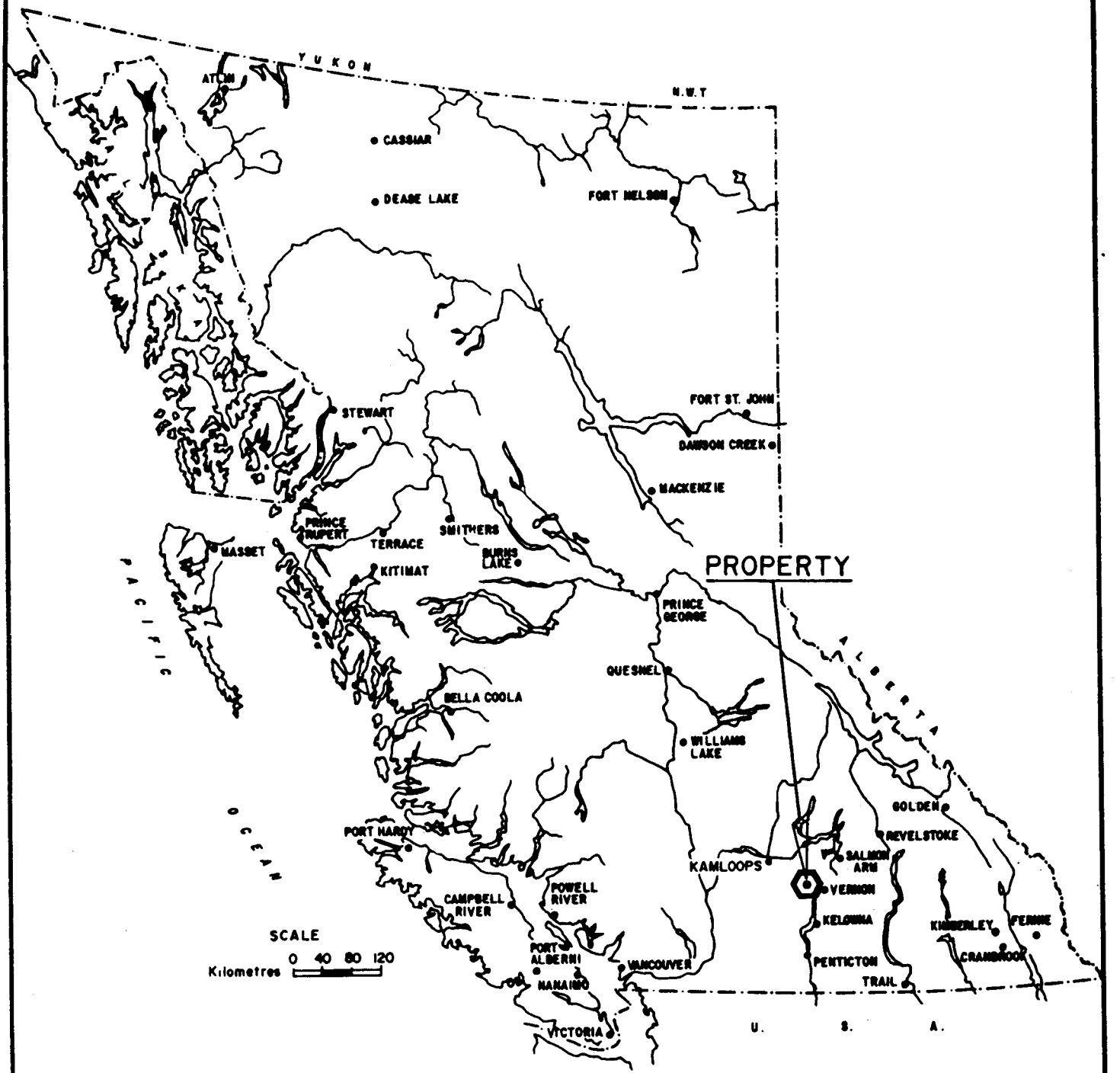
The property is accessible via the McGregor Creek forestry access road off the main Six Mile Creek Road situated some 13 kilometres south on Westside Road off Highway 97 N some 12 kilometres by road from Vernon, B. C. via Hwy. 97. The property is centred at the 10.5 kilometre mark on the McGregor Creek Road. The claims are located in the Vernon Mining Division - on map N.T.S. 82L/5E.

The property is presently accessible via two wheel drive during the period from early June to mid October. Snow cover commences in mid October and lasts until May.

Physiography and Vegetation:
The central portion of the Klinker Property, the Klinker 1 and 2 mineral claims, are situated over the height of land seperating the McGregor Creek drainage from a main tributary of the Ewer Creek drainage. These two claims cover all of the precious opal occurances located to date; all of which occur on the south-western and western flank of the ridge seperating the upper limits of McGregor Creek from Ewer Creek. This ridge reaches a maximum height of just over 1500 metres.

Other portions of the property, comprised of the Ewer 1 to 22 mineral claims and the Paul Fraction; stretches from the 9 km. marker to past the 12 km. mark on the McGregor Creek Road and covers some 1.8 km. in width; from the south side of McGregor Creek to some 500 metres north of the Ewer Creek canyon rim. Elevations range from ~1400 metres to 1500 metres along the length of the property and in McGregor Creek; and to ~1200 metres in the Ewer Creek canyon which parallels the claim block to the north.

A large portion of the property was clear-cut logged in the late 1980's and has not to this date been reforested. Other portions of the property have been logged at various times, some evidently in the 1950's or 60's. Some small quantities of merchantable timber, mainly Douglas Fir and Lodgepole Pine, occur along steeper segments of the property. The older logged areas have developed locally into good stands of second growth timber.



KLINKER PROPERTY

McGregor Creek Area, B. C.
Vernon Mining Division

PROPERTY LOCATION MAP

OKANAGAN OPAL INC.

DATE	SCALE	MAP No.
Jan. 1995	1:8,000,000	1

Numerous small ponds occur on the property. Many of these appear to be spring fed "fresh water" ponds rather than swamps; and are generally partial or completely grass covered areas surrounded by alder/willow brush and poplar trees. Some, particularly those ponds near the height of land on the Klinker #2 claim, retain fresh water throughout the summer season even when other ponds at lower elevation have dried up.

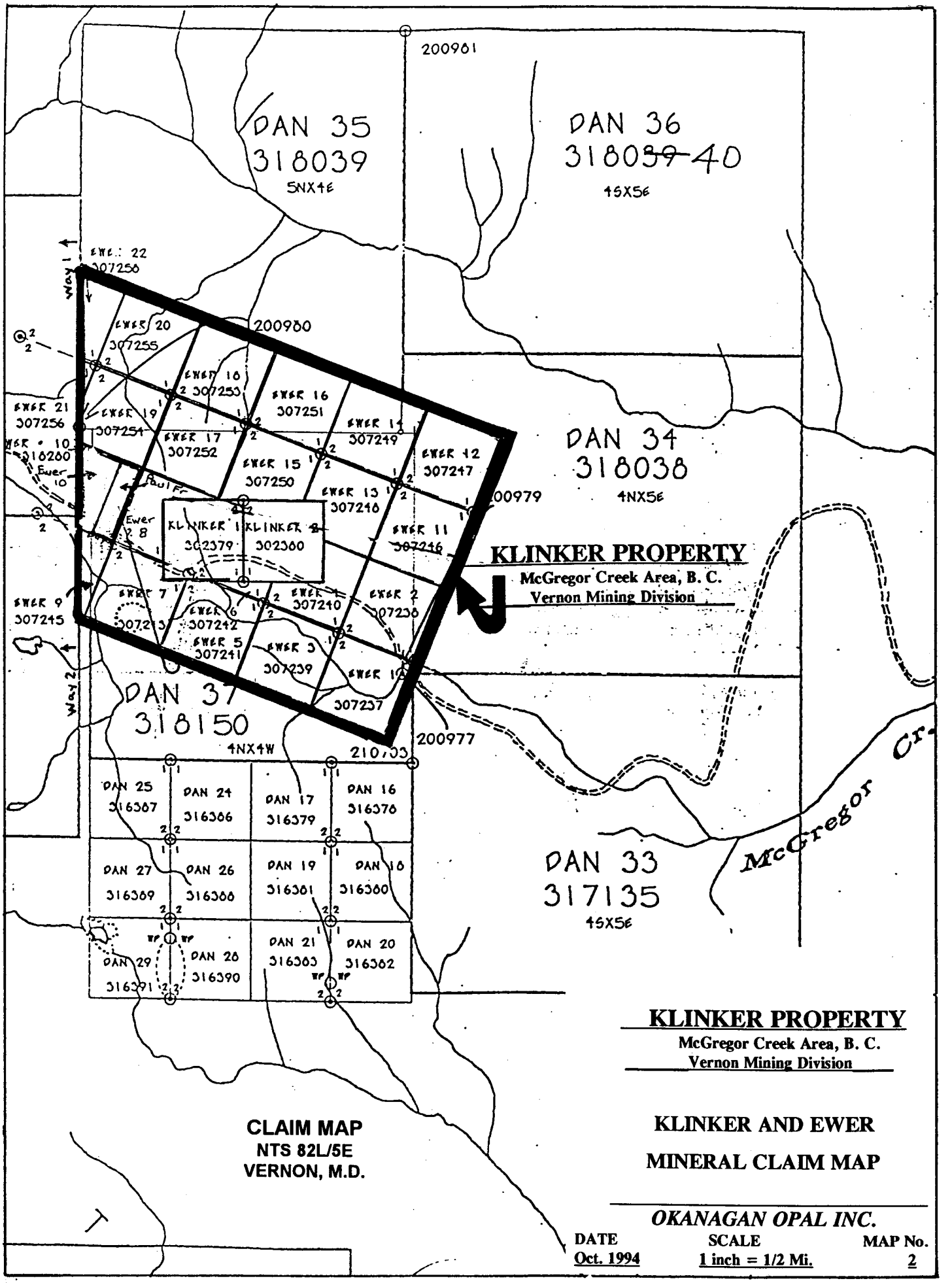
Property Description:

A list of the claims forming the Klinker Prpoerty is provided below. See also the claim map (Map #2) for further information.

Mineral Claims

Claim Name	Units	Record #	Current Expiry Date
Klinker # 1	1	302379	July 7, 2002
Klinker # 2	1	302380	July 7, 2002
Ewer # 1	1	307237	January 12, 2002
Ewer # 2	1	307238	January 12, 2002
Ewer # 3	1	307239	January 13, 2002
Ewer # 4	1	307240	January 13, 2002
Ewer # 5	1	307241	January 13, 2002
Ewer # 6	1	307242	January 13, 2002
Ewer # 7	1	307243	January 13, 2002
Ewer # 8	1	307244	January 13, 2002
Ewer # 9	1	307245	January 13, 2002
Ewer # 10	1	318280	June 9, 2002
Ewer # 11	1	307246	January 13, 2002
Ewer # 12	1	307247	January 13, 2002
Ewer # 13	1	307248	January 13, 2002
Ewer # 14	1	307249	January 13, 2002
Ewer # 15	1	307250	January 13, 2002
Ewer # 16	1	307251	January 13, 2002
Ewer # 17	1	307252	January 13, 2002
Ewer # 18	1	307253	January 13, 2002
Ewer # 19	1	307254	January 13, 2002
Ewer # 20	1	307255	January 13, 2002
Ewer # 21	1	307256	January 13, 2002
Ewer # 22	1	307258	January 13, 2002
Paul Fr.	1	326981	June 17, 2002

The recorded owners of the Klinker and Ewer claims are R. W. Yorke-Hardy and G. R. Grywacheski; however, the claims are under option to Okanagan Opal Inc. which has the right to earn a 100% undivided interest in the claims by performing work and paying royalties to the original owners. Ownership of the ground covered by the Paul Fraction is subject to the outcome of several Section #35 complaints filed by Okanagan Opal Inc. against the owners of the Dan mineral claims.


200961
DAN 35
318039
5NX4E
DAN 36
318039-40
4SX5E
EWER 22
307256
Way 1
EWER 20
307255
200980
EWER 21
307256
EWER 19
307254
EWER 18
307253
EWER 17
307252
EWER 16
307251
EWER 15
307250
EWER 14
307249
EWER 12
307247
EWER 13
307248
EWER 11
307246
EWER 10
307245
Ewer 8
KLINKER 1
307239
KLINKER 2
307240
EWER 9
307245
EWER 7
EWER 6
307242
EWER 5
307241
EWER 3
307239
EWER 2
307238
EWER 1
307237
DAN 34
318038
4NX5E
200979
KLINKER PROPERTY
McGregor Creek Area, B. C.
Vernon Mining Division
Way 2
DAN 37
318150
4NX4W
200977
DAN 25
316367
DAN 24
316366
DAN 17
316379
DAN 16
316376
DAN 27
316369
DAN 26
316368
DAN 19
316381
DAN 18
316380
DAN 29
316391
DAN 28
316390
DAN 21
316383
DAN 20
316382
DAN 33
317135
4SX5E
McGregor Cr
KLINKER PROPERTY
McGregor Creek Area, B. C.
Vernon Mining Division
CLAIM MAP
NTS 82L/5E
VERNON, M.D.
KLINKER AND EWER
MINERAL CLAIM MAP
OKANAGAN OPAL INC.
DATE
Oct. 1994
SCALE
1 inch = 1/2 Mi.
MAP No.
2

The Paul Fraction was staked during the 1994 season by R. W.Yorke-Hardy and will be subject to the terms and condition of the option agreement. The option agreement has been registered with the Mineral Titles Branch as a "Miscellaneous Document" against the titles of the two Klinker and twenty-two Ewer mineral claims. Section 4, Paragraph 4.1 of the Agreement effectively acts as a bill of sale which serves to convey and transfer the property title to Okanagan Opal Inc. as of October 1, 1993; subject only to the terms and conditions contained in the Agreement.

The expiry dates shown herein reflect the application of 5 to 7 years of work supported by the filing of the "physical work" portion of the exploration and development work conducted during the 1994 season. The claims are all located in the Vernon mining Division of British Columbia. All claims have been located in accordance with the requirements of the Mineral Act of the Province of British Columbia.

Klinker Property History:

The ground now controlled by the Klinker and Ewer claims was once partially covered by the Rocket # 1 mineral claim which was originally staked in 1988 after an information release by Huntington Resources Ltd. regarding drill results from the "Brett Property - Whiteman Ck.". That announcement reported a 235 foot intersection of 2.03 oz/ton gold and resulted in a staking rush which blanketed the region for miles in all directions. There is only limited physical evidence of work being conducted on the Rocket #1 claim. Some trenching has been noted in the vicinity of location line for Ewer #15 and #16 but no specific information is available regarding results obtained from this work. The Rocket # 1 mineral claim forfeit as of May 20, 1991; prior to the location of the Klinker claims which were staked July 7, 1991. The Ewer claims butt up to the east side of the Way 1 and Way 2 mineral claims. These claims, also staked in 1988, are still in good standing with some new work recorded in 1994. Specific details are not yet available and little information is available regarding previous work although it is believed that exploration efforts to date have targeted epithermal style gold/silver mineralization.

The Klinker #1 and #2 mineral claims were staked in July 1991 to cover an area of fragmental volcanic rocks which contained agate and common opal suitable for lapidary use and other "scoriaceous volcanics (klinkers)" which were initially believed to have some "Landscape Use" potential. Prospecting during the summer of 1991 resulted in the determination that the scoriaceous, klinker like, rocks were a localized phenomenon caused as a direct result of intense heat created by a fire used to burn logging slash on a old landing adjacent to the McGregor Creek forest access road. Prospecting and rockhounding during August and September of 1991 resulted in the discovery of numerous occurances of banded grey to white agate and localized occurances of opaque, common white and transparent, light yellow opal. These opal occurances were found locally to occur as alternating parallel layers of thin interbanded opaque white and transparent yellow common opal. Some unique specimens of partially filled agate geodes exhibiting late stage common opal layering within the agate center were also found.

On Thanksgiving day, October 14, 1991, while rockhounding for agate and common opal the first few pieces of "precious opal" or "opal with a play of color" were discovered. This discovery was followed up by hand trenching; and some cat work which was completed during the period from late October to December 31, 1991. Numerous other pieces of precious opal, occuring as nodules infilling vesicules in fragments of volcanics and as fracture coatings and fracture fillings were found in close proximity to the first discovery. As a result the Ewer claims were staked in January of 1992 in order to cover the area surrounding the discovery site now referred to as the Discovery Zone.

In the years 1992 and 1993 only limited prospecting and rockhounding was conducted. A hydraulic jackhammer was used to break rock in the Discovery Pit and at several other locations to the northeast and up hill from the original discovery. This work resulted in the accumulation of more precious opal, common opal and agate alike. Numerous commercial grade gemstones were cut from this material and plans were made to start retail marketing of Okanagan Opal in the summer of 1993. The shop being used to carry on this retail business was destroyed by fire on July 6, 1993; resulting in the loss of all inventory and equipment.

On October 1, 1993 the company Okanagan Opal Inc. optioned the Klinker and Ewer mineral claims from the prospectors. Commencing in late October 1993, Okanagan Opal Inc. conducted an exploration program consisting of geological mapping, overburden stripping and small scale bulk sampling; which was completed in early December 1993.

As a result of the program conducted in late 1993 the Company arranged private placement financing for an extensive physical exploration program to be conducted in 1994. In addition, the Company applied for and was approved to receive a "Mineral Incentive Grant" from the British Columbia Ministry of Mines.

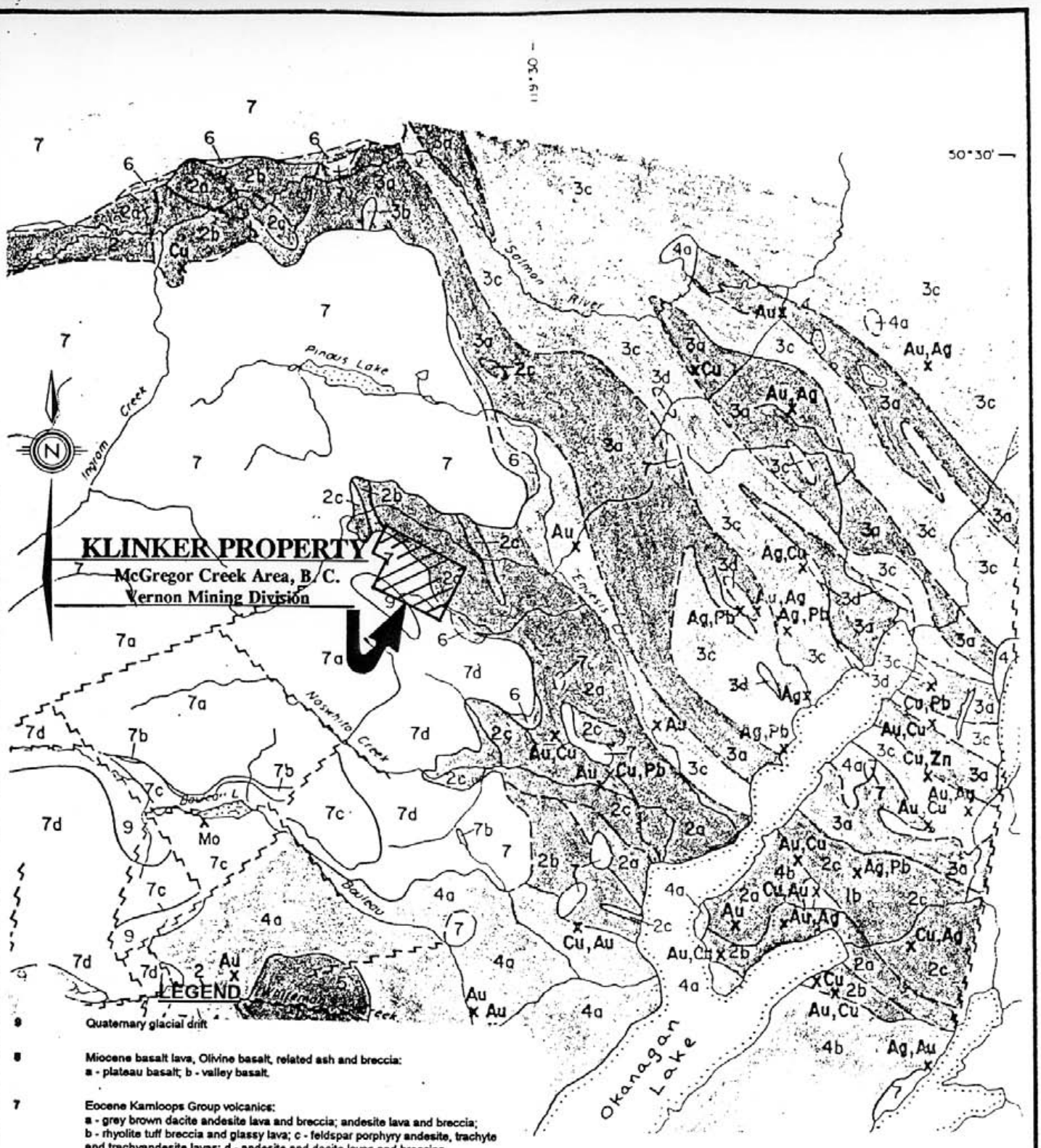
This report, an internal private report for the Company; has been prepared to describe the 1994 program and to discuss the results of this program. This report is intended for the Company's internal use and is to be submitted to the British Columbia Ministry of Mines as required to support the grant awarded under the government sponsored 1994 Mineral Incentive Program.

Regional Geology: (By Brian Callaghan B.Sc., Geology)
The property is underlain by predominantly basal to middle Eocene Kamloops group volcanics (Reid 1994). These volcanics occur as a northwest trending belt of volcanoclastics consisting of sediments with intercalations of scoriaceous lava of basaltic composition and minor conglomerate. An overlying sequence of tuffaceous shale and waterlain rhyolite ash occurs 6.5 kilometres northwest of the Klinker claims. Both these units are underlain by metamorphosed volcanic andesites, believed to be part of the Thompson Assemblage of Carboniferous or Permian age; that outcrop on the eastern half of the Klinker 2 mineral claim.

Property Geology: (As mapped in 1994 by Brian Callaghan B.Sc., Geology)
Mapping of the Klinker claims including the four main worked areas referred to as the Discovery, Bluebird, Caramel, and Red Rock Zones was conducted at a scale of 1:1000 (See Map # 6). These 'worked areas' are underlain by predominantly high energy lahars, breccia and lapilli tuff.

Rock outcrops underlying the main grid area are the result of Late Cretaceous to Eocene magmatism and extensional tectonics. These rock units include differentially weathered, poorly sorted to monolithologic sediments with clasts varying in size from one centimetre up to eighty centimetres. The angular to rounded clasts consist of mostly scoria, amygdaloidal basalt, andesite, and tuffaceous sediments supported in a friable, porous poorly sorted, detrital tuff matrix. The green to brown matrix consists of angular to sub-rounded grains including igneous rock fragments, minor hematite, manganese and sub angular kaolinized fragments. Other rock units consisting of bleached, salmon pink to rusty red clast supported sediments with clasts from one centimetre to five centimetres are hematized and less differentially weathered. They occur locally in the Red Rock zone and to the southwest of the Bluebird zone. Lahars within the Discovery zone are overlain by a west northwest striking thin sequence of well statified (sub-aerial) lapilli tuff up to sixty centimetres in thickness and are exposed as broken boulders and lenses. Well exposed lapilli tuff also occurs east of the Caramel zone.

Structural Geology and Faulting:
The lahars form a series of troughs that appear to strike at 340 degrees. Interlayered lapilli tuff matrix material around clasts exhibits shallow bedding features that suggest the lahars dip gently, from 10 to 30 degrees, to the southwest. The matrix supported lahars may represent the margins or leading edges of the flows within a sub aerial environment and are important because they appear to be the main host for the opal. Also, the areas of noticeable hematite alteration may represent the contact margins or tops of subsequent flows in a sub aqueous terraine. Faulting may be expressed topographically in the form of minor linear troughs which are occupied by bodies of water and dense brush, vegetation cover. The main lineations, inferred topographically, for faulting are 360 degrees, 010 to 020 degrees, and 320 to 340 degrees. The main fracture filling structures strike 0 to 040 degrees, 070 degrees and 320 to 350 degrees. A right lateral strike slip fault (Reid 1994), located on the east side



LEGEND

9 Quaternary glacial drift

8 Miocene basalt lava, Olivine basalt, related ash and breccia:
a - plateau basalt; b - valley basalt.

7 Eocene Kamloops Group volcanics:
a - grey brown dacite andesite lava and breccia; andesite lava and breccia;
b - rhyolite tuff breccia and glassy lava; c - feldspar porphyry andesite, trachyte and trachyandesite lavas; d - andesite and dacite lavas and breccias.

6 Eocene Kamloops Group sandstone, conglomerate, shale.

5 Paleocene syenite, granite and monzonite feeder stock.

4 Jurassic intrusives: a - Valhalla granodiorite and granite; b - Nelson quartz diorite, granodiorite and diorite.

3 Upper Triassic - Lower Jurassic Nicola and Slocan Groups: a - Nicola andesite and basalt flows, porphyritic augite andesite, breccia, tuff, agglomerate, greenstone;
b - Nicola black shale argillite, massive siltstone, phyllite; d - Slocan conglomerate.

2 Carboniferous and Permian Thompson Assemblage (may include Nicola Group):
a - greenstone, tuff; b - siliceous argillite, volcaniclastic sandstone, quartzite, siltstone;
c - massive crystalline white siltstone, massive crystalline white and grey limestone;
d - conglomerate with limestone matrix.

1 Mississippian (?) or older: a - Old Dave serpentine and serpentinized ultramafic intrusives; b - Chapperon Group chloritic phyllite, greenstone, micaceous schist.

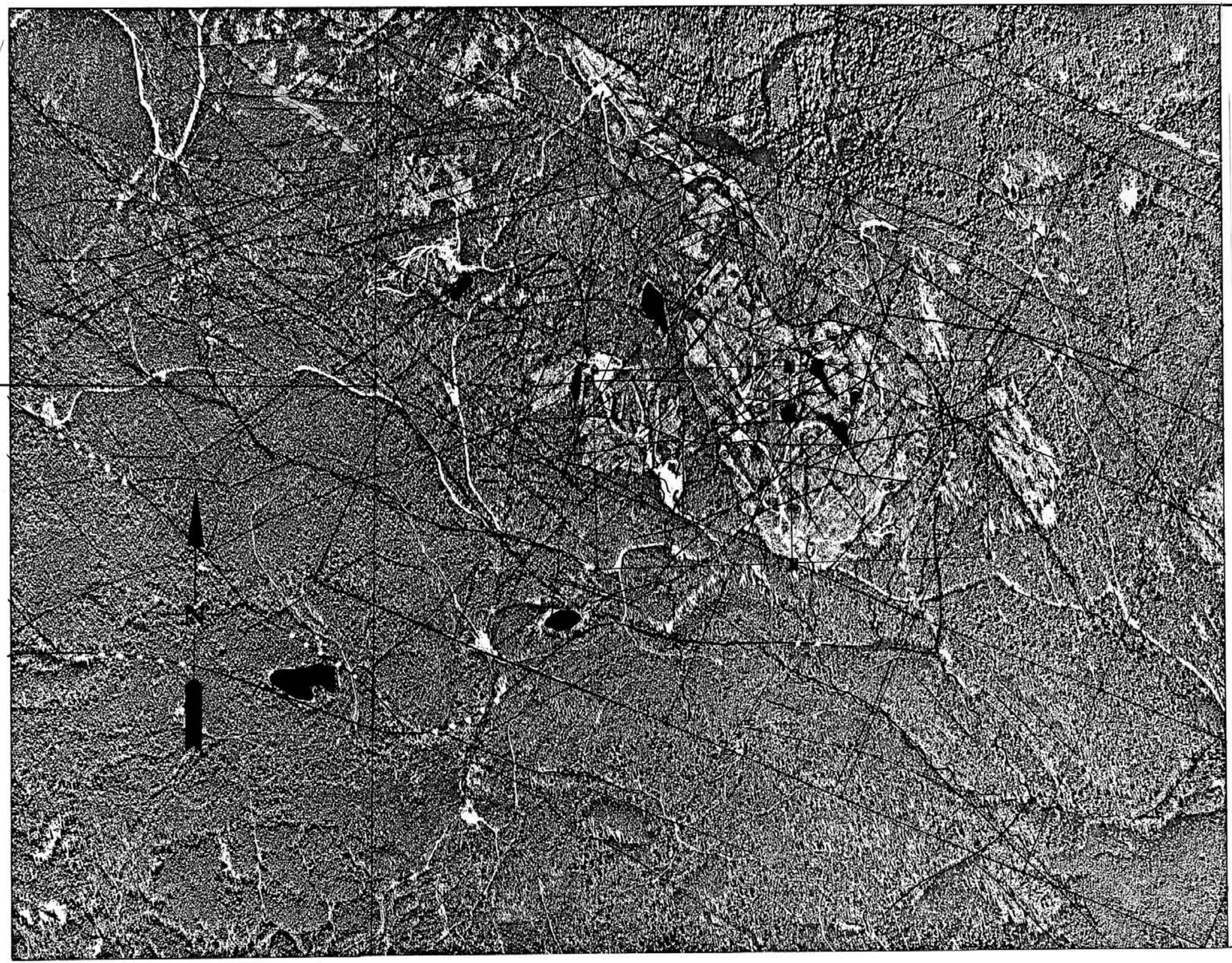
KLINKER PROPERTY

McGregor Creek Area, B. C.
Vernon Mining Division

REGIONAL GEOLOGY MAP

OKANAGAN OPAL INC.

DATE	SCALE	MAP No.
Jan. 1995	1:200,000	3



LEGEND

- Precious opal occurance :
- Klinker claim post
- Claim line
- Interpreted fault or fault contact
- Interpreted base of Eocene Volcanic Unit
- Interpreted flow/bed? contact within Eocene Units
- North-westerly trending lineations :
  - flow/bed? boundaries
- East to north-easterly trending lineations :
  - tension fractures, jointing and/or faulting

SCALE : 0 100 200 300 400 500 Metres

KLINKER PROPERTY

McGregor Creek Area, B. C.
Vernon Mining Division

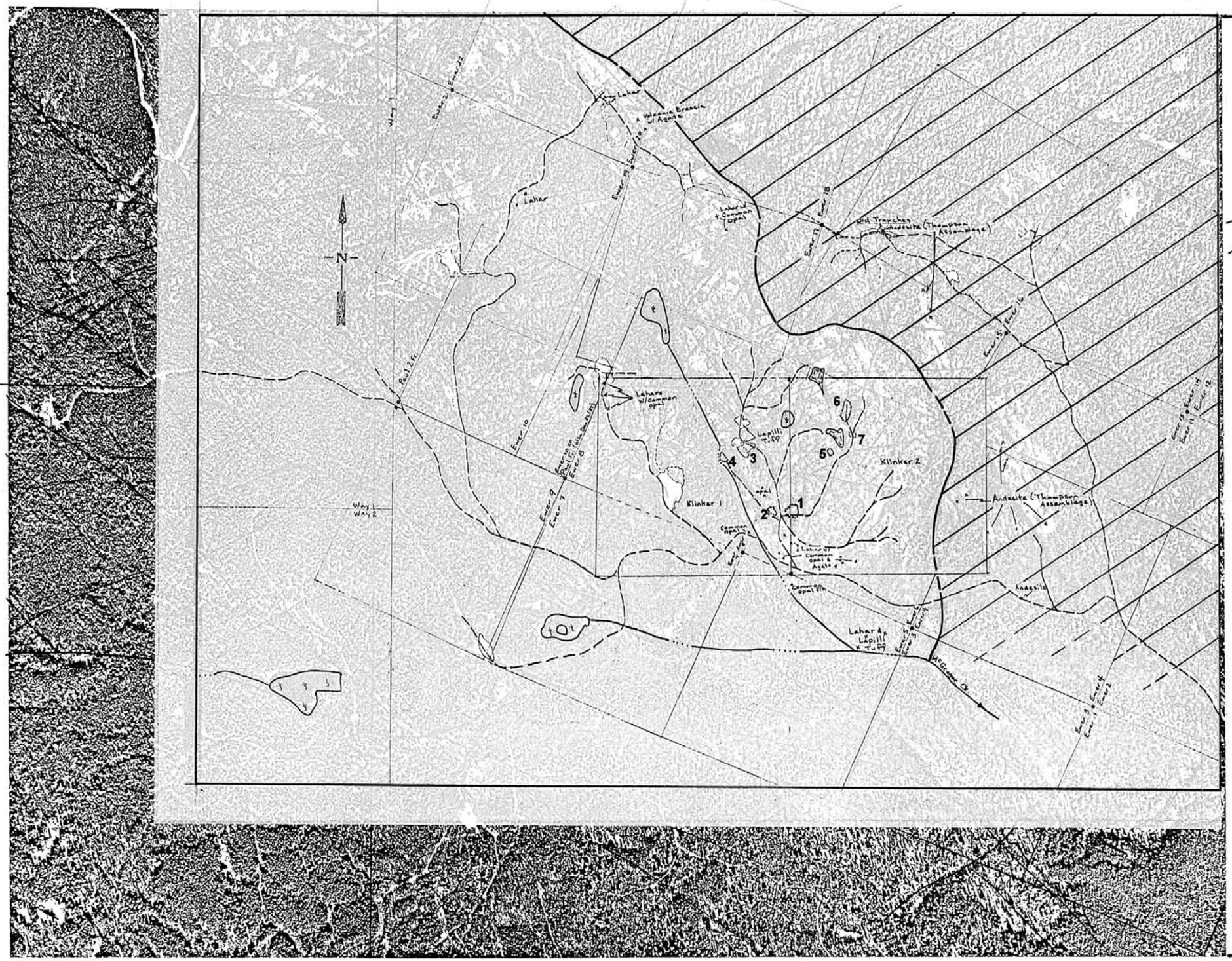
OPAL OCCURANCES, AIRPHOTO LINEATIONS and DETAILED CLAIM BOUNDARIES

OKANAGAN OPAL INC.

DATE	SCALE	MAP No.
Feb. 1995	1: 10,000	4

McElhanney

REF# 1548-0



LEGEND

- Precious opal occurances
- Interpreted base of Eocene Kamloops Group Rocks
- Permian Thompson Assemblage Rocks

PRECIOUS OPAL ZONES

1 DISCOVERY ZONE
2 BLUEBIRD ZONE
3 CARAMEL ZONE
4 CARAMEL EXTENSION
5 TRIPOD ZONE
6 RED ROCK ZONE
7 EAST WATERHOLE ZONE

SCALE : 0 100 200 300 400 500 Metres

KLINKER PROPERTY

McGregor Creek Area, B. C.
Vernon Mining Division

MAP 4 OVERLAY

**Showing Precious Opal Zones,
Prospected Areas Indicating
Lahar Flows, Agate and Common Opal
&
Interpreted Base of the Eocene Volcanics**

OKANAGAN OPAL INC.

DATE:	SCALE	MAP No.
Jan. 1995	1:10000	4a

McElhanney REF# 1548-0

of the Discovery zone exhibits fault gouge along north/south slickensides that plunge between 240 to 255 degrees to the southwest. The fault dips 50 to 80 degrees and cuts off 020 degree fracture fillings that dip vertically to 85 degrees southeast. Evidence of soft sediment slumping along the exposed portion of this north/south fault suggests the possiblity that movement along the southwest dipping lahars is to the southwest and basining of these volcanoclastics is to the northwest; and, that these sequences are volumetrically greater in the vicinity of the Klinker and Ewer mineral claims. Footwall sediments include purple clast supported breccia that exhibits 020 degree fracturing with minor Agate and Zeolite infillings that are void of opal. Silica emplacement in the form of opal is possibly restricted by the effectiveness of the impermiable nature of fresher volcanic clasts that act as damming fronts so that most of the opal within the volcanoclastic rocks occurs as a vesicle infill within scoriaceous clasts, as a cement within the matrix and as an infill along fractures between clasts and fractures that cross-cut the clasts. Greater concentrations of opal occur at the intersection of cross cutting fractures within the more permeable highly weathered basalts in the Discovery and Bluebird zones.

Silica veining is largely single stage with minor second stage veining that exhibits internal stratification of the silica. The plane of deposition is not parallel to bedding attitudes of the lahars but is instead sub horizontal suggesting deposition at some time after formation and uplift of the lahars. The veins appear irregular, discontinuous and vary in thickness. Discontinuous fractures infilled with agate in the Discovery Zone vary in width from a few millimetres up to 2 cms. and extend for distances up to 20 cms.. Other fractures part infilled with precious opal and common opal appear as irregular hairline to 2 to 5 mm. northerly trending veinlets.

Vein deflection and ponding around clasts is evident with very minor detexturing. Veins are clean walled other than extensive manganese coating fracture surfaces or solution channels. This suggests little transfer of heat to the wall rock that includes impermeable clasts.

The presence of agate, zeolites, and opal suggests repeated fracture and vein infilling resulting in the precipitation of, in some cases, agate and opal sharing the same cavity. The banded opal-agate may have formed by transformation of amorphous silica. Quartz may have formed by growth within bands of initial amorphous silica so that fluid inclusions within the quartz were trapped at the time of formation and later remobilized during transformation to opal. This would be brought about by increases in pressure which would increase the solubility of quartz.

Evidence of pure agate nodules found on surface more abundantly to the south and east of the Discovery zone might be a result of their erosion from younger overlying tuffaceous shales and waterlain rhyolite ash sequences believed to occur to the south-west.

Zeolites appear mostly as infillings of vesicles and as a matrix cement but not as a fracture infilling. The greatest concentration of zeolites appear peripheral to the main areas of intense fracturing including the Discovery, Bluebird and Caramel zones, although minor emplacement occurs in close proximity to opal formation in these zones.

Restrictive controls for the precipitation of opal include the vertical extent of the northeast trending fractures, thickness, porosity and amount of matrix material within the volcanoclastic sediments. These factors may help to explain why and where the greatest opal concentrations occur.

The target areas for extensive precious opal formation include undercutting the areas of greatest intense fracturing related to north-south faulting at or near the contact margins of the north-west trending high energy lahars with porous tuff matrix material. These areas may represent the roots or major fractures with greater concentrations of precious opal.

Following and prospecting these series of north-south sub-parallel lineaments to the northwest of the Klinker 1 & 2 mineral claims in the vicinity of the contact between lahars and tuffaceous shales and waterlain rhyolite ash sequences would also be good target areas for precious opal occurances.

Overview of the Fieldwork Portion of the 1994 Program :

The fieldwork portion of the 1994 program on the Klinker Property commenced May 24, 1994 and continued until Nov. 5, 1994. A camp was constructed on site to house crew members which ranged from one to four men. The work performed was conducted mainly on the Klinker 1 and Klinker 2 mineral claims. Physical work consisted of overburden stripping, trenching, backfilling and dump contouring using a JD 40 Excavator; rock removal using various rock breaking techniques and various pieces of equipment and hand tools; sorting of excavated rock material to collect specimens and samples of precious opal bearing rock; and line cutting to accomodate the legal survey of the perimeter of the Klinker 1 and 2 mineral claims. Additionally, the program included geological mapping, a control survey around the perimeter of and adjacent to the Klinker 1 and 2 mineral claims, and sample evaluation. The sample evaluation portion of the program is on-going. This portion consists of 'cutting of gemstones' to determine marketability and price of finished pieces of opal. This procedure is necessary in order to assess the value of the deposit as no analytical technique can be used to define gem quality.

Detailed Discussion of the 1994 Program:

Overburden Stripping and Wash-down of Outcrops -

During the period from June 6 to June 10, 1994 and again from August 17 to August 24, 1994 a total of 75 hours was spent using a JD 40 Excavator to strip overburden to create rock exposures in the main exploration areas and to conduct some trenching work. Five main areas were worked with a total of approximately 4000 square feet of area being stripped of overburden. This work included clean-up over areas partially stripped in late 1993 and several new areas discovered by prospecting in early June 1994. See accompanying maps for outline of areas stripped.

Overburden in the areas stripped was generally 15 to 45 cm. thick. Locally, particularly along the evident fault lineations east of the Discovery Zone and north of the Bluebird zone, overburden depths reached depths of 3 to 5 metres. Most of the deep excavations were backfilled after examination. One area at the east edge of the Discovery zone was left un-filled to serve as a surface run-off water storage pond which will be utilized to continue washing off adjacent outcrops in 1995. Remaining overburden was stacked and contoured.

Once the heavy overburden was removed the outcrops created were washed down with water to provide clean rock to examine and map. Locally, recessively eroded fracture zones created pockets of thick overburden which were removed by hand and with water hoses. Containment of silt was accomplished by ponding the wash water behind overburden piles. Due to dry weather conditions over the 1994 summer season no water was available for washing down outcrops after early July. Parts of the Bluebird and Caramel Zones were washed down as was a large part of the Discovery Zone.

Prospecting -

Prospecting during the first two weeks of June led to the discovery of two new zones of opal and agate bearing rocks - the Bluebird Zone and the Caramel Zone. These areas form part of the over all area which was stripped and washed down during the 1994 program and they were both found to contain precious opal. Later prospecting located other opal and agate bearing zones. Of these, the Caramel West Extension was found to contain precious opal. Several other areas were stripped to create outcrop but have not yet been washed down or closely examined.

Common opal and agate occurances have been found over a length in excess of 1000 metres and a width in excess of 500 metres; however, all of the precious opal discovered to date is located within the boundaries of the Klinker 1 and 2 mineral claims and occurs within an area measuring some 270 metres by 100 metres. See Map #'s 4 and 4a showing locations of agate and opal encountered to date. This work has been plotted on an overlay of a 1:10,000 scale airphoto mosaic. Lineations, believed to be the expression of flow boundaries/contacts and faults or shears have been highlighted on these maps as have the claim boundaries.

Prospecting activities have indicated that the presence of Lahar debris flow material, the main host for the opal occuring on the Klinker claims; extends considerably beyond the presently defined limits of precious opal occurances. Common opal has been noted at several locations beyond the boundaries of the Klinker 1 & 2 mineral claims.

Geological Mapping -
Geological mapping was confined to the main area of interest within the Klinker 1 and 2 mineral claims (see Map # 6). This mapping was controlled by chain and compass surveying and by plotting on a 1:1000 scale orthophoto of the main portion of the property.

Utilizing a 1:5000 scale airphoto mosaic, the 1:1000 scale orthophoto and topography, the main fault/shear and lithologic lineations have been indicated on Map # 4 and some are shown on Map # 6.

Mapping and prospecting has determined that the lahar debris flow, the main opal host rock, extends beyond the limits of Klinker claims. Precious opal occurances are noted on Map # 6 with the main concentrations being in the vicinity if the Discovery, Bluebird, Caramel and Caramel Extension zones.

The surface area encompassing all of these zones measures up to 280 metres by 110 metres. Geological mapping indicates that the lahar unit is dipping at 20 to 30 degrees to the southwest and it is therefore inferred that the thickness of the lahars in this area averages some 30 to 35 metres. With an average measured strike length of 250 metres, a calculated thickness of 30 metres, an assumed 80 metre width (determined by using a one-third length to width ratio) and finally using a factor of 0.33 cubic metres per tonne, it is inferred that some 1.8 million tonnes of lahar, debris flow, material is contained within this area. Of the 20,000 to 30,000 square metre total surface area, a total of 7,150 square metres have been stripped. Of the stripped area some 2,000 to 2,100 square metres is known to contain precious opal and is assumed to be potentially economic. This indicates that some 28% of the stripped area contains precious opal. Preliminarily this indicates that some 5% to 10% (2,000 square metres) of the total 20,000 to 30,000 square metre area encompassing the four main zones contains precious opal. This suggests that some 90,000 to 180,000 metric tonnes of precious opal bearing rock could occur within this area.

Additional precious opal occurances have been noted to the east near the top of the hill within the Red Rock and Tripod zones and at one intermediate site.

Rock Excavation -
After the rock exposurers had been washed down a program of rock excavating was commenced; which extended over the period from June 17 to August 12, 1994. First, a rock face was developed by hand trenching along the west side of the Bluebird Zone. This excavation has been called the Bluebird Pit. In total a length of 15 metres, a width of 3 metres and depths of 0.5 to 1 metre was broken out using a 60 pound jackhammer powered by compressed air supplied by a 170 cfm Gardner-Denver diesel powered compressor. In close proximity to any opal occurances encountered a compressed air

powered 20 lb. chipping hammer or sledge hammer and hand chisels were used to break the rock. As the rock was broken out of place it was inspected by hand and any opal bearing material was collected and placed in bucket; white/common opal and precious opal were seperated.

In the Discovery zone the same procedure was used to create a wide bench across the entire exposed area. This open cut has a length of some 45 metres with varying widths and with depths from 30 cm. to 60 cm.. As this material was inspected it was dumped so as to create a 2.5 to 3 metre wide bench which could be used as a road to provide access to a trail leading to the upper showings. Again, the white/common opal and the precious opal bearing material was seperated and placed in buckets for further evaluation.

Commencing in September 1994, three bulk samples were collected from the Discovery Zone. The sample locations were not specifically selected based on obvious precious opal content; but rather because these blocks of rock required removal as a preliminary step towards developing a systematic rock removal program. Material from these three blocks which was seen to contain some precious opal was passed through a classifying plant, described below; and opal found was placed in containers each of which was marked as to it origin.

In total some 415 tons of material were removed of which 50%, or 210 tons (190 tonnes) was determined to contain some precious opal. Evaluation to determine the volume and value of opal contained is still underway.

Rock Sorting -
During the period from June until mid September all rock sorting was conducted at the face as broken rock was created. Initially this work was conducted on the ground however a portable, sloping, sorting table was built which made this work easier and faster.

As it is not possible to detect precious opal in any way other than by close visual observation it is necessary to "hand cob" all material. As anticipated, the volume of rock to be handled made for slow progress. The Company's plans to set up a classifying plant were implemented in mid August, once equipment could be delivered to the Klinker Project site.

The "classifying plant" consists of a three deck vibrating screen positioned over a steep-walled bin. This plant serves to seperate the excavated material into four general size fractions. Each size fraction is then in turn "hand cobbed" in order to seperate opal bearing material from waste rock.

The upper, grizzly deck on the classifying plant seperates the material which is over 4 inches in size. The top screen on the sorting plant is 2" by 2" which seperates material passing the grizzly and produces a fraction which is between the 4" by 2" in size. The lower screen on the classifying plant is a 1/2" by 2" screen which produces a fraction which is between 2" by 1/2" in size. Material passing the 1/2"screen is collected in a

hopper which can be fed, by a pan feeder; into a containment box at ground level. This minus 1/2" material, the fine fraction, is shovelled from the containment box into a wash box where the mud and very fine material is removed leaving cleaned fines which are inspected for chips of opal prior to waste material being discarded. Wash water from this process is contained in a sump to allow suspended particles to settle prior to re-cycling the water. See schematic drawing of the classifying plant and the site location on Map # 6.

Each of the containers of opal bearing rock has been transported to Vernon were further sorting, grading and evaluation occurs.

Opal Grading and Evaluation -
Unlike other mineral exploration and mining there is no analytical techniques available to determine and control 'the grade' of the rock containing precious opal. Precious opal, as with other gemstones, is evaluated based on visual characteristics, optical properties and physical properties.

Opal deposits are typically not fully economically evaluated prior to commencement of mining. In Australia the only predetermined factor is whether or not "color occurs". Once the existence of precious opal (opal with a play of color) is determined private funds and/or joint venture funds are used to open and extract the opal bearing rock units. The excavated material is then processed, often by hand washing and/or autogenous milling; to clean and extract the precious opal from the base rock (matrix). The liberated rough opal is sorted and graded by hand prior to selling. Still other material is just hand sorted and cleaned to be sold as "opal in matrix".

Most often the cleaned and graded, rough, precious opal material is sold in the rough form; and the manufacture of finished stones is conducted by others. The finished opal commands a significantly higher price than does the mine run rough.

Okanagan Opal Inc. recognizes that the value added segment of processing and retail marketing of finished gemstones and jewellery, combined with the tourist market potential in the Okanagan will provide a significant increase in the final economic potential of the project. Okanagan Opal Inc. has determined that there is a viable business to be developed utilizing this unique and exclusive product. However, the full extent of this market value is as yet undetermined.

Therefore, a system has been created by which samples collected during exploration and test mining can be evaluated. In turn, these samples can be utilized to assist in the economic evaluation of the Okanagan Opal deposit. As this evaluation process takes place commercial grade finished product is created which has a defineable market value and which can be sold to create a cash flow which will help to offset the ongoing business development costs. It is Okanagan Opal Inc's. assessment that sales of finished opal product and specimens can within the first year or two be sufficient to cover the costs of a small scale production program; and which will ultimately determine the full scope and economic potential of the property. The system developed to

commence this "small scale production/evaluation" process has established a base upon which an efficient gemstone cutting, production system can be developed.

Opal bearing material collected prior to the bulk sampling stage (from the preliminary 1994 rock excavating process) in the Bluebird Pit and Discovery Zone has for the most part been resorted and graded into two broad classes; cuttable material and specimen material. At this stage of development the cuttable classification includes anything that can be utilized in the manufacture of a finished gemstone. Gemstones are classified as solid, matrix, boulder, doublet or triplet pieces (refer to Opal Identification and Value; Paul B. Downing, Ph. D.; 1993; or Opal Cutting Made Easy; Paul B. Downing, Ph. D.; 1984). Specimens include all other pieces exhibiting uncuttable precious opal and various, interesting pieces of common opal. Some common opal is also cuttable into commercial gemstones; particularly that material which is transparent with an orange to amber base color.

Price evaluation of the sorted commercial grade rough opal material could take place after the sorting, cleaning and grading of the mine run rough has been completed. This is the first time when an assessment of value can be made based on what can be made from the rough. Since "Okanagan Opal" has not yet been proven to the international market place it would not command a top market price. The price, or value of opal is controlled by many factors; but, as with all gemstones, opal is evaluated and priced based on the quality of the finished gemstones which can be made from the rough.

Paul Downing, an opal expert and a noted author of books on opal is a director of Okanagan Opal Inc.. He has (see Opal Identification and Value; Paul B. Downing, Ph. D.; 1993) established a five to one ratio between the value of rough opal and the value of the finished opal cut from that rough. This ratio is conveniently equivalent to the ratio of "five carats to the gram"; which are the weight units used to weigh finished and rough opal respectively. In simple terms, a low yield of one to two carat per gram of rough should be expected from rough and therefore the price or value of rough should be 20% or one-fifth of the price or value of the finished stone that can be made from the rough; thus leaving adequate value to cover the cost of cutting, waste loss and risk while providing for a profit.

Opal is a difficult stone to value and there are many factors which influence the market value. The main factors affecting value are:

a. Type of Opal,
b. Brightness of Fire,
c. Base Color,
d. Fire Color,
e. Fire Pattern,
f. Rarity,
g. Cut,
h. Consistency of Fire.

Note: Please refer to Opal Identification and Value by Paul B. Downing, Ph.D.; 1993 for full details as they are to extensive to summarize herein.

All of these factors must be considered in the determination of the value of finished opal stones that have been cut from material mined from the Klinker claims.

A basic system for evaluating the Okanagan Opal deposit has been established as part of the 1994 Klinker Project. It has been determined that the following steps must be taken in order to evaluate this deposit:

1. Taking any sample block of rock, first measure the volume and calculate a weight for the material to be removed as a sample;
2. Remove the sample volume of material and sort to collect all opal contained;
3. Grade the opal bearing material into two classifications - cuttable and specimen;
4. Sort all cuttable material into its proper type classification - ie. solid, boulder or composite (doublet or triplet) stones;
5. Process all cuttable material into finished "gemstones";
6. Grade and price the finished gemstones and determine the total value of finished stones;
7. Sort and grade the specimens and determine a total value for all of the specimens;
8. Add together the total price of the finished stones made from the cuttable material and the total price of the specimen material to determine gross value of the block of rock sampled;
9. Delineate areas of equal "opal grade" by visual and physical inspection and sampling;
10. Combine and average the value of the various sample blocks within each specific grade zone and determine a weighted average value;

Having eventually sampled and evaluated numerous blocks of material an overall determination of grade or value of the exposed blocks of opal bearing material can be established.

The following Opal Description Tables (Table 1 & 2) show the great variety occuring just in the base color of the opal found at the Okanagan Opal site. These have been broken down into two groups; precious and common (non-precious).

Each of these groups contains commercial grade opal which can become part of the gross value of the sample and the deposit. Only after determining the value of the finished stones can the value of the rough be determined. Paul Downing has determined the retail market value of the first forty-eight (48) finished opal stones crafted from rough material sorted from rock excavated from the Company's opal deposit. These stones have been cut from Okanagan Opal rough extracted from the Klinker claims during the 1994 program or from late 1993 work. The value of these finished stones and others presently being cut will be used to provide a basis upon which the value of the Okanagan Opal deposit can be evaluated. The finished stones will also provide an inventory base for the retail portion of the business.

The following Opal Grading Chart has been developed in order to catalog finished (cut) stones and thereafter to tabulate the determined description and overall value of finished opal gemstones. The description and value of the above reference cut stones are shown on these charts (Charts 1 & 2).

Although processing of material mined during 1994 is still ongoing, it is estimated that the retail market value of the finished opal from the material mined will be in the order of $30,000 to $50,000; suggesting a gross value of $139 to $232 per tonne for the 215 tonnes of opal bearing material sampled. Considering that the material excavated during 1994 was not selected for its precious opal content it is believed that an average gross retail finished product value of $200 to $250 per tonne, or greater, can be expected once selective mining occurs.

Assuming 90,000 tonnes at a gross value of $200 per tonne a gross value of $18 million dollars is indicated. Conversely, assuming 180,000 tonnes at a gross value of $250 per tonne a gross value of $45 million is indicated.

Legal Survey -

In preparation for taking the central two claims to lease, a claim location line and claim perimeter survey was conducted on the Klinker 1 and 2 mineral claims. The survey, conducted by McElhanney, also covered the central portion of the Ewer claims which form part of the property. In addition to establishing controls for the Klinker claims the survey consisted of traversing to various claim post to establish their position relative to the Klinker claims. GPS (Satellite) observations between the Vernon integrated survey network and stations established on the Klinker claims location line were used to establish the meridian through the initial post of the Klinker 1 and 2 mineral claim.

PRECIOUS OPAL

DESCRIPTION			OPAQUE	TRANSLUCENT	TRANSPARENT
BASE COLOR		CODE	1	2	3
BLACK		A	n/a	n/a	faces up black
					with play of color
ORANGE		B	n/a	n/a	orange base color
					with play of color
RED		C	n/a	n/a	n/a
AMBER		D	n/a	amber	amber
				with play of color	with play of color
YELLOW		E	n/a	yellow	yellow base color
				with play of color	with play of color
CLEAR		F	n/a	semi-clear	clear
				with play of color	with play of color
WHITE		G	white base color	semi-'white	n/a
			with play of color	with play of color	
GREEN		H	n/a	n/a	n/a
SALMON/PINK		I	n/a	n/a	n/a
CARAMEL		J	caramel	caramel	n/a
			with play of color	with play of color	
BROWN		K	brown	brown	faces up brown
			with play of color	with play of color	with play of color
BLUE		L	blue	blue	n/a
			with play of color	with play of color	

TABLE 1

COMMON OPAL (no play of color)					
DESCRIPTION		OPAQUE	TRANSLUCENT	TRANSPARENT	
BASE COLOR	CODE	4	5	6	
BLACK	A	black base color	black base color	faces up black	
ORANGE	B	orange base color	orange base color	orange base color	
RED	C	n/a	red base color	red base color	
AMBER	D	n/a	amber	amber	
YELLOW	E	n/a	yellow base color	yellow base color	
CLEAR	F	n/a	semi-clear	clear	
WHITE	G	white	semi-white	n/a	
GREEN	H	green	n/a	n/a	
SALMON/PINK	I	salmon/pink	n/a	n/a	
CARAMEL	J	caramel	caramel	n/a	
BROWN	K	brown	brown	n/a	
BLUE	L	blue	n/a	n/a	

TABLE 2

PRECIOUS OPAL - GRADING CHART - cut stones

SAMPLE NUMBER	OPAL TYPE: SOLID OPAL	BOULDER OPAL: MATRIX	BOULDER OPAL: VEIN	BOULDER OPAL: % Opal	Base Color Code	DESCRIPTION OF COLOR/PATTERN	Brightness Code	Weight (carats)	Size mm.	Price Information RETAIL (CDN $)	Other Comments
# 1		doublet		80%	off white	Green multi-clr. - Broad Flash	4.5		8x10	$40	pendant - directional
# 2		doublet		20%	crystal	Green/Orange - Flash	3		8x10	$20	pendant or ring
# 3		doublet		25%	crystal	Green - Flash	2.5		10x12	$20	pendant
# 4		doublet		70%	white	Red multi-color - Flash	4		13x18	$100	pendant
# 5		doublet		20%	white	Green/Red - Flash	3.5		13x18	$40	pendant - earring (match with #17 or #6)
# 6		doublet		15%	white	Red multi-color - Flash	3		13x18	$25	pendant - earring (match with #17 or #5)
# 7		doublet		15%	white	Green multi-color - Flash	4		13x18	$30	pendant
# 8		doublet		20%	white	Green mult-clr. -Rolling Flash	3.5		13x18	$30	pendant
# 9		doublet		50%	blue	Green/Blue - Flash	2.5		8x10	$40	pendant or ring
# 10		doublet		80%	semi-cryst	Green/Orange - Flash	3.5		8x10	$60	pendant or ring
# 11		doublet		90%	semi-cryst	Green/Blue - Rolling Flash	4		8x10	$40	pendant
# 12		doublet		60%	semi-cryst	Green/Blue - Rolling Flash	4.5		10x12	$95	pendant
# 13		doublet		60%	crystal	Red/Green - Flash	2		10x12	$20	ring
# 14		doublet		60%	semi-cryst	Red multi-clr. - Rolling Flash	3		10x12	$40	pendant
# 15		doublet		30%	semi-cryst	Green/Blue - Flash	2		10x12	$20	pendant or ring
# 16		doublet		90%	semi-cryst	Green/Blue - Flash	4		10x14	$155	pendant
# 17		doublet		30%	white	Red multi-clr. - Rolling Flash	3.5		13x18	$60	pendant or ring or earrings w/ #5 or #6
# 18		doublet		90%	semi-cryst	Green/Blue - Flash	3.5		13x18	$245	pendant
# 19		triplet		100%	crystal	Blue/Green - Flash	4		5 Rnd.	$15	matching pair - earrings
# 20		doublet		80%	white	Green/Blue - Flash	4		6x8	$40	pendant
# 21		triplet		100%	crystal	Green/Orange - Flash	2		8x10	$20	pendant
# 22		doublet		40%	semi-cryst	Green multi-color - Flash	4		8 Rnd.	$40	pendant
# 23		doublet		80%	white	Red multi-clr. - Rolling Flash	4.5		4x6	$40	pendant
# 24		doublet		30%	blue	Green - Flash	3		6x8	$25	ring -silver

CHART 1

PRECIOUS OPAL - GRADING CHART - cut stones

	OPAL TYPE				Base					Price	
SAMPLE	SOLID	BOULDER OPAL			Color	DESCRIPTION OF	Brightness	Weight	Size	Information	Other
NUMBER	OPAL	MATRIX	VEIN	% Opal	Code	COLOR/PATTERN	Code	(carats)	mm.	RETAIL (CDN $)	Comments
# 25	yes			100%	white	Red multi-color - Rolling flash	3	2.3	7x13 f/f	~$320.	Pendant/Ring - custom set in gold
# 26	yes			100%	white	Red multi-color - Flash	3	0.8	6x8	$70	Ring - set in gold
# 27	yes			100%	white	Red multi-color - Flash	3	1	6x8	$70	Ring - set in gold
# 28	yes			100%	white	Red multi-color - Flash	3.5	0.6	5x7	$245	Ring - set in gold
# 29	yes			100%	white	Red multi-color - Flash	3	0.35	5 Rnd.	$25	Pendant/Ring - set in 4*6 gold
# 30	yes			100%	orange	Red multi-color - Flash	3	0.35	4x6	$40	Pendant - set in gold
# 31	yes			100%	white	Red/Green - Flash	3	0.05	4x6	$50	Ring
# 32	yes			100%	white	Red multi-color - Flash	3	0.55	4x6	$25	Ring/Pendant
# 33	yes			100%	orange	Green/Red - Flash	3	0.3	4x6	$25	Pendant - silver
# 34	yes			100%	white	Green - Flash	2	0.3	3x6	$20	Ring - marquis - silver
# 35	yes			100%	off white	Red - Flash	3	0.3	3x6	$30	Ring - marquis - silver
# 36	yes			100%	white	Red multi-color - Flash	2	0.4	4x6	$20	Ring - silver
# 37	yes			100%	off white	Green - Rolling Flash	4	0.5	4x8	$60	Pendant - gold
# 38			doublet	100%	White	Red - Flash	3		4x6	$30	Pendant - silver
# 39		yes		30%	semi-cryst	Green/Blue - Broad Flash	5		large	$150	wire wrap
# 40			yes	60%	Orange	Red multi-color - Flash	3.5		large	$100	wire wrap
# 41		yes		30%	White	Red/Green - Broad Flash	4		large	$75	wire wrap - directional
# 42			doublet	90%	Orange	Red multi-color - Flash	3.5		large	$75	wire wrap - directional
# 43			yes	30%	semi-cryst	Red multi-color - Flash	3.5		med large	$75	wire wrap - horizonal - pin??
# 44			triplet	40%	semi-cryst	Orange/Green - Flash	3.5		very large	$125	wire wrap
# 45			triplet	50%	crystal	Green/Orange - Flash	4		very large	$100	wire wrap
# 46			yes	80%	white	Green/Red - Flash	2.5		very large	$75	wire wrap
# 47			yes	50%	semi-cryst	Green/Orange - Flash	4		large	$200	custom set in gold
# 48			yes	60%	Orang/wht	Red multi-color - Flash	4		very large	$350	custom set in gold

CHART 2

As part of the survey of the Klinker claims it was necessary to cut out the and otherwise mark the perimeter of the two mineral claims. The perimeter line cutting was done as the survey was being conducted. In total 2200 metres of one to two metre wide line was cut out of the bush to mark the boundary and to provide line of site for the survey. The remaining 1300 metres was marked using rock cairnes and pickets between traverse hubs. At each turning point a steel pin was set to serve as a survey hub or station; each hub was marked with a numbered tag. See a preliminary, unapproved version of the survey plan for District Lot 5251 reproduced herein at a scale of 1:10,000.

Traverses were run from established control points on the Klinker claims to tie-in several of the Ewer claim posts. GPS control point was also established on two of the traverse stations on the northern claim line in order to determine precise locations for the Ewer 15 to 18 mineral claims. See claim locations as noted on the 1:10,000 scale plan (Plan # 1).

Other Studies Conducted:

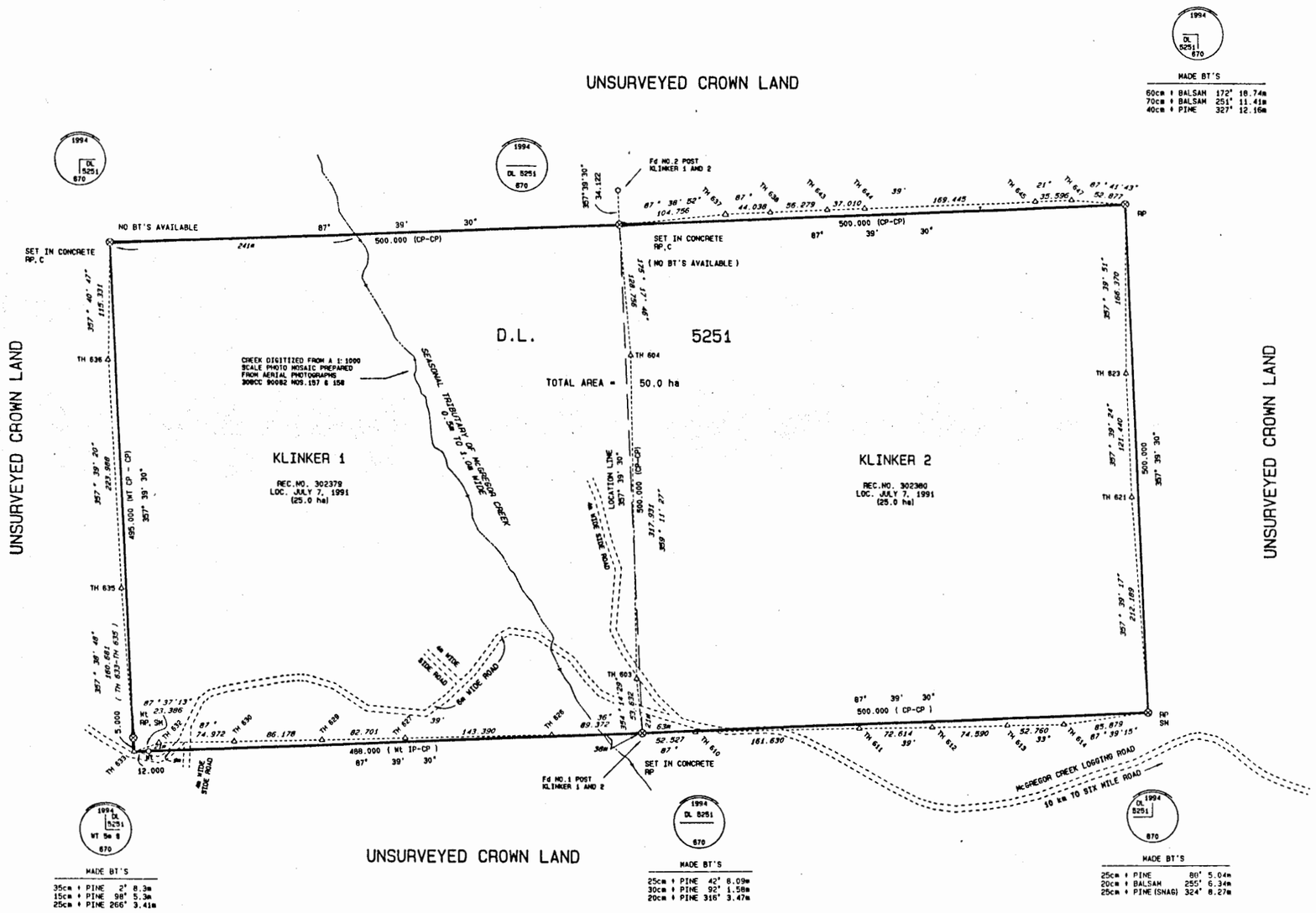
Water levels in two of the ponds on the Klinker # 2 claim were moitored over the summer of 1994. Measuring stakes were set out on July 10, 1994 in the south-east (SE) and the north-east (NE) water ponds (see Map # 6 for location of monitoring sites) and water depths were 12 inches and 19 inches respectively. On July 19th. the water levels were read and the SE depth was 9 inches while the NE depth was 61 inches; each had dropped 3 inches. As of July 23 the SE water depth was 8 inches and the NE depth was 15 inches; a drop of an additional 1 inch at each site. On August 1st. the depths were; SE : 5 inches, a drop of 3" and NE : 11 inches a drop of 4".

During all of this period there was no rain fall to add surface runoff to these ponds. All other ponds and swampy areas, particularly those at lower elevations, virtually dried out - no standing water was left although the ground was locally too wet to walk on.

As of August 8th. the water depths were: SE : 2 inches, drop of 3 inches and NE : 9.25 inches, a drop of 1.75 inches. Light rain started to fall earlier on this date which was the first rain since July 1st., 1994. Some additional light rain fell over the next month.

As of September 12th. the water depths were: SE : 0 inches, a drop of 2 inches or more and NE : 5 inches, a drop of 4.25 inches. The ground at the SE site was still satuated but there was no standing water at the monitoring point.

It is interesting to note that as of August 1st. the water in the SE pond dropped at a faster rate than that in the NE pond and this trend continued till the last reading was taken on Sept. 12, 1994. The trench located on the east edge of the Discovery zone "made water" (noticeable water flow) throughout the summer. The NE waterhole was used as a water source for the washing plant during mid to late September. Several thousand gallons of water were pumped out at various sites in the pond, including the



SURVEY PLAN OF DISTRICT LOT 5251 BEING KLINKER 1 AND KLINKER 2 MINERAL CLAIMS, OSOYOOS DIVISION OF YALE DISTRICT.

B.C.G.S. 82L.033

VERNON MINING DIVISION

SCALE: ~~1:2500~~ **NOTE : THIS IS A 50% REDUCTION OF THE ORIGINAL**

0 50 100 150 200 250

(ALL DISTANCES ARE IN METRES)

LEGEND

BEARINGS ARE ASTRONOMIC, DERIVED FROM GPS OBSERVATIONS BETWEEN VERNON INTEGRATED MONUMENTS 7542945 AND 7542950, AND TRAVERSE STATIONS 603 AND 604, AND ARE REFERRED TO THE MERIDIAN THROUGH THE CAPPED POST AT No.1,KLINKER 1 AND 2.

BT BEARINGS ARE MAGNETIC.

SYMBOLS FOUND	SYMBOLS PLACED	DESCRIPTION
	⊗	STANDARD CAPPED POST
	O	STANDARD IRON POST
	△	TRAVERSE HUB WITH TAG No.
	RP	DENOTES REFERENCE POST
	SM	DENOTES STONE MOUND SET AROUND CORNER
	C	DENOTES ROCK CAIRN
	BT	DENOTES BEARING TREE
	Wt	DENOTES WITNESS
	ha	DENOTES HECTARES

I, PAUL BARTLETT, A BRITISH COLUMBIA LAND SURVEYOR OF SURREY IN BRITISH COLUMBIA, CERTIFY THAT I WAS PRESENT AT AND PERSONALLY SUPERINTENDED THE SURVEY REPRESENTED BY THIS PLAN AND THAT THE SURVEY AND PLAN ARE CORRECT. THE SURVEY WAS COMPLETED ON THE 7th DAY OF NOVEMBER, 1994.

Paul Bartlett B.C.L.S.

KLINKER PROPERTY

McGregor Creek Area, B. C.
Vernon Mining Division

LEGAL SURVEY PLAN
KLINKER 1 AND 2 MINERAL CLAIMS
PROPOSED DISTRICT LOT #5251

OKANAGAN OPAL INC.

DATE:	SCALE	MAP No.
Jan. 1995	1:5000	5

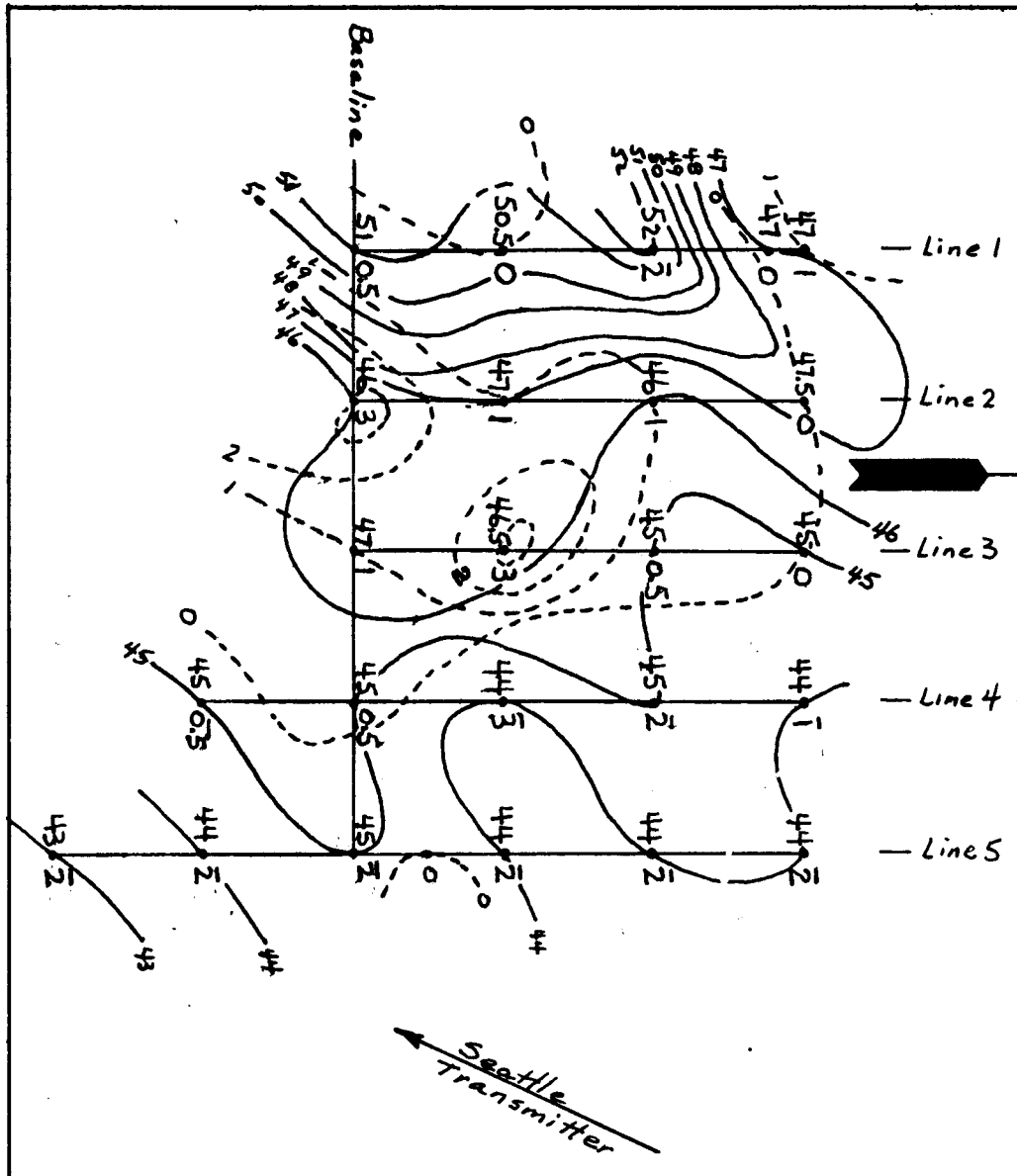
McELHANNEY ASSOCIATES
PROFESSIONAL LAND SURVEYORS
13160-88th. AVENUE
SURREY, B.C. V3W 3K3
PHONE: (604) 596-0391
FILE: 2112 05803-1

monitoring site, which brought the water depths to a level were availability was intermittent; although there was always standing water. No perceptible increase in water level was noted after pumping ceased and no further readings were taken.

Initial program plans included a VLF-EM survey and a soil geochem survey however these were not conducted. A test VLF-EM survey in the Discovery zone area was conducted on ten foot centres. Not enough data was collected to compile meaningful results however it does appear that some value will be obtained from a larger survey. This larger VLF-EM and soil sampling program was scheduled in conjunction with another job being conducted in the Vernon area however early heavy snowfall obscured the temporary grid that was to be use for control. The geophysical and geochemical work will be conducted at some later date as it is still believed that this will assist the mapping of major geological and structural features which are known to be important in the distribution of opal. Several rock samples are being selected for whole rock geochemical analysis however they have yet to be submitted for analysis. All other phases of the proposed 1994 program have been completed and a total of $113,000 was spent as of October 31, 1994. In addition, some $10,000 has been spent on the project since that date.

Involvement of The University of British Columbia - Department of Geological Sciences, Minerology Section -

Under the direction of Professor Lee A. Groat, undergraduate student David Awram has undertaken to pursue a thesis study on the Okanagan Opal deposit. This study has to date include an extensive literature search to provide background information on opal deposits from around the world. To date two trips have been made to the property during which opal samples and rock samples were collected for study. In addition some structural mapping was conducted and water samples were collected from several waterholes. A summary of the field work, research and lab work prepared by David Awram can be found in Appendix I.



LEGEND

VLF-EM Grid baseline

• Station Line 1——•—— Surveyed lines

Field strength reading 47•3 dip < reading (unfiltered)

50 Field strenth contours

2 dip < contours

KLINKER PROPERTY

McGregor Creek Area, B. C.
Vernon Mining Division

VLF-EM TEST SURVEY PLAN FIELD STRENGTH AND DIP ANGLE READINGS

INSTRUMENT USED: SABRE MODEL 27 RECEIVER
STATION USED: SEATTLE - Frequency 18.6 KHz.

OKANAGAN OPAL INC.

DATE:	SCALE	MAP No.
Jan. 1995	2cm = 3.048m	7

Summary:
The work conducted during the 1994 season has proven the existence of precious opal over a significant area on the Klinker claims. A second horizon, located at the top of the main ridge on the Klinker 2 claim also exhibits precious opal. The precious opal and much common opal is located within a sequence of Eocene Age volcanoclastic rocks. The full extent of the opal deposit is as yet undetermined and the full economic potential is not yet known. Based on the results of the 1994 program it is very evident that this deposit will produce enough opal to supply the marketing needs of a small scale, vertically intigrated opal cutting and marketing business targeted at the tourists visiting the Okanagan Region of British Columbia. It is conceivable, based on projections of the deposit and the regional geology that this is not the only precious opal deposit in the area.

Bibliography:

Downing, Paul B. (1984) Opal Cutting Made Easy

Downing, Paul B. (1993) Opal Identification and Value.

Downing, Paul B. (1994) Opal Market News, Volume 1, Number 2.

Statement of Costs :

Project Expenses -

Summary of monthly costs submitted re Grant # 94/94M-55

Project Management and Administration	$ 17,500
Wages	$ 15,512
Geological Mapping	$ 3,700
WCB	$ 1,315
Consulting Fees	$ 5,150
Equipment Rental & Contract	$ 27,396
Vehicle Rental	$ 17,763
Gas/Fuel	$ 2,900
Camp Set-up & Supplies	$ 6,032
Field Supplies and Materials	$ 2,616
Radio/Cell Phone Rentals	$ 760
Legal Survey	$ 11,891
Cutting Shop Rental	$ 3,000
Cutting Shop Supplies/Equipment Rental	$ 1,470
Total	$117,005

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Certificate of Qualifications

I, Robert W. Yorke-Hardy, of Vernon British Columbia, do hereby certify that:

1. I am a Mining Technologist residing at 330 Stepping Stones Road, Vernon, British Columbia. I am the owner/operator of Y-H Technical Services Ltd. of P.O. Box 298, Vernon, B.C., an exploration services company. In total I have accumulated 29 years of experience in Mining/Mining Exploration and related industries. Y-H Technical Services Ltd. provides management services to Okanagan Opal Inc. on the Klinker Project.
2. I am a graduate of the British Columbia Institute of Technology, Burnaby, British Columbia and a registered charter member of the Association of Applied Science Technologists and Technicians of British Columbia. I have practiced my profession for 24 years.
3. This report is based on work performed by myself, under my direction or other wise in my presence. The total value of the work performed has been detailed in the foregoing Cost Statement. This sum is to be considered as eligible expenses incurred on the Klinker Project and they are therefore submitted in support of payment of Grant 94/95 M-55.
4. This report is based on knowledge and experience gained over the period 1991 to the present. I am familiar with the geology of the McGregor Creek area and surrounding district.
5. I am a claim title holder of record on the Klinker and Ewer mineral claims. These claims are under option to Okanagan Opal Inc. which is a company in which I own a controlling interest.

Y-H Technical Services Ltd.,

R. W. Yorke-Hardy, A.Sc.T.
February 20, 1995

APPENDIX I

Discussion Prepared by David Awram

Okanagan Opal Project
David Awram
B.Sc. Thesis Project
January 6, 1993

To graduate from the University of British Columbia with a B.Sc. (Hon.) degree, I am required to complete a thesis. The thesis topic I have chosen to pursue is on a new find of precious opals found near Vernon, B.C. Working with the Okanagan Opal Company and the president Bob Yorke-Hardy, I will be able to complete the thesis.

Although not yet complete, I have done much work on the project up to date. An extensive literature search has been performed providing background information on the structure, properties, genesis, worldwide occurrences, and local information of opals. This, in turn, has allowed for collection of data on the project. The first step taken was a visit to the site. Many samples of host rock and opals were sampled. Also abundant minerals found in the area were sampled. A map of the local geology was started. The minerals found were identified at the lab at U.B.C. using powder X-ray diffraction. These minerals are listed in appendix 1. X-ray diffraction patterns were made for the opals were collected using powder X-ray diffraction and compared to similar data found in literature. Many of the samples have been prepared for viewing in a scanning electron microscope (SEM), which will been done soon. Also some of the samples will be analyzed for X-ray diffraction patterns using a Gandolfi camera. The lakes present on the area had water samples taken and analyzed for silica content to determine their involvement in opal formation. The maps of the local geology have been digitized for ease of use and reference.

Much more work is proposed to be for the project. Full SEM analyses will be done on many samples of opals and other minerals found on the site to determine characteristics of the minerals present on the site, particularly the structural characteristics of the opals. Further powder and crystal X-ray diffraction analyses will be done on the opals. Thin sections and possibly geochemical analyses of the host rocks will be done to determine stratigraphy and any possible chemical role they may have in the opal formation. If the resources can be obtained, I would pursue using ground penetrating radar to obtain data on the thickness and stratigraphy of the flows and lahars in which the opals occur.

This is a summary of the work that has been done on the project to date, and is what is proposed to do in the future.

Appendix 1: Minerals identified on the site

OPAL-2: Chabazite
OPAL-4: Kutnohorite
OPAL-4B: Saponite
OPAL-6: Chabazite
OPAL-8: Quartz
OP-9-2: Quartz
OP-9-5: Glauconite
OP-9-7: Tridymite

Water Analysis Information (Table # 3) -

WATER ANALYSES

Silica analyses were performed on six small lakes and ponds found on the property and in the surrounding area show as follows:

Silica Content in Micrograms per Litre (ppb)		
Location	**June 16-17**	**September 12**
W1	57.0	276
W2	148	692
W3	4670	DRIED
W4	238	1200
W5	7370	4770
W6	80.0	413

TABLE 3

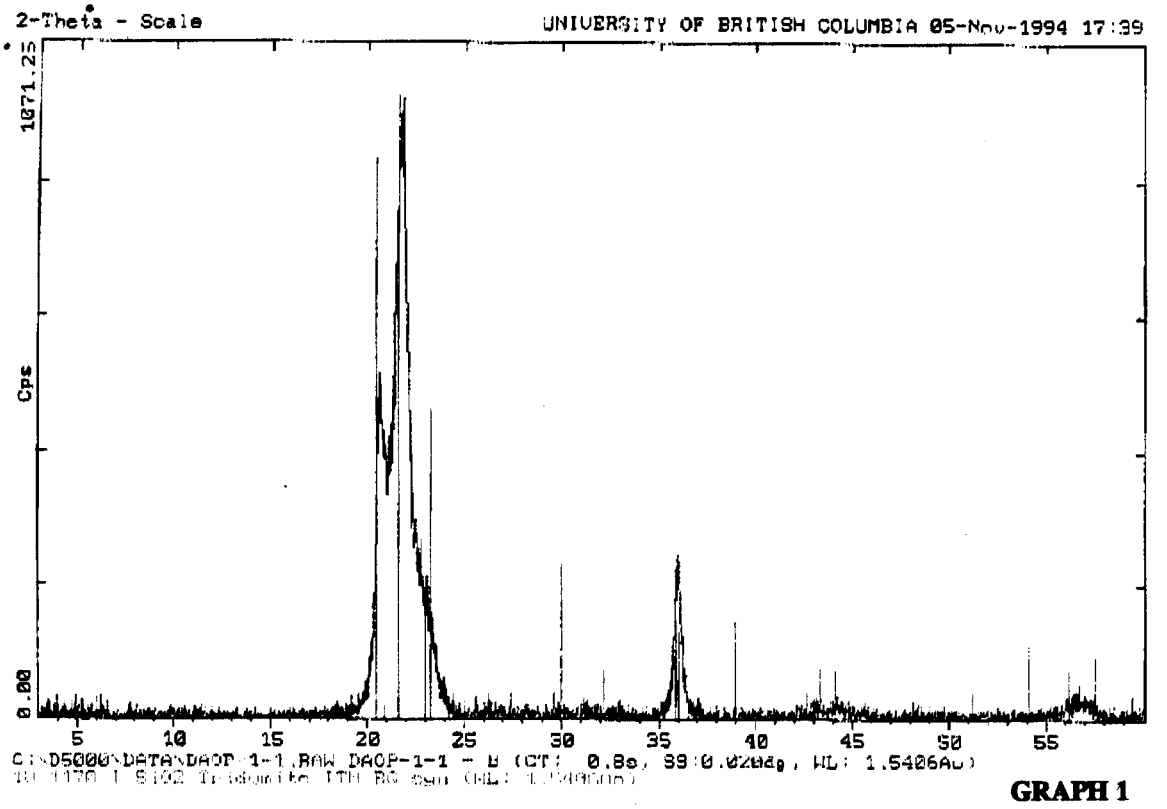
The analyses were done by Elemental Research Inc., using ICP-MS. The lakes that were sampled twice show a definite increase in silica content between June and September. These values are anomalously high for lake water but not high enough to be the water source for the opals. Further sampling is needed to provide any conclusions on the water supply for the opals.

X-Ray Diffraction Information (Graphs 1 to 8) -

X-RAY DIFFRACTION

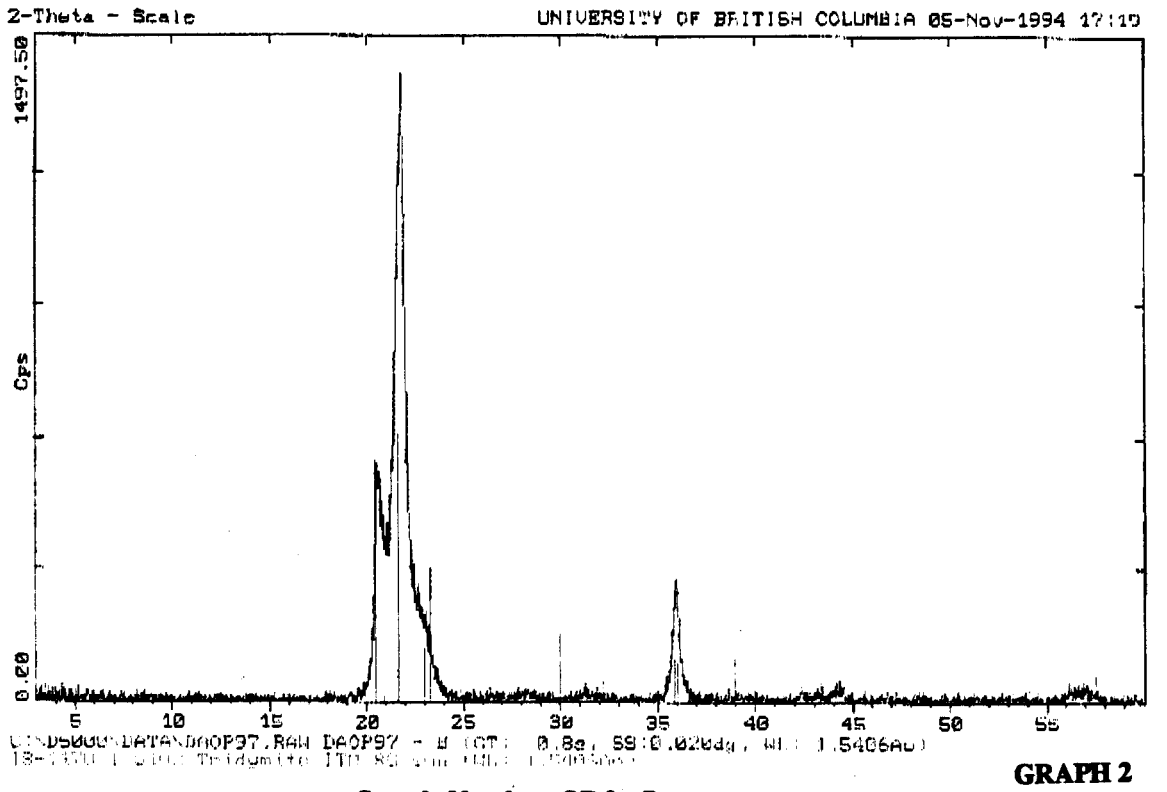
Powder X-ray diffraction was used to identify accessory minerals on the site and to analyse and classify the opals of the deposit using the scheme of Jones and Segnit (1971). The predominant zeolite found on the site was chabazite, a very hydrous mineral found as amygdules in scoriaceous clasts. Kutnahorite is type of dolomite and was found lining the smaller vesicles of the clasts. Saponite was found with the kutnahorite; it is a hydrous magnesium rich end member of the smectite group.

All of the opal types found at the site were analysed using a Siemans D5000 X-ray powder diffractometer operating at 40 kV and 30 mA were found to be Opal-CT, the disordered α-cristobalite, α-tridymite type with some variation. Most of the common opal of all types had a pattern classified as higher Opal-CT, but one sample exhibited crystallinity of low Opal-C (well ordered α-cristobalite). The precious opals showed a more amorphous pattern but still are classified as Opal-CT. The most amorphous pattern was from an orange transparent opal, but the pattern is still classified as a low Opal-CT. These results are irregular since most opals, both precious and common, from different localities are usually classed as Opal-A.



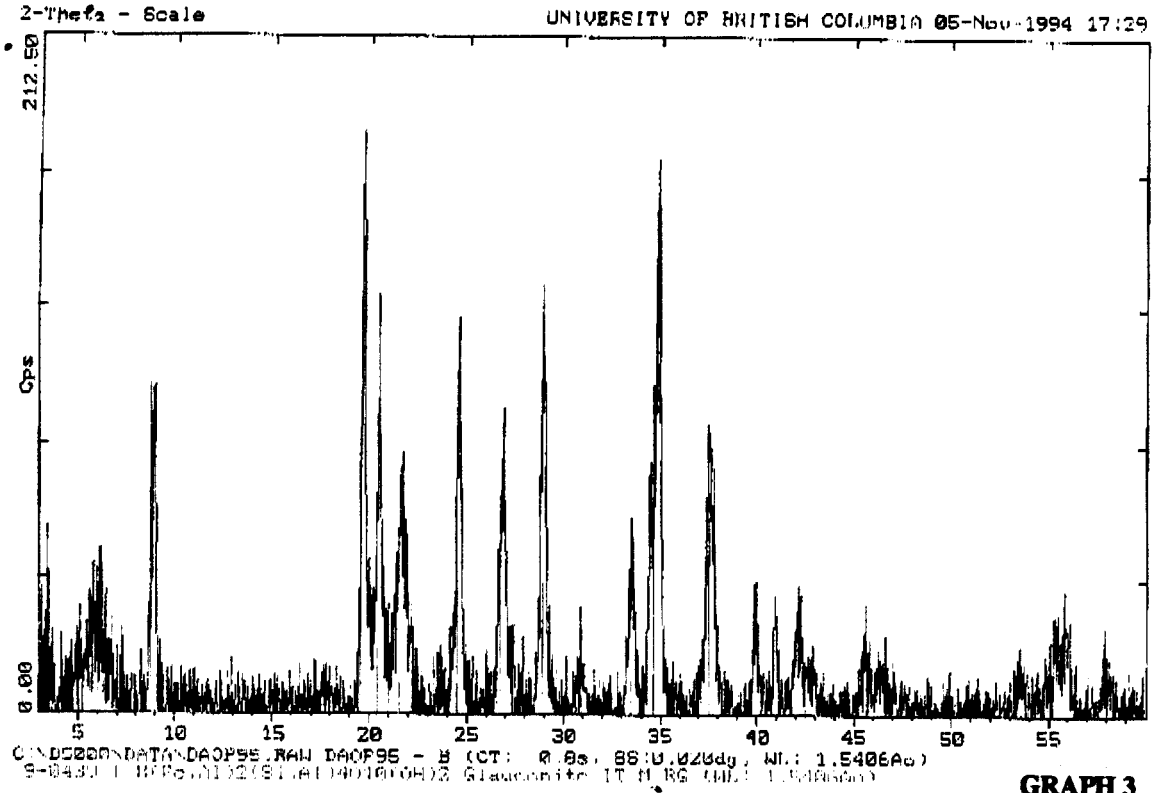
GRAPH 1

Sample Number: Opal 1 - 1
Mineral I.D.: Tridymite



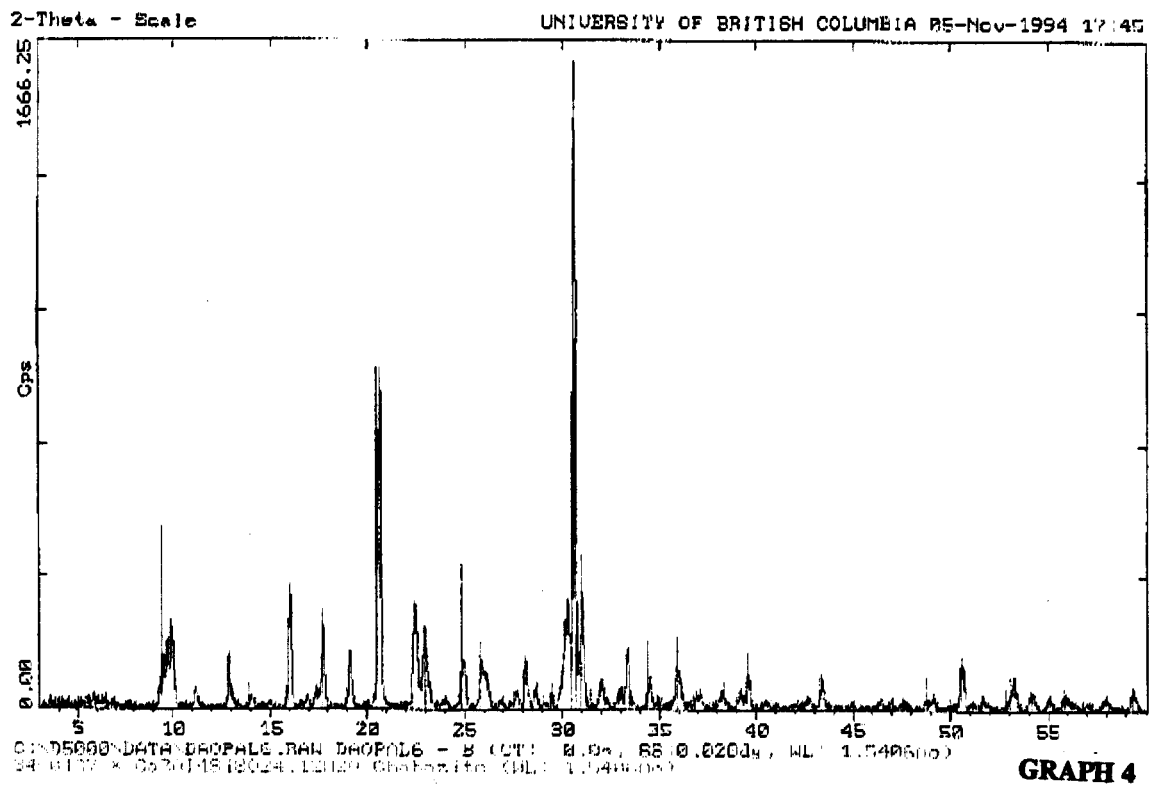
GRAPH 2

Sample Number: OP 9 - 7
Mineral I.D.: Tridymite



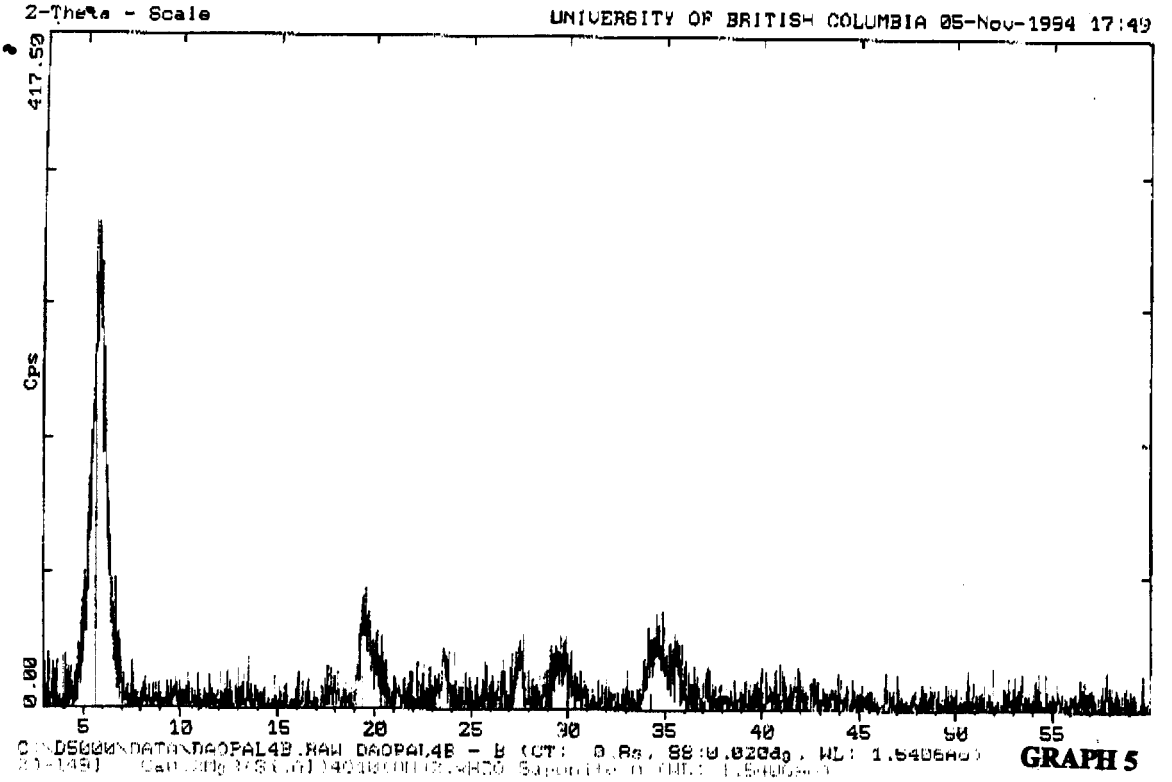
GRAPH 3

Sample Number: OP 9 - 5
Mineral I.D.: Glauconite



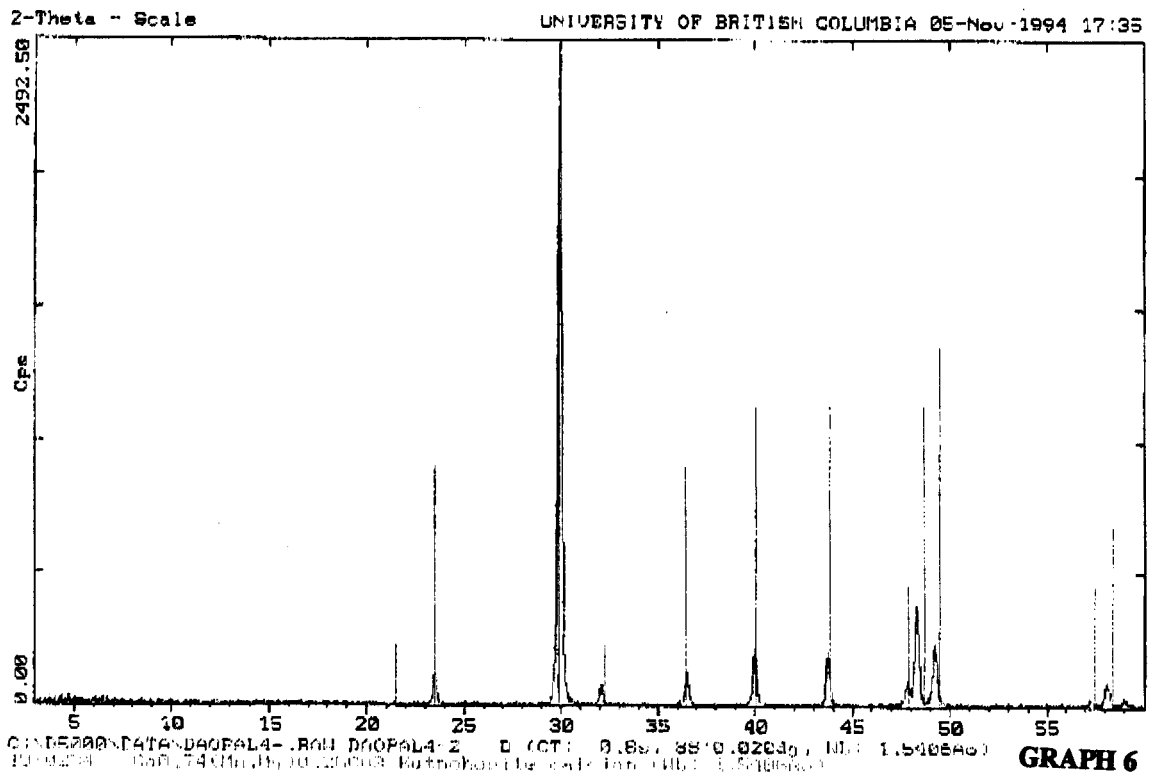
GRAPH 4

Sample Number: Opal 6
Mineral I.D.: Chabazite



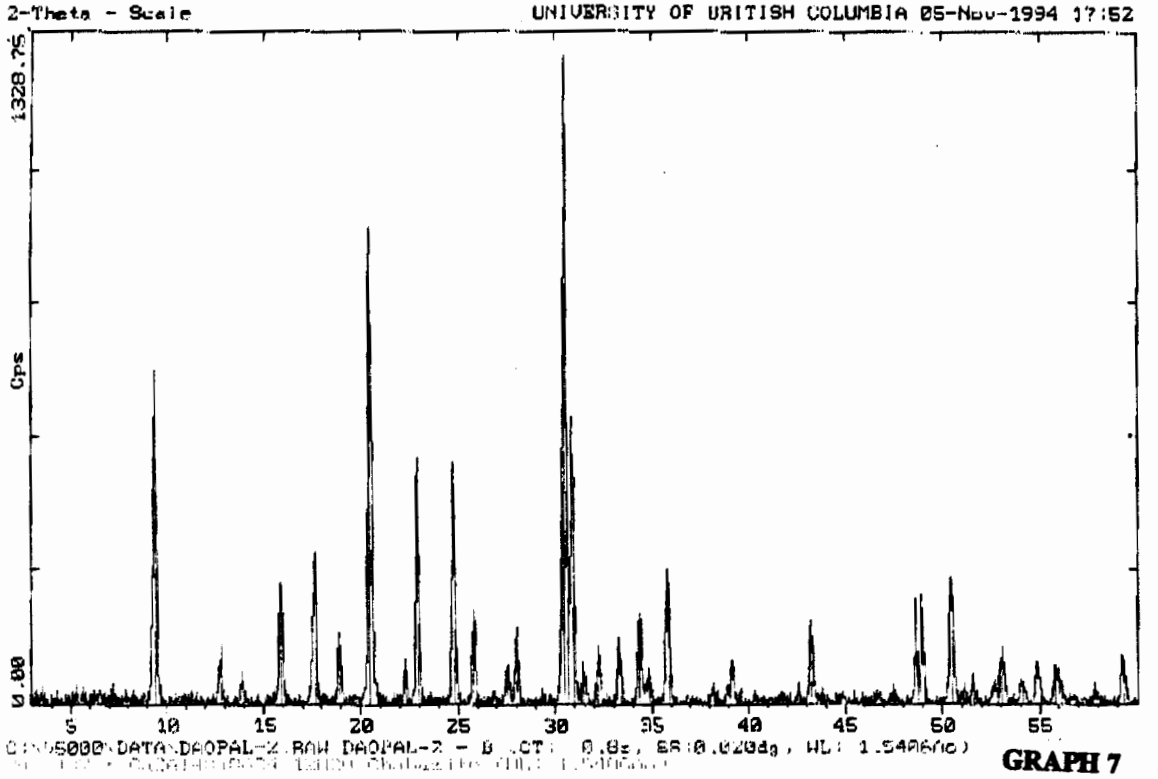
GRAPH 5

Sample Number: Opal 4 B
Mineral I.D.: Saponite



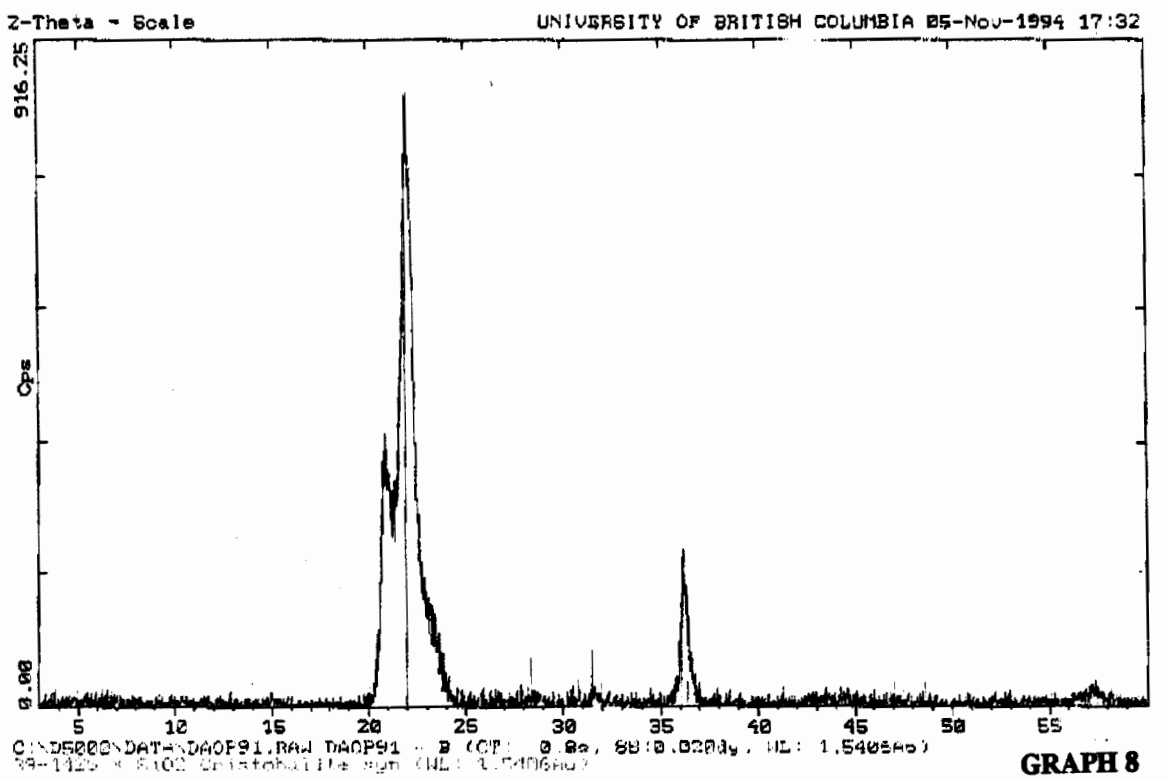
GRAPH 6

Sample Number: Opal 4
Mineral I.D.: Kutnohorite



GRAPH 7

Sample Number: Opal 2
Mineral I.D.: Chabazite



GRAPH 8

Sample Number: OP 9 - 1
Mineral I.D.: Cristobalite

SEM analyses Information (Electron Microscope Image - Okanagan Opal) - Precious 1

SCANNING ELECTRON MICROSCOPY

Using the Scanning Electron Microscope (SEM) it is possible to see the spheres of silica that create the structure of the opal and to see the ordered close spaced packing found in precious opals. Common and precious opals from the Klinker site were gold coated and examined using a Philips XL 30 SEM. At a magnification of 5000 times, lineations can be seen on some of the precious opal samples. They appear to be uniform thickness planes stacked upon each other. At high magnifications of 10,000 to 20,000 times the pattern disappears and a definite sphere structure is not recognizable in any of the samples of common or precious opals. These results coupled with X-ray diffraction results may show that alteration of the opal has occured to a more crystalline form such as cristobalite. More work and analysis will be done on the samples before a defininite conclusion is established.

precious_1

APPENDIX II

Opal Cutting Information Circular Prepared by Paul B. Downing, Ph.D.

Cutting Okanagan Opal

by

Paul B. Downing, Ph.D.

Congratulations!

You now have some of our rare Okanagan Opal which you have purchased with the sweat of your brow and perhaps some bruises as well. Now you want to know how to transform your find into gems for jewelry. This, too, can be great fun. And think of the compliments you will receive when you wear it. Very few people have had the privilege and fun of digging, cutting and wearing their own opal.

Like most opal mines, the Okanagan produces a wide variety of types and grades of opal. It is helpful to think of this output in terms of a pyramid. The large base is the opaque common opal which comprises the majority of opal found in the typical mine anywhere in the world. Above this are better and better grades of opal. In the case of the Okanagan, these intermediate grades consist of opaque common opal with attractive orange, caramel and salmon base colors, opal in basalt, and clear facet opal without fire but with attractive orange, yellow, green, blue and clear base colors. Still further up on the narrowing pyramid are translucent and crystal pieces which cut solid gems. At the very top is great crystal opal with vibrant fire in all the colors of the rainbow. All grades have been found thus far at the Okanagan with the solids representing a good portion of the find. Large chunks of the very top gem crystal represent only 5% or less in most opal mines. I am sure the Okanagan will prove to be quite typical in its quality distribution. Solids have been found in sufficient quantity and quality to prove that this is a serious commercial find. However, as I discovered in my cutting experiments, even material I initially thought was near the bottom of the pyramid can be fashioned into very attractive gems.

Cutting opal from a new find is always a challenge. First I try to relate the material to opal I have cut from other areas so I can draw on past experience. The crystal opal from the Okanagan Opal Mine is most like Mexican material. The second type of opal is a thin seam in or on the basalt. This is most like Queensland boulder opal, although the basalt is quite a bit softer than the Queensland ironstone. The third type is a mixture of opal and basalt best termed boulder matrix opal. Again the basalt is soft. To further stretch my imagination, the basalt is fractured by freezing as all of the mining done so far has been in ground above the freeze line. We expect this to change as we dig deeper.

Cutting Solids:

Cutting the orange crystal does not present any unusual difficulties. Some of it is solid with no fractures. When it has fire throughout the stone, this material is best worked as a high domed cab with a slightly rounded bottom. A thicker stone shows the fire off to best advantage. I prefer not polishing the bottom, as this provides a better background for the fire to play

against. I had cut two pieces from this mine two years ago and they have held together just fine. If you prefer, much of this opal is clear and chunky enough to facet.

Cutting Triplets:

Much of the crystal opal found near the surface has small fractures from freezing or crazing. After numerous experiments, I found that most of this fractured material will make excellent triplets with an unusual fire color and pattern. The typical triplet procedure has to be adjusted a bit for this rough.

First I dry each piece and coat it with super glue to hold it together as it is worked. Next I flatten each piece until I get just to the best color. Make sure you orient the stone so the best color shows when the opal is viewed from what will be the top of the stone. I find it easier to work to approximately the right place with a 220 grinding wheel and finish flattening on a 220 flat disc. Do not go beyond the 220 grit as this slightly rough surface is needed for the paint and glue to stick.

Paint, ugh! Actually this is a trick I learned from Ted Priester in Lightning Ridge. To get a deep dark base color for the stone, spray paint the back of the stone using flat black Testers modelers spray enamel. This paint is specially designed to be compatible with epoxy. It must be flat black because a shiny finish would reflect light off the base and ruin the look of the opal.

Once the paint is dry, I glue it to a base that has also been flattened with a 220 disc. Choice of bases is fairly open. I prefer black jade for its toughness, but I frequently use quartz. Yes, quartz works well because the back of the opal is black. If you look at the commercial triplets made in Australia, you will find that they use painted glass. Glue the back and opal together using 330 epoxy. *Make sure* you do not touch the two surfaces with your fingers as oil can cause the glue to form air bubbles. Allow the glue to set 24 hours. I use a 100 watt light about 6 inches above the stone to heat it as it sets. This seems to produce a better seal.

Next grind the excess opal off the top of the stone. You can saw it off, if it is quite thick. This may enable you to get more than one triplet from a piece of rough. I have found that most of the Okanagan Opal needs to be left 1 to 2 mm thick for best color, much thicker than I would leave opal from Australia or Spencer, Idaho. Again, I use a 220 wheel until I am about right and finish off with the 220 disc. At this point some stones may have fractures which will show in the final product. Most of these fractures can be filled with the filler portion of Opticon. It is not necessary to complete the hardening step as gluing on the cap will do this for you.

The choice of caps is a matter of what you intend to do with the piece. The standard size ovals are fine if you will mount the stone in a standard setting. Alternatively, a slab of clear quartz can be used. I use the lab grown quartz because it does not have the internal flaws of some natural quartz. Remember to keep both surfaces clean and free of finger oil. Glue with 330 epoxy and cure as above. Once the glue is set, the top may be fashioned into any shape you desire. The sides should be left almost straight from the bottom of the base to a little above the top of the opal. This prevents thin edges on the opal. A

medium dome is best as this enhances the color without distorting the pattern too much. Okanagan Opal has already produced some excellent triplets using this technique for cutting.

Setting Triplets: Here is a setting point you may want to consider. The main problem with any assembled stone is separation of opal and glue as the piece is worn. To help prevent this, use a bezel all the way around the stone that is a little higher than the top of the opal part of the triplet. When you set the piece, put epoxy in the bezel before you turn it or put down any prongs. This epoxy helps seal the seams in the triplet (or doublet). If you do this, the piece will last many years.

Cutting Boulder Opal Doublets:

The boulder seam and boulder matrix material presented a much greater challenge in cutting. Some of this material is much more attractive wet than dry. Other material is better dry. The problem is how to keep the one material looking like it does when wet and the other looking like it does when it is dry. After a week of experiments, this is what I came up with.

I grade the opal rough wet first. Then I allow it to dry completely. Some material will loose water as it dries and turn white. Such material is called hydrophane opal. As this material dries, often the fire intensifies into something truly spectacular. But this type of opal is too soft to be polished as is for jewelry. Furthermore, the basalt is often fractured or crumbly.

To save these beautiful pieces for jewelry, some sort of glue must be used to hold them together and to glue on a quartz cap for strength and protection. But the epoxy glue makes the opal look like it does when it is wet, not dry. For those pieces which look better wet, this is no problem. I make a doublet of a different type, one where the opal and basalt are the base and the quartz is the top; a reverse doublet or the top two thirds of a triplet. As I flatten the stone I use epoxy to insure that it holds together, as I have found many hidden fractures in the basalt which come apart just about when you have the piece flattened. If there are some areas of the face which still have pits in them, the quartz top can still be attached. Just be careful to get any air bubbles out that might be trapped in them. Leave the back fairly thick. I also give the back surface a thin coating of super glue after completion just to insure it does not break on one of those hidden fracture lines during wear.

For those pieces which look better dry, the procedure is modified somewhat. Use super glue on such pieces. Super glue them in the rough to help them hold together as they are worked. Flatten the face wet. The color will be partly lost as the stone gets wet during cutting, but have no fear. It comes back as it dries again. When you think you are at the right point, dry the piece completely (it takes several hours). Now put a thin layer of super glue on the flat surface to seal it. This will prevent the epoxy from penetrating the opal and making it look wet (and less bright). Glue the quartz cap on with epoxy and let it set.

Finally, and this is very important, grind and sand the back to desired shape and thickness *dry*. I found that water will penetrate the rather porous basalt. This may change the color of the opal and/or separate

the quartz cap. Be sure to use a mask to prevent inhaling the dust. After shaping and sanding only to medium grits, I add a coating of super glue to the back to seal against water penetration when the piece is worn.

With the modified procedures, I have been able to produce some truly outstanding doublets from material that might otherwise be thrown away.

Floating Opals:

You may have a nice collection of small chips from your digging. Such chips can be used in vials with mineral oil to produce floating opals. Here it is important to lightly grind away any matrix still on the chip as this matrix is not very attractive in a floating opal.

It is also important that you get all the air bubbles out of the vial. It helps to place the chips in mineral oil for 24 hours before putting them in the vial. Stir them gently to release any air bubbles clinging to a chip. Place them in the vial with tweezers with a lot of oil still clinging to them. The vial should already be full of oil and free of air bubbles. Once full, seal the vial. Use epoxy to insure that the seal is tight and permanent, as a leaky vial is a mess and the air leaks back in to ruin the look you worked so hard to achieve.

Chip Cabs: Another use for chips is the chip cab. The idea is to use the chips like the center of a triplet. Make a cup out of aluminum foil. Soak the chips in the resin portion of 330 epoxy or Opticon™. Pour mixed 330 epoxy into the cup carefully to make sure there are no air bubbles. Put in enough to just cover the chips. Now place the chips close together in the cup in a pleasing manner using tweezers. Allow to set for several days.

Once the mixture has set, grind down the side that will be the back until you have a nice attractive pattern. Dry and paint the back black, or leave it clear, depending on the look you want. Glue the back onto your base (quartz if you want a natural color look). Once set, grind down the top, keeping in mind that this material looks best 1 to 2mm thick. Glue on a cap as in other triplets.

Enjoy: You have produced some very attractive cut opal from the Okanagan Opal Mine. Now place it in a setting and get set to enjoy wearing your unique treasure.

Okanagan Opal, Inc.

P. O. Box 298
Vernon, B.C. V1T 6M2

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Excepts from Opal Market News

Paul Downing's

OPAL MARKET NEWS™

Volume 1, Number 2, October, 1994

Majestic Press, Inc.
P. O. Box 2265
Estes Park, CO 80517
(800) 468-0324

Current Conditions In The Opal Market

Production Continues to Decline

I reported in the last ***Opal Market News*** that opal production was on the decline. Since that writing, conditions on all the opal fields have become even more serious. True, opal is being found. But the volume has dwindled to an alarming level. Australians tell us just this in the article excerpts reproduced below.

Any Opal?

by Chevahn Lewis
Coober Pedy Times, 18th May, 1994

Coober Pedy and the world have an opal shortage, buyers and miners just can't get enough opal to continue in the business. The number of miners and companies backing mining operations have depleted. We need more miners!

Interstate opal cutters are going out of business due to lack of supply of good quality opal, they are selling their machinery. Interstate wholesalers simply cannot get enough cut stone or triplet supplies.

Some Chinese factories are cutting back on staff because they cannot get enough rough to cut, they are looking at alternative hard stones or they are thinking of getting out of the business altogether.

We need more good opal—yes, it is hard to find and many people mine for years and never find anything but we cannot give up. People are still finding opal, it has not run out.

There is still a lot of virgin country out there that could possibly hold the rich bonanza we are all looking for, which brings me to my next point. Coober Pedy miners must make a concentrated effort to prospect for these new fields. The days of nibbling around the edges of established fields is over...

To satisfy the demand of todays opal market a new field really needs to be established. The opal found needs to be good quality, not cracky and in sizeable amount, what we really need is another Olympic or 15 Mile.

Travelling through town it is amazing to see the amount of unused mining equipment. Out on the fields you no longer see the clusters of twenty or so blowers working as you did in years gone by, now what you see is ten or so noodling machines covering up virgin ground on good fields, most making fairly good money. How long can this last, how long before the number of good fields left is so low that they too start selling up? Yes, mining is expensive and to do it on a large scale requires a lot of money up front...

The market demand for opal is very strong, prices are good and still rising. Well cut stones are much easier to sell than ever before. Now is the time for miners to start cutting their own opal but this can only be profitable if they are cut correctly. Badly cut stones are extremely hard to sell and it does nothing to enhance the industry. On advice from opal buyers it is a waste of time to even attempt to cut anything valued at under $30/carat...

We simply need more good opal, not enough to flood the market but production at the moment is just not enough. We are losing people who have access to a multitude of small markets which are very important to the opal

industry, re-establishing these markets will be very difficult to do.

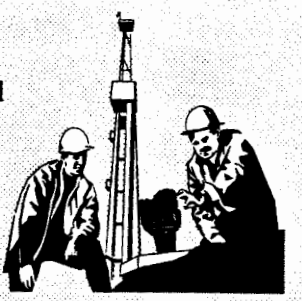
There is still plenty of opal out there so get out and find it!!

Still asking...ANY OPAL?

by Chevahn Lewis
Coober Pedy Times, 8 June, 1994

...After calling around Australia and the World I came up with the fact that, yes, there is a shortage of Opal. Coober Pedy and Lightning Ridge cannot supply enough to satisfy world wide demand...

To most people the prices are high at the moment and demand for rough opal is very strong. But some believe the prices should go higher, whether they should or not is not up to me...



Opal is hard to buy and hard to find. One possible reason why, could be that the cost of mining has risen and miners are thinking of mining as a hobby instead of a full time job. This brings me to the fact that one opal dealer who has been mining for 28 years is now getting out of the business because it is too expensive, even he agrees that there is an opal shortage.

Prices once more brings me to the point of diesel sales. Petrol stations reported drops of sales in diesel which co-incides with claims by opal dealers that they have not seen as much opal as in previous years and feel there are probably less miners...

Australian Opal Production Down

Reprint in *Coober Pedy Times*, 22 June, 1994
from *Lightning Ridge News*, 9 June, 1994

There have been many reports of a downturn in opal production from all opal fields in Australia. Dealers and cutters are complaining of a lack of gem material to buy and process.

Many dealers are relying on their stockpiles of opal that they have been sitting on for some time to keep them going until they can get the grades and sizes that they want to try to satisfy their customers' demands.

There are reports of dealers, both in Australia and internationally, laying off processing staff because they cannot get enough opal to cut.

One plane load of overseas buyers last week who flew into Lightning Ridge, could not buy the opal that they wanted to, but it is not known what quality they wanted, nor the prices they were offering.

Coober Pedy is experiencing the same predicament, and there is a desperate shortage of opal there as well.

Some buyers are saying that there are still plentiful opal stocks in Hong Kong and it can be purchased cut there, cheaper than it can be bought in the rough in Australia.

This is due to some miners selling huge amounts at very cheap prices in the past...

According to market sources, if the quantity of opal on the market does not increase, prices will have to rise to encourage more mining. It is a fact of life that the rarer a gemstone becomes, the more expensive price tag it generates...

One buyer when asked about the situation said, "It is purely a question of supply and demand, and when dealers and processors get near the end of their stockpiles, then there will be an increase in prices."

Recent Production Data

Data for South Australian opal production shows a steady decline from 1988 to 1993. Production is little more than half its earlier levels. But be careful of these numbers. Value is not actually observed. These estimates are based on a formula which uses the number of claim permits and other information to calculate a dollar value. If the miners are not working and/or if they are not finding much, these estimates will be much higher than true production. There is no data for 1994. However, the articles reproduced above clearly show the trend. Lower production and declining overseas stock suggest that price increases will not be far behind. Indeed, *The Guide* has observed an increase in crystal and semi-crystal prices of approximately 30 percent over the last 6 months. More may well be on the way.

South Australian Opal Production

Millions of Australian Dollars

Field	1988	1989	1990	1991	1992	1993
Coober Pedy	21.3	19.9	20.7	16.1	16.8	16.7
Andamooka	3.2	4.2	3.8	3.2	3.2	3.9
Mintabie	39.0	31.5	22.6	19.4	18.7	18.2
TOTAL	63.5	55.6	47.1	39.3	38.8	38.8

So You Want To Go Opal Mining

Time after time I get calls from people who are going to Australia to start mining opal. I wish them good luck. They are going to need it. Most new opal miners go broke within one year. It's a rough life with infrequent success. And it is expensive.

Below is a listing of the equipment needed to mine in Lightning Ridge. Prices are based on ads in the *Lightning Ridge Flash* newspaper.

Needed Equipment (Prices in Australian Dollars)

	New	Used	Economy
Blower	$ 40,000	$ 15,000	-----
Self-tipper	-----	-----	$ 2,500
Digger	25,000	14,000	-----
Jack Hammer	-----	-----	1,500
Electric Generator	3,000	725	725
Truck (Utility)	23,000	6,000	3,000
Truck (Dump)	20,000	10,000	5,000
Agitator	20,000	11,000	5,000
Conveyor	8,000	5,000	1,000
Site for Agitator *	2,500	2,500	2,500
Hoist	2,500	2,500	2,500
Miscellaneous Tools	1,000	1,000	1,000
Fuel for year	25,000	25,000	10,000
Camp	10,000	10,000	5,000
Shafts (4 for year)	3,000	3,000	3,000
Living Expenses	5,000	5,000	3,000
TOTAL	$188,000	$110,725	$45,725

*If one can be found with water.

Cost Recovery

It is true that you can sell off equipment at the end of the year and recover some of your investment. You might get back $25,000. In addition you must place a bond with the Mines Department. You will need a partner—good ones who are knowledgeable and sober and willing to work are hard to find. Finally, you need to have a work permit to be eligible to register a claim.

Synthetics Popping Up Everywhere

High quality Gilson synthetic opal has been on the market for years. The new Gilson material is much more difficult to identify by visual inspection. This means that that beautiful stone you saw recently may be a Gilson. Inspect all stones very carefully. Most new Gilson stones do not exhibit the regular pattern and serrated pattern edges we are used to looking for.

Both Australia and Russia are exporting synthetic opal. The Russian material is reported to be abnormally porous, so if these stones are immersed in distilled water they become darker and vein structure may show (National Jeweler, August 16, 94). I have cut one piece of this rough. It had a very distinct plastic smell to it and was much softer than natural opal.

The synthetic opal from South Australia is quite difficult to distinguish from natural stones. Dr. Grahame Brown reports that it has many of the characteristics of Gilson, including columnar color pattern, scalloped margins to fire patches and a honeycomb structure (Colored Stone, July/Aug, 94).

With the reduced supply of natural rough, I expect we will be seeing a lot more synthetic stones. Just recently I was told of a parcel of "A" grade triplets that looked like at least half were synthetic material.

Stability Problems

Mexican orange jelly (fire) opal reached unprecedented demand in 1993 when the major TV shopping networks started selling it. Now it turns out that a portion of this material has crazed *after* reaching the final consumer (JCK, August 94). This problem is giving all opal an undeserved black eye.

Some dealers have been careful to screen their rough and *age* it before they sold it. They claim that such aged material is very stable and almost never crazes. The problem, they claim, is that they could not supply enough properly aged material so other *inexperienced* dealers sold the jewelry manufacturers faulty material.

It is still uncertain whether aging through a slow heating process will assure that the surviving opal will not craze, but it should weed out the most serious problems. I still remain skeptical of this material. Sure, some Mexican opal is stable, but much of it is not. When I cut all the produce out of a Queretaro mine in 1967-1969, we would set it aside for a year after cutting. What remained stable was then sold. Most of it did not survive for that year! You just never know what will happen to it in the future. I have one piece which retained its beautiful orange crystal and beautiful fire after one year. I kept it in a box and looked at it every few months for five years. Then one day I opened the box to find it had turned opaque with an uneven body color. Twenty years later it looks exactly like it did that day. It never crazed. Sudden or gradual transition to opaque stones is not uncommon in Mexican opal. Other stones which came from the same week's mining are just as clear and beautiful as the day I cut them. The problem is that it is not possible to distinguish the two without holding them for twenty years. This is a real problem for Mexican opal.

Unfortunately, there can be a similar problem with some Australian opal. An area near Lightning Ridge called Mehi produces some great crystal and black opal. However, much of it has proven to be unstable. Like Mexican, the crystal can become opaque and/or craze several years after it has been cut. The black from Mehi has proven to be more stable, but some of it has gone too.

Now the problem is that Mehi material is virtually indistinguishable from other Lightning Ridge material, especially after it is cut. It has been reported to me that a prominent buyer on the fields purchases a big volume of Mehi material and sends it to China to be cut and set. From there it is sold all over the world. When it crazes, all Lightning Ridge opal is thought to be bad, which is far from the truth.

A similar problem was encountered with material from the "New Fields" area of Coober Pedy. Like the one horse shay, it lasted 6 months and one day. Fortunately most of this material is now made into triplets, but some is still trickling into the solid stone market. Again, bad opal will give good opal an undeserved black eye in the name of short term profit.

How can you find good opal? The secret is to find a dealer you can trust. Such a dealer should have been in the business for a number of years, thus having a lot to loose if he or she sells unstable opal. They should offer an unconditional one year guarantee against crazing. (In my experience, most reputable dealers will work with you if you have a problem with a stone after a year.) And they should be buying directly from the miners so they know where the opal came from. I mean specifically what hole in the ground—not just that it is from Lightning Ridge or Coober Pedy. This takes some research. If you buy on price alone, you are probably going to have a problem. But if you are careful, there is a lot of business to be done in opals.

Okanagan Opal

I spent the better part of June and July working at the Okanagan Opal, Inc. mine near Vernon, British Columbia. I am pleased to report that all our early hopes for a major strike are coming to fruition. Three new pits containing precious opal were discovered west of the Discovery Pit. And precious opal was discovered at the top of the mountain. It is now clear that we do, indeed, have a mountain full of opal!

Some very nice finds have been made this last summer. I uncovered a concentration of several ounces of good crystal. Many fee diggers have done as well or better. It's hard work, but the potential rewards are definitely there.

Mining has now been closed down for the year. Bob Yorke-Hardy has carefully collected sample workings from numerous areas. Over the winter these will be examined and cut to enable us to estimate a yield per ton.

It is expected that the first salable output of the mine will be jewelry for local tourist shops. We will probably have some sample material for sale by Tucson. Sales of cutable rough may be further off. Further information and details on cutting this material can be found in my article in *Rock & Gem*, Oct 94.

Current plans would call for opening the mines for fee digging near the end of May. Give Bob or me a call for further detail.

Bob Yorke-Hardy (604) 542-5173
Paul (800) 468-0324

Weights for Calibrated Stones

The weight of a calibrated opal cab can be quite different depending upon thickness, dome, etc. However, it is helpful to know a typical weight for standard size opal cabs. One set of weights provided by Italgem Corporation is listed below. I use these as a check against my calculated weights in mounted stones.

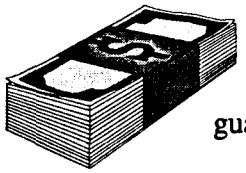
Shape	Size (mm)	Weight (cts)
Round	1.0	0.01
	2.0	0.02
	3.0	0.09
	4.0	0.16
	5.0	0.34
	6.5	0.67
	8.0	1.30
	10.0	2.0

Continued... Shape	Size (mm)	Weight
Oval	5x3	0.16
	6x4	0.28
	7x5	0.47
	8x6	0.78
	9x7	1.10
	10x8	1.65
	11x9	2.15
	12x10	3.00

Pear	5x3	0.13
	6x4	0.22
	7x5	0.35
	8x5	0.50
	9x6	0.70
	10x7	1.03
Marquise	4x2	0.09
	6x3	0.17
	8x4	0.37
	10x5	0.59
	12x6	1.00

A Review of Wholesale Prices

The following sections present actual observations of wholesale market prices for loose cut opal. It also systematizes those observations into price ranges for various qualities, types, and sizes. All descriptions are based on Paul Downing's book *Opal Identification and Value*.



Prices. The prices reported here are the prices charged by reputable opal dealers selling single stones or small parcels to the retail jeweler or designer. Thus, they are a reflection of the wholesale market. Most of the wholesale dealers surveyed are members of the American Gem Trade Association (AGTA). This guarantees:

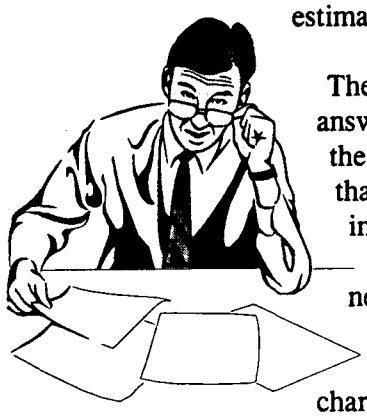
1. That the dealers are reputable and operate under a strict code of ethics;
2. That they guarantee their opals, and
3. That they always reveal any treatment or dying done to any gemstone.

You may find stones for sale at higher or lower prices than those reported here. If you do, it is necessary to validate such stones carefully to determine if the price represents a sale by a reputable dealer who guarantees the stone for at least one year, and who can be reached in the future should the need arise.

The prices reported reflect what such opals are currently being sold for in the United States. Dr. Downing and the *Opal Market News* cannot guarantee that the stones quoted, or a similar stone, can be supplied at that price. I would be pleased, however, to help you find such a stone if you wish.

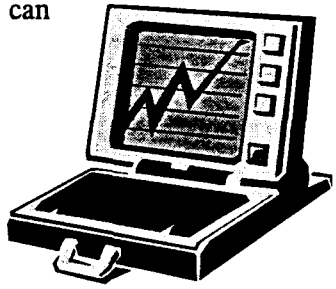
Market Research. The prices reported here represent direct observations by Dr. Downing. These observations are for opals offered for sale in the United States or opals Dr. Downing could purchase in Australia or Hong Kong and sell at the reported price in the United States. Each issue of the *Opal Market News* represents a careful survey and analysis of the opal market in the United States and its relationship to the international market. This includes continuous direct contact with dealers in the United States, Australia and Hong Kong. In all cases, Dr. Downing has personally observed and categorized the opal in accordance with the system produced in his book *Opal Identification and Value* and adopted in *The Guide*.

How To Use. The price information contained in the *Opal Market News* is useful in several ways. It can be used to determine what is happening in the opal market. It is useful in determining what any particular type and quality of opal is selling for. And it can be used to estimate what a particular stone would sell for in the current wholesale market.



The question of the market value of a particular opal can be difficult to answer. Market prices may seem quite variable. Like other colored stones, the variations in prices of opals are often due to variations in characteristics that are obvious to an opal expert, but may be subtle to someone not intimately familiar with this gemstone. In order to use the price information in this section of the *Opal Market News* accurately, it is necessary to become thoroughly familiar with the characteristics explained in *Opal Identification and Value*, and how those characteristics relate to actual stones. Most errors are the result of incorrectly characterizing the opal to be evaluated, especially the base color, quality (brightness of fire) and pattern.

The following wholesale market price observations are summarized in table form with estimated averages and ranges. Following each table is a listing of actual observations of stones for sale over the last six (6) months. These individual stones can be used as direct observations of opals for sale or sold in the past six months. As such they can be used for appraisals as wholesale market comparables.



The tables are based on stones observed in the last full year. Occasionally a stone may fall outside the normal range. Such stones may be unusually good or bad buys, or may have something special about them.

Paul Downing's

Opal Market News™

Paul Downing's *Opal Market News*™ is published twice each year (April and October) to keep you current on the prices of opal and what is happening in the opal market. This publication will be useful to those who buy and sell opal, design and market custom pieces, and/or appraise opal.

About Paul Downing. Dr. Downing is a member of the National Association of Jewelry Appraisers, an American Gem Trade Association (AGTA) dealer, and an advisor to *The Guide*. He is the author of three books and numerous articles on opal, including the book *Opal Identification and Value*. This book is widely used in the industry as a method of categorizing and valuing opals.

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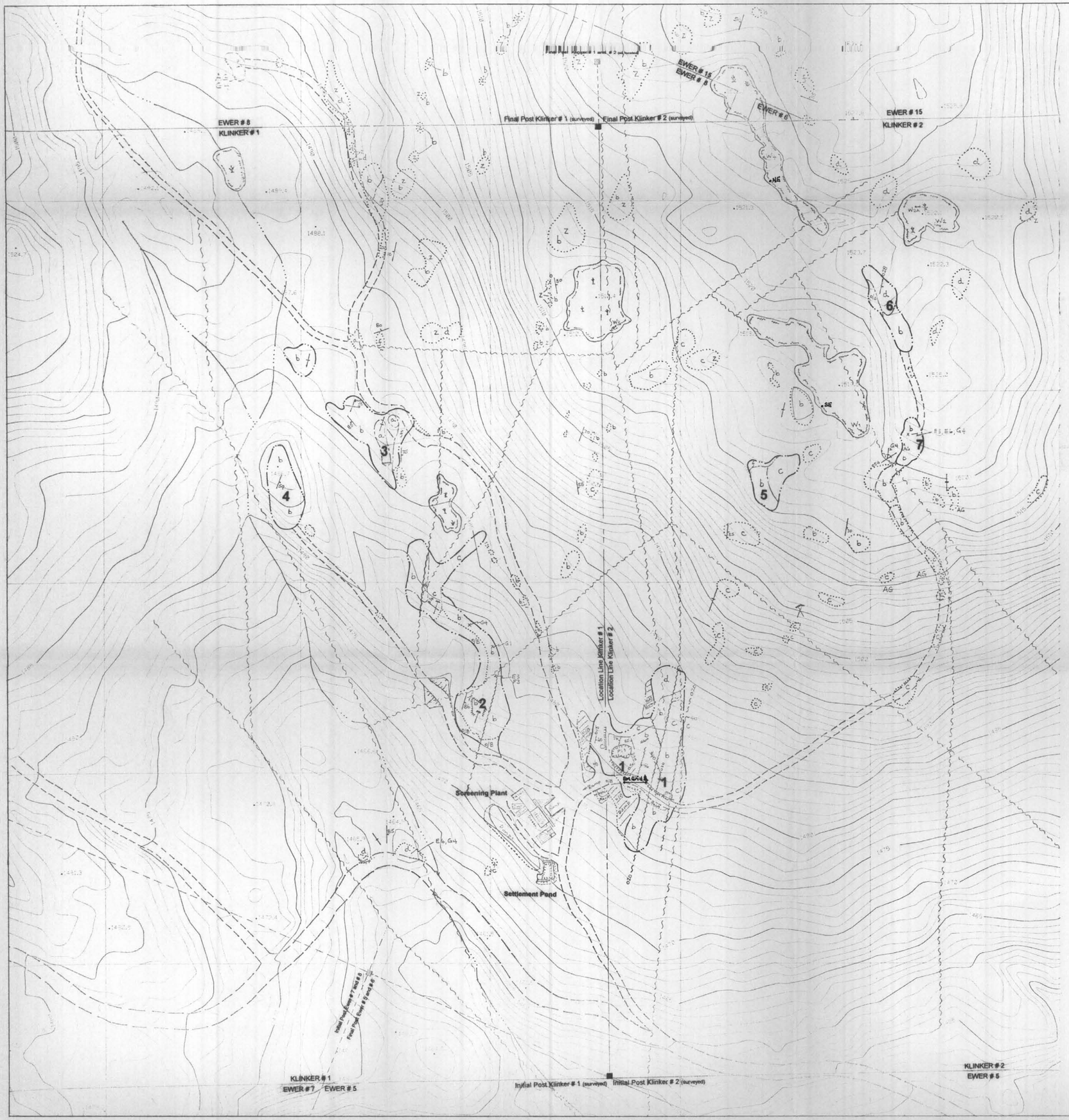

OPALIZED ZONES

1 DISCOVERY ZONE OPAL TYPES:
A3, A4, A6, B3, B5, B6, D2, D3, D5, D6, E2, E3, E5, E6, F2, F3, F5, F6, G1, G2, G4, G5, H4, J1, J4, K1, K3, K4, K5, L1, L2, L4.
- NOTE: also contains agate.

2 BLUEBIRD ZONE OPAL TYPES:
A3, A4, B3, B6, D3, D6, E3, E6, F1, F4, F6, G1, G2, G4, G5, I4, J1, J2, J4, J5, K1, L1, L2, L4.
- NOTE: also contains agate.

3 CARAMEL ZONE OPAL TYPES:
A4, D6, E3, E6, F2, F5, F6, G1, G3, G4, G5, J2, J4, J6, L2, L4.
- NOTE: also contains agate.

4 CARAMEL EXTENSION OPAL TYPES:
A4, E3, G3, G1, J4, L4.
- NOTE: also contains agate.

5 TRIPOD ZONE OPAL TYPES:
D3, D6, E3, F3, F6, G4, J4, K4, K5.
- NOTE: also contains agate.

6 RED ROCK ZONE OPAL TYPES:
B4, B5, B6, C5, C6, D6, G1, G4, G5, J4, K4, K5.
- NOTE: also contains agate.

7 EAST WATERHOLE ZONE OPAL TYPES:
E3, E6, G4.
- NOTE: also contains agate.

OPAL DESCRIPTION TABLES

PRECIOUS OPAL

DESCRIPTION		OPAQUE	TRANSLUCENT	TRANSPARENT
BASE COLOR	CODE	1)	2)	3)
BLACK	A	n/a	n/a	faces up black with play of color
ORANGE	B	n/a	n/a	orange base color with play of color
RED	C	n/a	n/a	n/a
AMBER	D	n/a	amber with play of color	amber with play of color
YELLOW	E	n/a	yellow with play of color	yellow base color with play of color
CLEAR	F	n/a	semi-clear with play of color	clear with play of color
WHITE	G	white base color with play of color	semi-white with play of color	n/a
GREEN	H	n/a	n/a	n/a
SALMON/PINK	I	n/a	n/a	n/a
CARAMEL	J	caramel with play of color	caramel with play of color	n/a
BROWN	K	brown with play of color	brown with play of color	faces up brown with play of color
BLUE	L	blue with play of color	blue with play of color	n/a

COMMON OPAL (no play of color)

DESCRIPTION		OPAQUE	TRANSLUCENT	TRANSPARENT
BASE COLOR	CODE	4)	5)	6)
BLACK	A	black base color	black base color	faces up black
ORANGE	B	orange base color	orange base color	orange base color
RED	C	n/a	red base color	red base color
AMBER	D	n/a	amber	amber
YELLOW	E	n/a	yellow base color	yellow base color
CLEAR	F	n/a	semi-clear	clear
WHITE	G	white	semi-white	n/a
GREEN	H	green	n/a	n/a
SALMON/PINK	I	salmon/pink	n/a	n/a
CARAMEL	J	caramel	caramel	n/a
BROWN	K	brown	brown	n/a
BLUE	L	blue	n/a	n/a

LEGEND - General

- Roads
- Creek/drainage
- Ponds (year round water)
- Swamp (seasonal water)
- 1520 Topographic Contour w/ elevation
- 1486.1 Spot Elevation
- Claim Line
- Claim Posts/I.D. Post
- Excavated Rock Faces
- Stripped Areas
- W2 Water Sample Site
- Overburden Piles
- N6 Water level monitor site
- Grid 6 VLF-EM Grid baseline

Geological Symbols

- Fault/contact lineament: -interpreted from airphotos
- Mapped fault lineament
- Bedding: vertical, inclined
- Joints: vertical, inclined
- Rock Outcrop outline
- Contact/Rock type change
- x E6 Opal Occurance: -type code
- 2 Opalized Zones

Geological Legend

Map Symbol	Age	Rock Type/Description
a	Eocene	Tuffaceous sandstone.
b	Eocene	High velocity lahar with tuffaceous sandy matrix; clasts, basaltic, scoriaceous, highly altered, weathered.
c	Eocene	Mostly clast supported, differentially weathered volcanic breccia (lahar?), purple, scoriaceous.
d	Eocene	Rusty, oxidized, limonitic, pebble, cobble, boulder, clast supported lahar or breccia.
z	Eocene	Salmon to light brown colored volcaniclastic with cobbles, boulders; matrix flooded with white crystalline zeolite (chabozite).
f	Eocene	Fresher basaltic flow, no alteration, amygdaloidal, zenoliths.

GEOLOGICAL SURVEY BRANCH
ASSESSMENT REPORT

24,606

KLINKER PROPERTY

McGregor Creek Area, B. C.
Vernon Mining Division

GEOLOGICAL MAP OF KLINKER CLAIMS & OPAL EXPLORATION SITE PLAN

OKANAGAN OPAL INC.

DATE	SCALE	MAP No.
Feb. 1995	1:1000	6