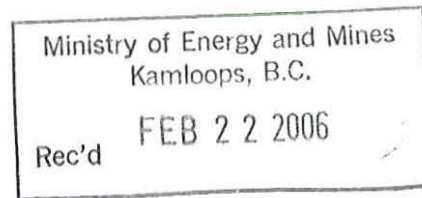


Eric W. Beresford, P.Eng.,  
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Carstairs, Alberta T0M 0N0  
(403) 337-4031 FAX 337-2789  
Email: [ericwberesford@shaw.ca](mailto:ericwberesford@shaw.ca)



February 20, 2006

Diane Howe, M.A.Sc. P.Geo.  
Inspector of Mine, Reclamation and Environment  
Mining Operations Branch  
Ministry of Energy and Mines  
P. O. Box 9320, Stn. Prov. Govt.  
Seventh Floor, 1675 Douglas Street  
Victoria, B.C. V8W 9N3

Dear Diane Howe:

**Mine Permit Q-15-006, Annual Reclamation Report  
Western Industrial Clay Products Ltd., Kamloops**

On behalf of Western Industrial Clay Products., I enclose the year 2005 Annual Reclamation Report for the Red Lake Quarry. Mining development of the clay extraction and reclamation progress are shown for the Red Lake, West, North West Pits and Bepple Pit in Mining Lease No.310888 and DL 6385.

Should you have any questions of a technical nature regarding the report, please direct them to the undersigned as I act as consultant to Western Industrial Clay Products Ltd.

Yours truly,

A handwritten signature in blue ink that reads "Eric W. Beresford".

Eric W. Beresford, P.Eng.,  
Mining Consultant

**Attachment:**

cc: Mike Cathro, P.Geol. Regional Manager, Kamloops ✓  
Peter Aylen, C.A., M.B.A., President, Western Industrial Clay Products Ltd.  
Dave Bowers, Mine Manager

**WESTERN INDUSTRIAL CLAY PRODUCTS LTD.**

**a division of ABSORBENT PRODUCTS LTD.**

**ANNUAL RECLAMATION REPORT**

**for YEAR 2005**

**RED LAKE QUARRY**

**(Red Lake, West, North West and Bepple Pits**

**MINE PERMIT Q-15-006**

**MINING LEASE No. 31088 & D.L. 6385**

E. W. Beresford, P.Eng.  
Mining Consultant

February 20, 2006



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2. Location
3. Regional Geology
4. Red Lake Stratigraphy
5. Reserves
6. Mining and Production
7. Reclamation
8. Reclamation Liability Cost Estimates
9. Acid Rock Drainage Potential

### **List of Drawings**

- Location Map Scale 1/1,000,000
- Mineral Tenure Lease No. 310888, Scale 1/5,000
- Regional Geology - Scale 1/50,000
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- Recl. 2 Final Reclamation Contours after Backfilling. Scale 1/2,000

### **Appendices**

Appendix. 1-Site photos, October 17, 2005

### **List of Tables**

Table 1 - Summary of Disturbed and Reclaimed Area

Table 2 - Summary of Reclamation Backfill Placement

## **1. Introduction**

This report details mining and reclamation activities carried out at the Red Lake Quarry to December 31, 2005 and a forecast of estimated completion dates for each separate pit area. The mine is operated under Permit Q-15-006 originally issued to Western Industrial Clay Products Ltd., ( WICPL) in 1994 with subsequent amendments in 1996, 2001 and 2003.

A 20 year Mining lease No. 310888 was granted to WICPL on November 30, 1992 which expires in 2012. Mining Lease No. 310888 was extended to include the Beppe property and now comprises a total of 60 hectares (150 acres) divided into four mining areas, namely Red Lake, West, North West and Beppe pits. Clay was excavated from the West, North West and Beppe pits. Reclamation work including backfilling and grading of mined out areas has been continued in 2005 in the Red Lake and West pit areas.

A site visit was made to the property on October 17, 2005 prior to finalizing the reclamation report and photos were taken of the progress to date, and included in the report.

## **2. Location**

The Red Lake quarry is 40 km north west of Kamloops, at an elevation of 1,300 metres. The first 8 km of the road is paved with the remaining 32 km a publically maintained gravel road. See Location Map.

WICPL have their processing, bagging plant, distribution warehouse and office at Kamloops, and operate year round. The mining and trucking of the raw material to the Kamloops Plant is of a seasonal nature to avoid winter conditions and usually operates about 7 to 8 months of the year.

## **3. Regional Geology**

The diatomaceous earth (Fuller's earth) deposit near Red Lake lies in the Miocene fluvial and lacustrine sediments near the base of the Deadman River Formation. Both the capping olivine basalt flows of the Chasm Formation and the underlying sediments are part of the Chilcotin Group. The sediments mainly fill a regionally north to northwesterly flowing drainage system that was buried by basalt flows which spread across the upland topography of central British Columbia. The Miocene sediments and volcanics lie on a basement composed of Eocene basalt/andesite flows of the Kamloops Group, or conglomerate and sandstone of the Jurassic Ashcroft Formation, or basic meta-volcanic rocks of the Upper Triassic Nicola Group.



#### **4. Red Lake Quarry Stratigraphy**

The diatomaceous earth reserves have been proven by extensive auger drilling and excavator test pits over the whole of the lease area. The basalt cap is only present in the north part of the North West and the Beppe property, and does not affect the current 5 year mining development plan.

The diatomaceous earth deposit is divided into Upper and Lower Clay and separated by a carbonaceous shale/lignite seam of approximately 1.0 to 1.5 metres in thickness known as Leonardite. A basal Leonardite seam is also present in parts of the quarry. The Leonardite seam is rich in humic and fulvic acids and is mined separately for use as a soil conditioner, and peat enhancement. The Upper Clay is between 4.0 to 6.0 metres in thickness and found in the Red Lake pit only and the Lower clay is between 3.0 to 6.0 metres and present throughout the lease. Because the Upper and Lower clays have different specific gravities varying from 0.59g/cc to 0.51/cc, this causes problems with marketing based on differing weights and using the same bag size. The plant was originally designed around mining only the Upper Clay layers at a 0.59g/cc. The company is currently blending the clays but is still considering changes to the bagging process to accommodate separate sales of the Lower clay product to maximize the total resource extraction of the deposit.

The soil and overburden layers over the area vary from 1.5 to 3.0 metres in thickness, and is excavated and used as backfill and soil for final pit reclamation. Andesite forms the base of the diatomaceous earth sediments.

#### **5. Reserves**

Estimated remaining reserves in the West Pit and Red Lake Pits at December 31, 2005 are Lower Clay 80,000 cu.metres, Upper Clay 30,000 cu.metres and Leonardite 75,000 cu.metres. In the North West Pit there are estimated recoverable clay reserves of 240,000 cu.metres of Upper Clay, 92,000 cu.metres of Lower Clay and 100,000 cu.metres of Leonardite. In the Beppe pit there are estimated recoverable clay reserves of 280,000 cu.metres of Upper Clay and Lower Clay 488,000 cu.metres and 305,000 cu.metres of Leonardite.

#### **6. Mining and Production**

As the deposit is fairly flat lying the clay and overburden is removed by two T.S. 18 scraper machines, Cat D-8 bulldozer, Excavator and Loader. The average mining depth to final excavation of clay reserves throughout the quarry is between 6 to 10 metres.

Stockpile areas are created and separated on site to prevent contamination of the varying products, before trucking to the Kamloops plant. Leonardite is stockpiled on site for future sales or used in reclamation of the site.

Drawings Min.1/Min.2Recl.1 show the up-dated mining and reclamation progress at December 31, 2005.

During year 2005 some 40,000 cu.metres of Upper Clay and 12,000 cu.metres of Lower Clay were mined. Production from the Red Lake quarry was 52,000 cu.metres which was processed through the Plant. A stockpile of about 10,000 cu.metres of clay is maintained between the minesite and the plant for access during the winter shutdown at the quarry.

In year 2006 mine development will continue as planned with an expected total production of between 50,000 to 55,000 cu.metres. During 2006 both Upper Clay and Lower Clay will be mined in the West Pit, North West Pit and the Beppe Pit together with Leonardite as it occurs in a mineable thickness.

In year 2006 the remaining Lower Clay and Leonardite will be extracted in the Red Lake and West Pits and the majority of backfilling completed ready for final grading and seeding to both pit areas in 2006. The existing east part of the in-pit road along the north boundary will remain to provide truck access to the Beppe pit and the new by-pass road to the south will provide access to the North West pit and West pit.

WICPL produces a wide variety of absorbent granule products from the diatomaceous earth for the use as cat litter, animal barn litter, oil and chemical spills.

## **7. Reclamation**

Reclamation in 2005 consisted of removing soil and overburden from the North West Pit and Beppe Pit over an area of 7.0 hectares and placing this material directly into the mined out sections of the West Pit and Red Lake Pit. Excess soil material was stockpiled for later use as a final topping for the backfilling of the pits. Some 30,000 cu.metres of material from the Beppe Pit was placed as backfill for reclamation. An additional 13,000 cu.metres of overburden and soil was placed onto the mined out area in the West Pit and Red Lake Pit.

Table 1 shows the amount of disturbed areas and the actual reclaimed areas with proposed yearly reclamation to the end of 2006. At December 31, 2005 the amount of disturbed and un-reclaimed area from all pits is 8.40 hectares. In year 2005 some 2.25 hectares of mined out land was backfilled and top soiled ready for final seeding to grass.



The total backfilled and graded area reclaimed and ready for seeding in the Red Lake and West pits 19.0 hectares.

Table 2 shows the amount of backfill placement quantities including soil, overburden and waste material in present stockpiles on a yearly basis to completion of reclamation in the Red Lake and West Pit.

The Bepple and North West pits are now being developed as reclamation in the two original pits are substantially reclaimed and completed.

At December 31, 2005 the amount of material in stockpile and available for backfill is estimated at 48,000 cu.metres. Waste material generated from cleaning off the clay and Leonardite layers is now placed directly as backfill where possible during mining operations and this material is not included in the actual stockpiled material as quoted in Table 2.

Site photographs taken on October 17,2005 are included in this report.

## **8. Reclamation Liability Cost Estimates**

Active progressive reclamation of the 20.4 hectares of disturbed ground in the Red Lake and West Pits has only been possible since 2001 because of the requirement to extract both clay layers and Leonardite so as to maximize resource extraction without backfilling onto the resource. Sequenced mining and reclamation development plans were approved under Permit Q-15-006 in October 2000.

WICPL utilize their own earth moving equipment to backfill and grade the mined out areas. The majority of the area requiring backfill and grading is included in the clay production costs if the overburden is being moved as part of the mining process. When overburden is moved separately and stockpiled or pushed into the mined out areas from existing stockpile, then this cost is separated out as a direct reclamation cost. WICPL have allowed \$8,500.00 per ha for direct reclamation costs at the quarry workings based on actual costs over the past years. An additional 1.25 ha of overburden stockpiles remain on site at present and will be removed by the end of 2007 from the Red Lake and West Pit areas.

In the North West and Bepple pits clay removal will continue through 2006 to mine the Upper Clay material. Based on WICPL reclamation cost figures and the amount of unreclaimed area the current reclamation security bonding of \$70,000.00 is adequate to cover reclamation liability at the quarry operation.

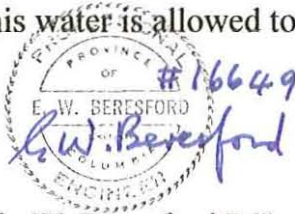


Overburden including waste clay not suitable for product blending and soil will be removed directly from the North West and Beppe Pits and placed on the West and Red Lake Pits for backfill and final reclamation. Total disturbed area in the North West and Beppe Pits is 7.0 ha.

## **9.0 Acid Rock Drainage Potential**

The diatomaceous earth (Fuller's Earth) being worked by WICPL is non-acid generating with a ph of between 6 to 7. Surface water flow is directed towards a natural vegetated gully on the west side of the property and there has been no leaching or other water quality issues on the Red Lake property.

Due to wet weather a small settlement pond was constructed in 2005 at the north west corner of the West Pit to collect pit run-off drainage from the North West and West Pits. This water is allowed to settle and filtrate into the natural gully along the west boundary.



Eric W. Beresford, P.Eng.  
Mining Consultant

February 20, 2006

**TABLE 1**

**SUMMARY of DISTURBED and RECLAIMED AREA**

**RED LAKE & WEST PITS**

	<b><u>Reclaimed hectares</u></b>	<b><u>Un-claimed hectares</u></b>
<b><u>Total Disturbed Area (un-claimed)</u></b> at December 31, 2000	-	20.40
Actual reclaimed year 2001	6.25	14.15
Actual reclaimed year 2002	4.00	10.15
Actual reclamation year 2003	3.00	7.15
Actual reclamation year 2004	3.50	3.65
Actual reclamation year 2005	<u>2.25</u>	<u>1.40</u>
Completed Reclamation at December 31, 2005	<u>19.00</u>	<u>1.40</u>
Area un-reclaimed at December 31,2005	-	1.40
Area covered by Stockpiles (product /soil)	-	1.25

**NORTH WEST & BEPPLE PITS**

Total disturbed area at December 31, 2005	-	7.00
Total un-reclaimed Area at December 31, 2005	<u>-</u>	<u>7.00</u>
Total un-reclaimed at December 31, 2005 all pits	<u>-</u>	<u>8.40</u>

**TABLE 2**

**SUMMARY of RECLAMATION BACKFILL PLACEMENT**  
**(soil, overburden/waste)**

**RED LAKE and WEST PITS**

	<b><u>Cu.metres</u></b>
Material in stockpile at December 31, 2000	<u>219,000</u>
Actual backfill placement year 2001	74,000
Actual backfill placement year 2002	48,000
Actual backfill placement year 2003	32,000
Actual backfill placement year 2004	35,000
Actual backfill placement from stockpiles 2005	10,000
Remaining stockpiled material	<u>20,000</u>
Balance	<u>219,000</u>

**NORTH WEST and BEPPLE PITS**

	<b><u>Cu.metres</u></b>
Material in stockpile at December 31, 2005	28,000
Material place directly into the West and Red Lake Pits as backfill	43,000

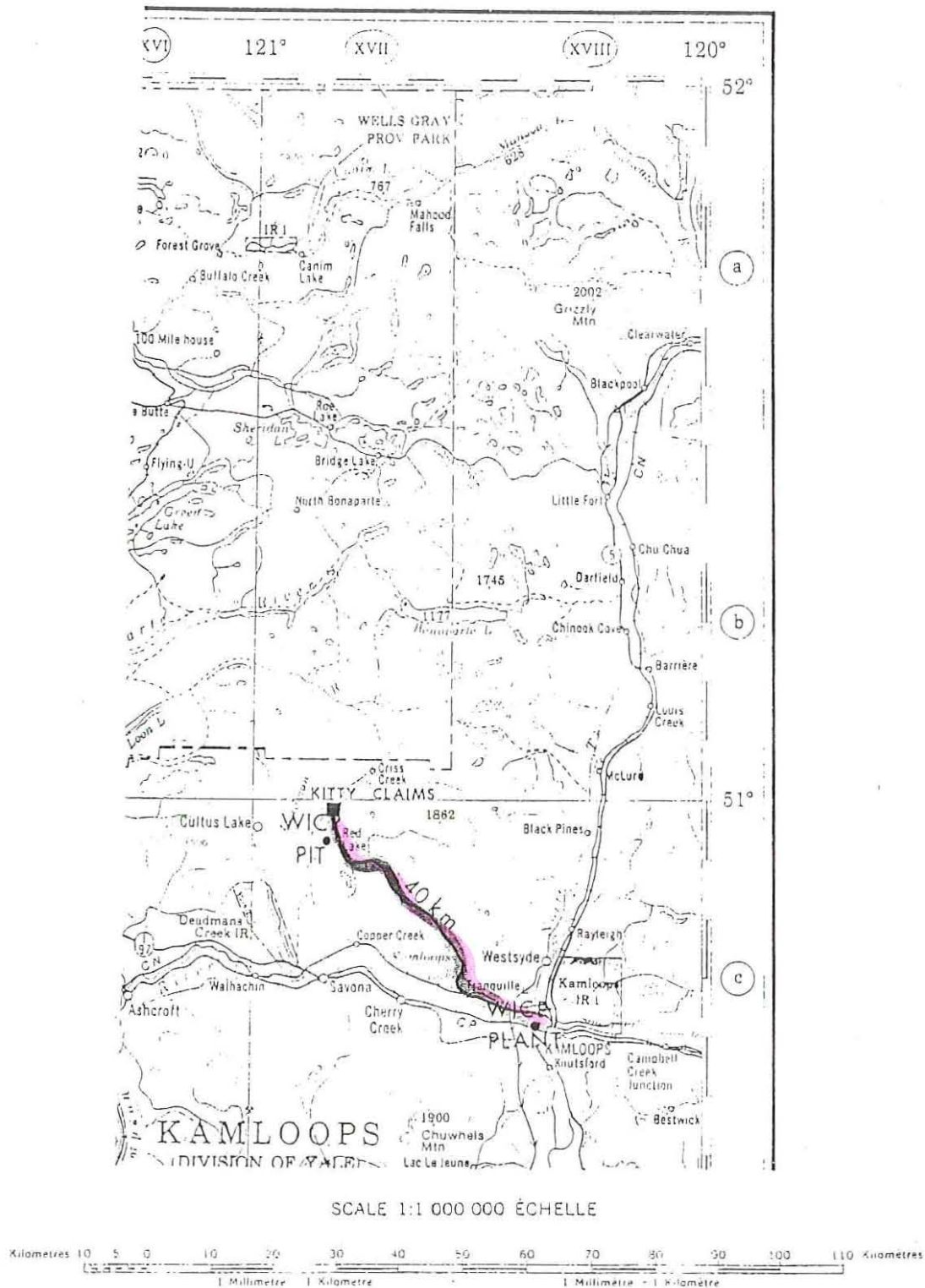
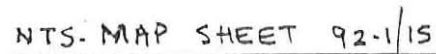
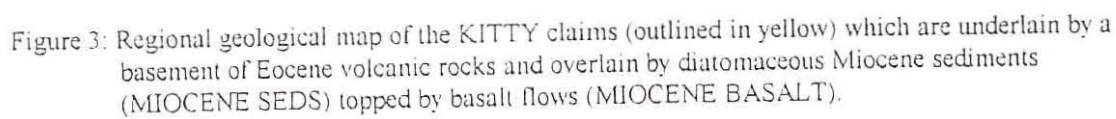


Figure 2: Regional map showing the locations of KITTY 21 and 23-30 claims, Western Industrial Clay Products Red Lake Open Pit and plant in Kamloops separated by 40 km of haul road.







(EXCEPT THE EASTERLY 15 CHAINS OF LS 1)

TP | 23 R21

KITTY 10  
REC. # 3367919  
TAG # 237411  
LOC. FEBRUARY 23, 1999

Rec or Tenure#  
slb 367919  
Kitty 10

SEE DETAIL A

Kitty 3

N. 1/2 NE 1/4 SEC 2  
TP 23, R 21, W.6M.

KITTY 17

REC. # 367916  
TAG # 689596 M  
LOC. FEBRUARY 22, 1999  
REC. #367774  
LOC. FEBRUARY 3, 1999

SW 1/4 SEC 12

(EXCEPT THE SW 1/4 OF THE SW 1/4)  
TP 23, R 21, W.6M.

KITTY 16  
#6 NO BT  
INITIAL POST  
KITTY 17

KITTY 16

AREA = 2.68 ha.  
REC. # 367915  
TAG # 689595 M  
LOC. FEB. 22, 1999

SEE DETAIL

INITIAL POST  
KITTY 16

Kitty 15

AREA = 6.25 ha.  
REC. # 367914  
TAG # 689594 M  
LOC. FEBRUARY 22, 1999

90°00'25"	362.339
-----------	---------

D. L. 6 3 8 5

KITTY 14

AREA = 21.4 ha.

REC. # 367913  
TAG # 689593 M  
LOC. FEBRUARY 22, 1999

BEPPLE PIT

WEST PIT

REC. # 218220  
TAG#117307  
LOC. JANUARY 19, 1989

BLOCK A  
NE 1/4 SEC 2  
TP 23, R 21, W.6M.

MINING LEASE 310888

RED LAKE PIT

BLOCK A  
NW 1/4 SEC 1  
TP 23, R 21, W.6M.

MINING LEASE 310888

KITTY 1

BLOCK B  
NW 1/4 SEC 1  
TP 23, R 21, W.6M.

REC. # 218218 (#8268)  
TAG # 117309  
LOC. JANUARY 19, 1989

MINERAL TENURE- MINING LEASE #310888

SCALE: 1 | 5,000





RED LAKE PIT - LOOKING EAST TO THE SITE ENTRANCE.





BEPPE PIT - LOOKING NORTH SHOWING CLAY WORKINGS.

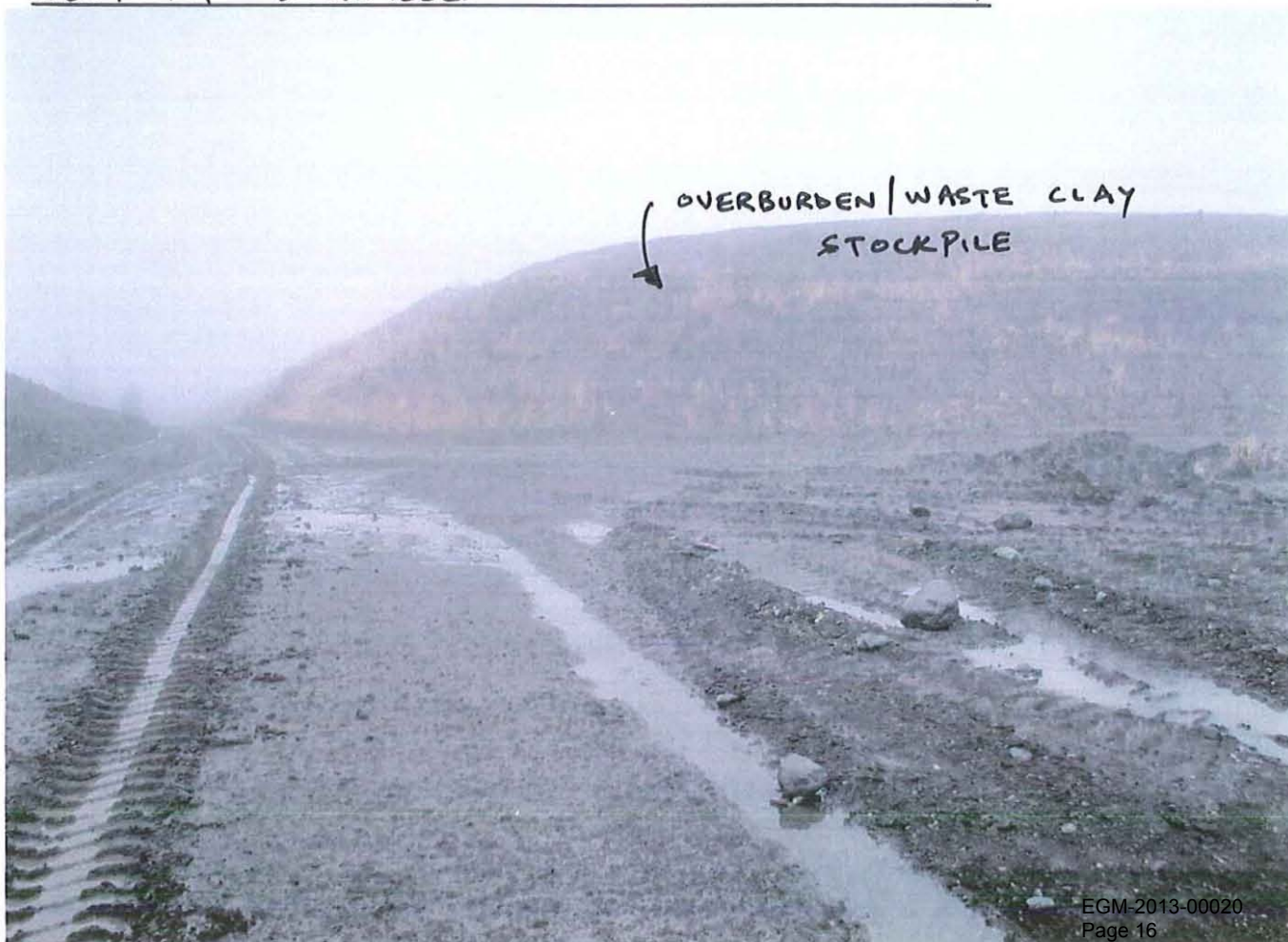


BACKFILL OF OVERBURDEN WASTE WITH SOIL COVERING - RED LAKE PIT

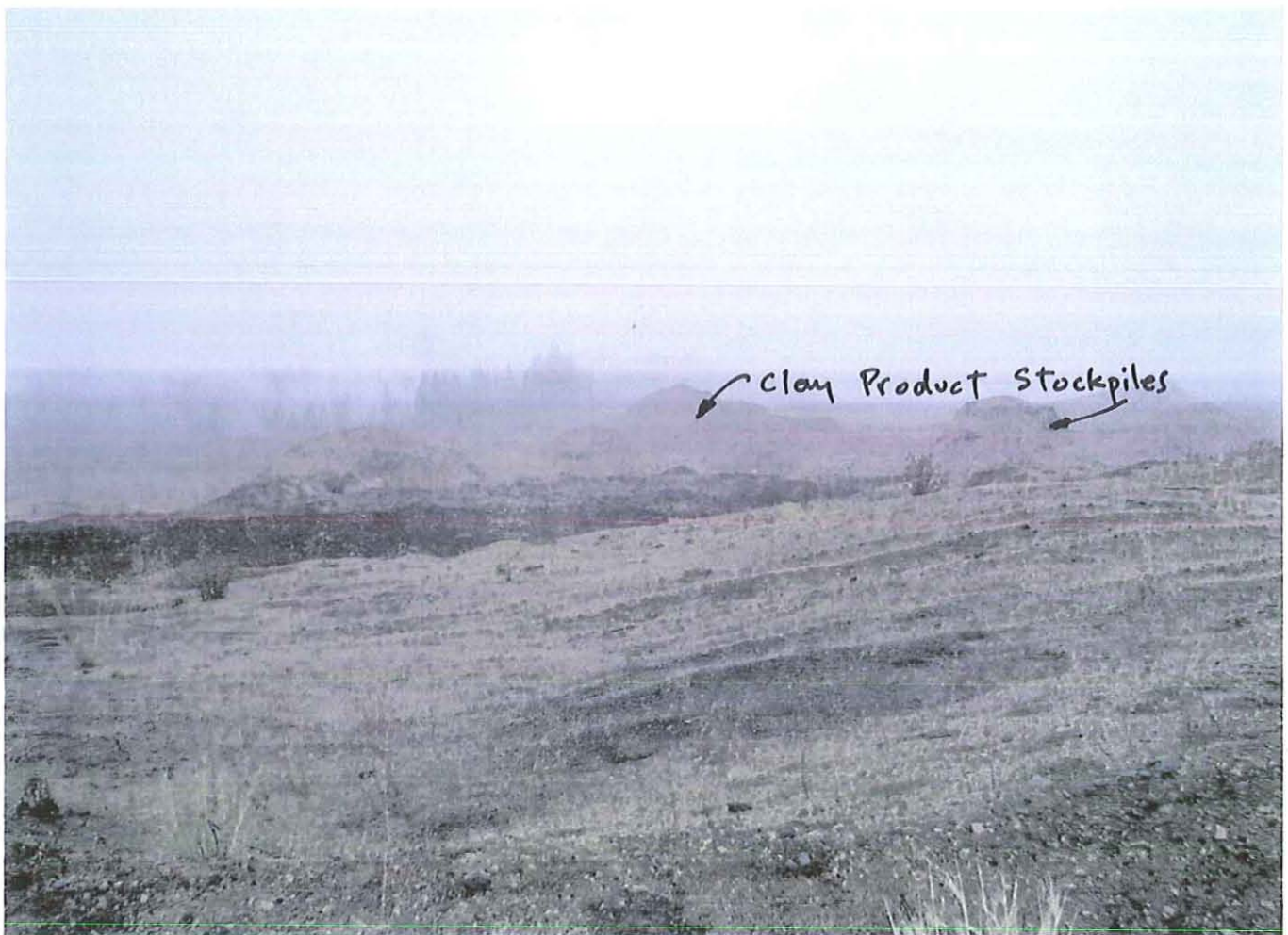




WEST PIT - BACKFILLED AREA - LOOKING WEST





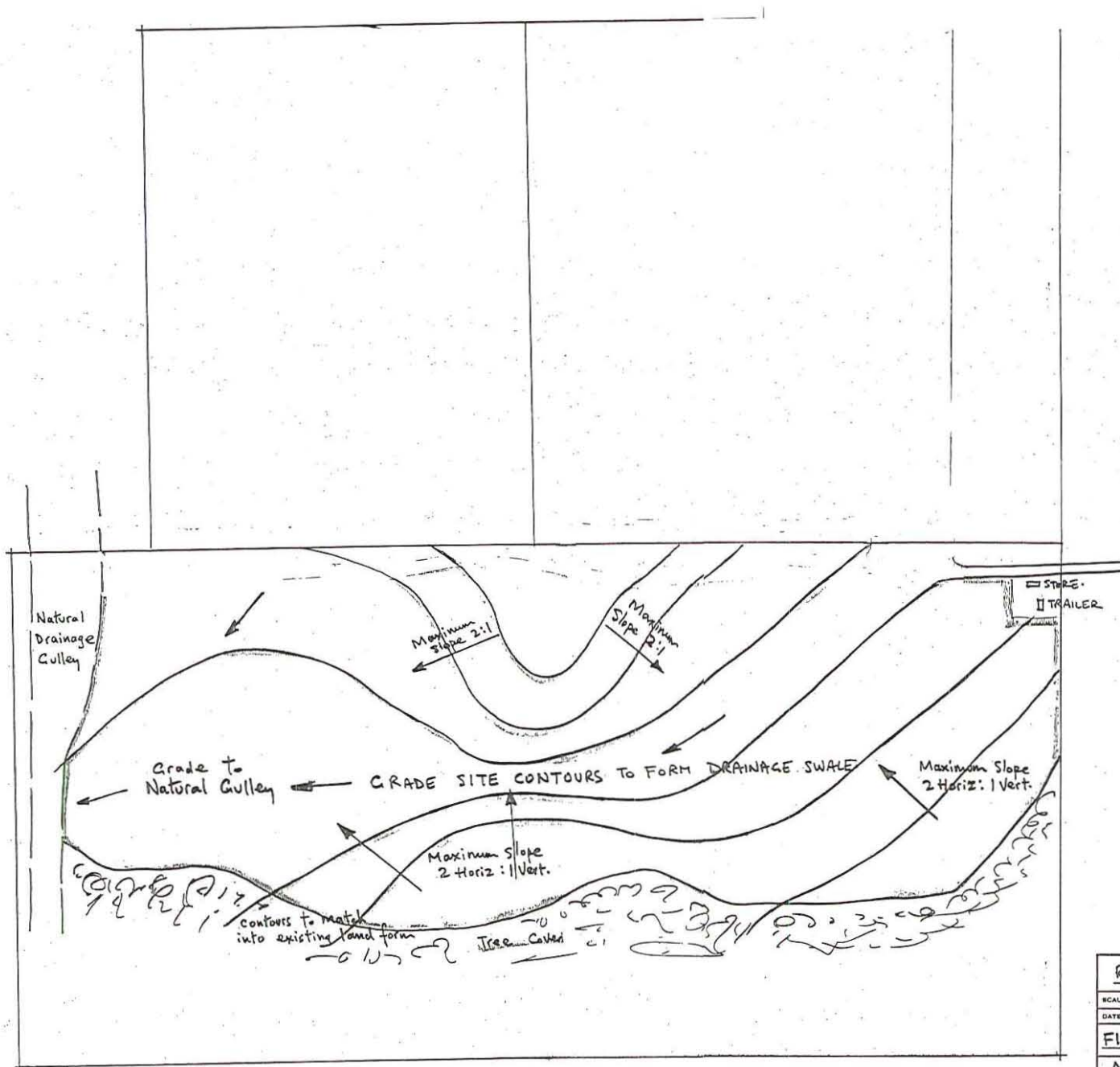


WEST PIT- SHOWING GRADED AREA AND CLAY PRODUCT STOCKPILES



WEST PIT- BACKFILLING OF GRADED AREA





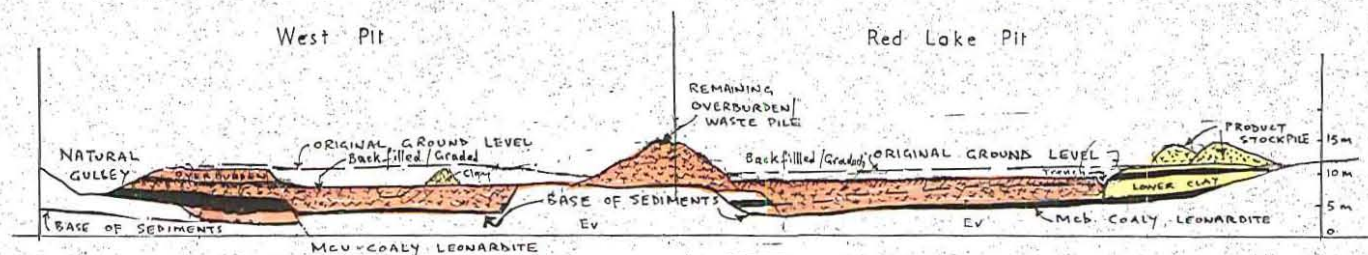
Notes:

- All disturbed areas to be covered with a minimum depth of 1.0 metre of soil and overburden for the growth medium, after backfilling.
- All disturbed areas to be seeded with an approved seed mixture.
- All slopes left at a maximum of 2 Horiz: 1 Vert. or flatter.
- Area graded for drainage to the gully.

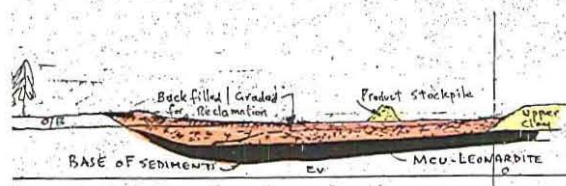
RED LAKE & WEST PITS			
SCALE: 1/2000	APPROVED BY: WESTERN INDUSTRIAL CLAY PRODUCTS LTD.	DRAWN BY: EWS.	
DATE:	REVISED Jan. 2005		
FINAL RECLAMATION CONTOURS			
AFTER BACKFILLING Page 2.			



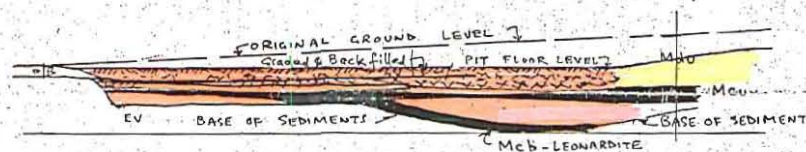




LONGITUDINAL SECTION 100 S

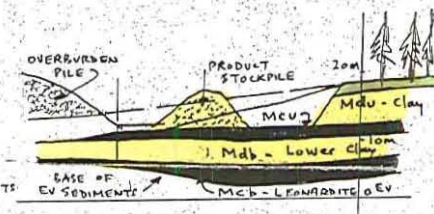


SECTION 150 W-WEST PIT

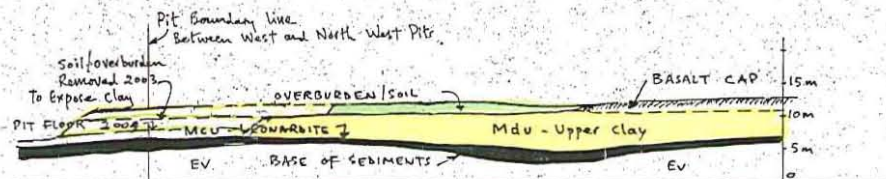


SECTION 50 E

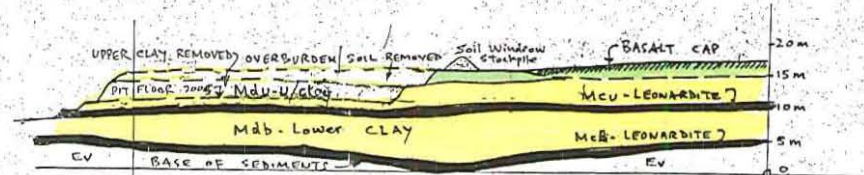
RED LAKE PIT



SECTION 350 E



SECTION 150 W-NORTH WEST PIT



SECTION 1100 E-BEPPLE PIT

PLAN N° MIN.2

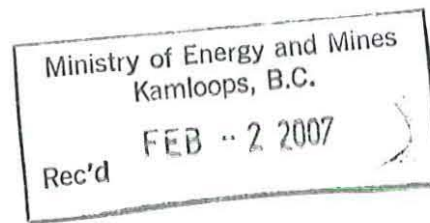
WESTERN INDUSTRIAL CLAY PRODUCTS LTD

SCALE: 1/2000 H  
1/500 VERT

DRAWN BY: W. F. F. F. F.  
DATE: 11/2005

SECTIONS THROUGH RED LAKE,  
WEST, NORTH-WEST, BEPPLE PITS

Eric W. Beresford, P.Eng.,  
Mining Consultant  
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Carstairs, Alberta T0M 0N0  
(403) 337-4031 FAX 337-2789  
Email: [ericwberesford@shaw.ca](mailto:ericwberesford@shaw.ca)



January 31, 2007

Diane Howe, M.A.Sc. P.Geo.  
Inspector of Mine, Reclamation and Environment  
Ministry of Energy and Mines  
P.O. 9320, Stn.Prov.Govt.  
Seventh Floor, 1675 Douglas Street  
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Yours truly,

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Eric W. Beresford, P.Eng.  
Mining Consultant

cc: Joe Seguin, Inspector of Mines, Manager Permitting, Kamloops, M.E.M. ✓  
Carol Howell, Reclamation Section, Victoria, M.E.M.  
Peter Aylen, C.A., M.B.A., President, Western Industrial Clay Products Ltd.  
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Mining Consultant

January 31, 2007



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Appendix. 1-Site photos, August 24, 2006

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A site visit was made to the property on August 24, 2006 and measured by GPS survey and plans up-dated to December 31, 2006. Photos were taken of the mining and reclamation progress to date, and included in the report. In early 2006, WICPL purchased the 44.0 hectares of Crown land within Mining lease No.310888.

## **2. Location**

The Red Lake quarry is 40 km north west of Kamloops, at an elevation of 1,300 metres. The first 8 km of the road is paved with the remaining 32 km a publically maintained gravel road. See Location Map.

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The soil and overburden layers over the area vary from 1.5 to 3.0 metres in thickness, and is excavated and used as backfill and soil for final pit reclamation. Andesite forms the base of the diatomaceous earth sediments.

#### **5. Reserves**

Estimated remaining reserves in the West Pit and Red Lake Pits at December 31, 2006 are Lower Clay 71,000 cu.metres, Upper Clay 25,000 cu.metres and Leonardite 70,000 cu.metres. In the North West Pit there are estimated recoverable clay reserves of 230,000 cu.metres of Upper Clay, 92,000 cu.metres of Lower Clay and 100,000 cu.metres of Leonardite. In the Bepple pit there are estimated recoverable clay reserves of 245,000 cu.metres of Upper Clay and Lower Clay 488,000 cu.metres and 305,000 cu.metres of Leonardite. Approximately 10% to 20% of the clay resource is reduced by natural outwash of the clay or contaminated during mining excavations. The contaminated clay material is stockpiled as overburden and used for reclamation of the site.

## **6. Mining and Production**

As the deposit is fairly flat lying the clay and overburden is removed by two T.S. 18 scraper machines, Cat D-8 bulldozer, Excavator and Loader. The average mining depth to final excavation of clay reserves throughout the quarry is between 6 to 10 metres. Stockpile areas are created and separated on site to prevent contamination of the varying products, before trucking to the Kamloops plant. Leonardite is stockpiled on site for future sales or used in reclamation of the site when blended with soil and overburden.

Drawings Min.1/Min.2Recl.1 show the up-dated mining and reclamation progress at December 31, 2006.

During year 2006 some 40,000 cu.metres of Upper Clay and 13,000 cu.metres of Lower Clay were mined. Production from the Red Lake quarry was 53,000 cu.metres which was processed through the Plant. A stockpile of about 10,000 cu.metres of clay is maintained between the minesite and the plant for access during the winter shutdown at the quarry.

In year 2007 mine development will continue as planned with an expected total clay production of between 50,000 to 55,000 cu.metres. During 2007 both Upper Clay and Lower Clay will be mined in the West Pit, North West Pit and the Bepple Pit together with Leonardite as it occurs in a mineable thickness.

In year 2007 it is expected that the remaining Lower Clay and Leonardite will be extracted in the Red Lake and West Pits and the majority of backfilling completed ready for final grading and seeding to both pit areas in 2007. The in-pit road along the north boundary of the Red Lake pit has been relocated to allow mining of the underlying clay and provide access to the Bepple Pit. The new temporary road to the south of the Red Lake pit will provide access to the North West pit and West pit.

WICPL produces a wide variety of absorbent granule products from the diatomaceous earth for the use as cat litter, animal barn litter, oil and chemical spills.

## **7. Reclamation**

Reclamation in 2006 consisted of removing soil and overburden from the North West Pit and Bepple Pit over an area of 7.0 hectares and placing this material directly into the mined out sections of the West Pit and Red Lake Pit. Excess soil material was stockpiled for later use as a final topping for the backfilling of the pits. Some 20,000 cu.metres of material from the Bepple Pit was placed as backfill for reclamation. An additional 5,000 cu.metres of overburden and soil was placed onto the mined out area in the West Pit and Red Lake pit from the existing overburden soil stockpiles.



Table 1 shows the amount of disturbed areas and the actual reclaimed areas with proposed yearly reclamation to the end of 2007. At December 31, 2006 the amount of disturbed and un-reclaimed area from all pits is 10.25 hectares. In year 2006 some 4.0 hectares of mined out land was backfilled and top soiled ready for final seeding to grass.

The total backfilled and graded area reclaimed and seeded in the Red Lake and West pits 19.4 hectares.

Table 2 shows the amount of backfill placement quantities including soil, overburden and waste material in present stockpiles on a yearly basis to completion of reclamation in the Red Lake and West Pit.

The Bepple and North West pits are now being developed as reclamation in the two original pits are substantially reclaimed and completed except for in-situ clay remnants and stockpiled soil and product clay..

At December 31, 2006 the amount of material in stockpile and available for backfill is estimated at 28,000 cu.metres. Waste material generated from cleaning off the clay and Leonardite layers is now placed directly as backfill where possible during mining operations and this material is not included in the actual stockpiled material as shown in Table 2.

Site photographs taken on August 24, 2006 are included in this report.

## **8. Reclamation Liability Cost Estimates**

Active progressive reclamation of disturbed ground in the Red Lake and West Pits has only been possible since 2001 because of the requirement to extract both clay layers and Leonardite so as to maximize resource extraction without sterilising any of the resources. Sequenced mining and reclamation development plans were approved under Permit Q-15-006 in October 2000 and have been followed.

WICPL utilize their own earth moving equipment to backfill and grade the mined out areas. The majority of the area requiring backfill and grading is included in the clay production costs if the overburden is being moved as part of the mining process. When overburden is moved separately and stockpiled or pushed into the mined out areas from existing stockpiles, then this cost is separated out as a direct reclamation cost. WICPL have allowed \$8,500.00 per ha for direct reclamation costs at the quarry workings based on actual costs over the past few years. Remaining disturbed area for reclamation and backfill is 1.0 ha for the Red Lake and West Pits. Some 1.25 ha of the reclaimed area is covered by stockpiles of soil/overburden and product.

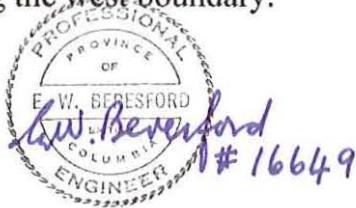
In the North West and Bepple pits clay removal will continue through 2007 to mine the Upper Clay material. Based on WICPL reclamation cost figures and the amount of unreclaimed area the current reclamation security bonding of \$70,000.00 is adequate to cover reclamation liability for the total quarry operation.

Overburden including waste clay not suitable for product blending and soil will be removed directly from the North West and Bepple Pits and placed on the West and Red Lake Pits for backfill and final reclamation. Total disturbed area in the North West and Bepple Pits is 7.5 ha.

### **9.0 Acid Rock Drainage Potential**

The diatomaceous earth (Fuller's Earth) being worked by WICPL is non-acid generating with a pH of between 6 to 7. Surface water flow is directed towards a natural vegetated gully on the west side of the property and there has been no leaching or other water quality issues on the Red Lake property.

Due to wet weather a small settlement pond was constructed in 2005 at the north west corner of the West Pit to collect pit run-off drainage from the North West and West Pits. This water is allowed to settle in the pond and clean water filtrates into the natural gully along the west boundary.



Eric W. Beresford, P.Eng.  
Mining Consultant

January 31, 2007



**TABLE 1**  
**SUMMARY of DISTURBED and RECLAIMED AREA**

**RED LAKE & WEST PITS**

	<b><u>Reclaimed hectares</u></b>	<b><u>Un-reclaimed hectares</u></b>
<b><u>Total Disturbed Area (un-claimed)</u></b> at December 31, 2000	-	20.40
Actual reclaimed year 2001	6.25	14.15
Actual reclaimed year 2002	4.00	10.15
Actual reclamation year 2003	3.00	7.15
Actual reclamation year 2004	3.50	3.65
Actual reclamation year 2005	2.25	1.40
Actual reclamation year 2006	<u>0.40</u>	<u>1.00</u>
Completed Reclamation at December 31, 2006	<u>19.40</u>	<u>1.00</u>
Area un-reclaimed at December 31,2006	-	1.00
Backfilled reclaimed area covered by stockpiles	-	1.25

**NORTH WEST & BEPPLE PITS**

Total disturbed area at December 31, 2006	-	7.50
Total un-reclaimed area at December 31, 2006	<u>-</u>	<u>7.50</u>
Total un-reclaimed at December 31, 2006 all pits	<u>-</u>	<u>8.00</u>

**TABLE 2**

**SUMMARY of RECLAMATION BACKFILL PLACEMENT**  
**(soil, overburden/waste)**

**RED LAKE and WEST PITS**

	<b><u>Cu.metres</u></b>
Material in stockpile at December 31, 2000	<u>219,000</u>
Actual backfill placement year 2001	74,000
Actual backfill placement year 2002	48,000
Actual backfill placement year 2003	32,000
Actual backfill placement year 2004	35,000
Actual backfill placement year 2005	10,000
Actual backfill placement from stockpiles 2006	5,000
Remaining stockpiled material	<u>15,000</u>
Balance	<u>219,000</u>

**NORTH WEST and BEPPLE PITS**

	<b><u>Cu.metres</u></b>
Material in stockpile at December 31, 2006	28,000
Material place directly into the West and Red Lake Pits as backfill in 2006	25,000



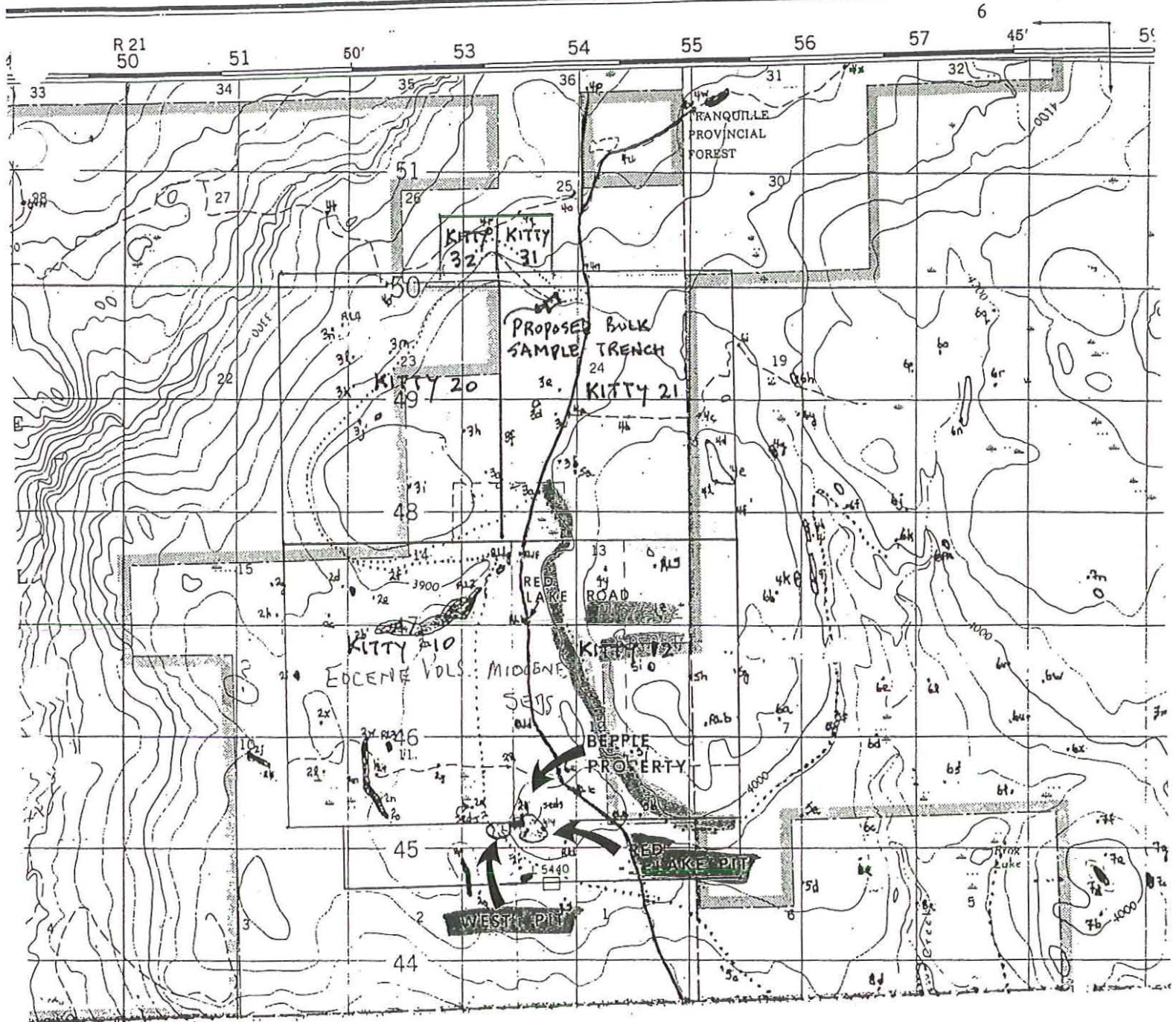
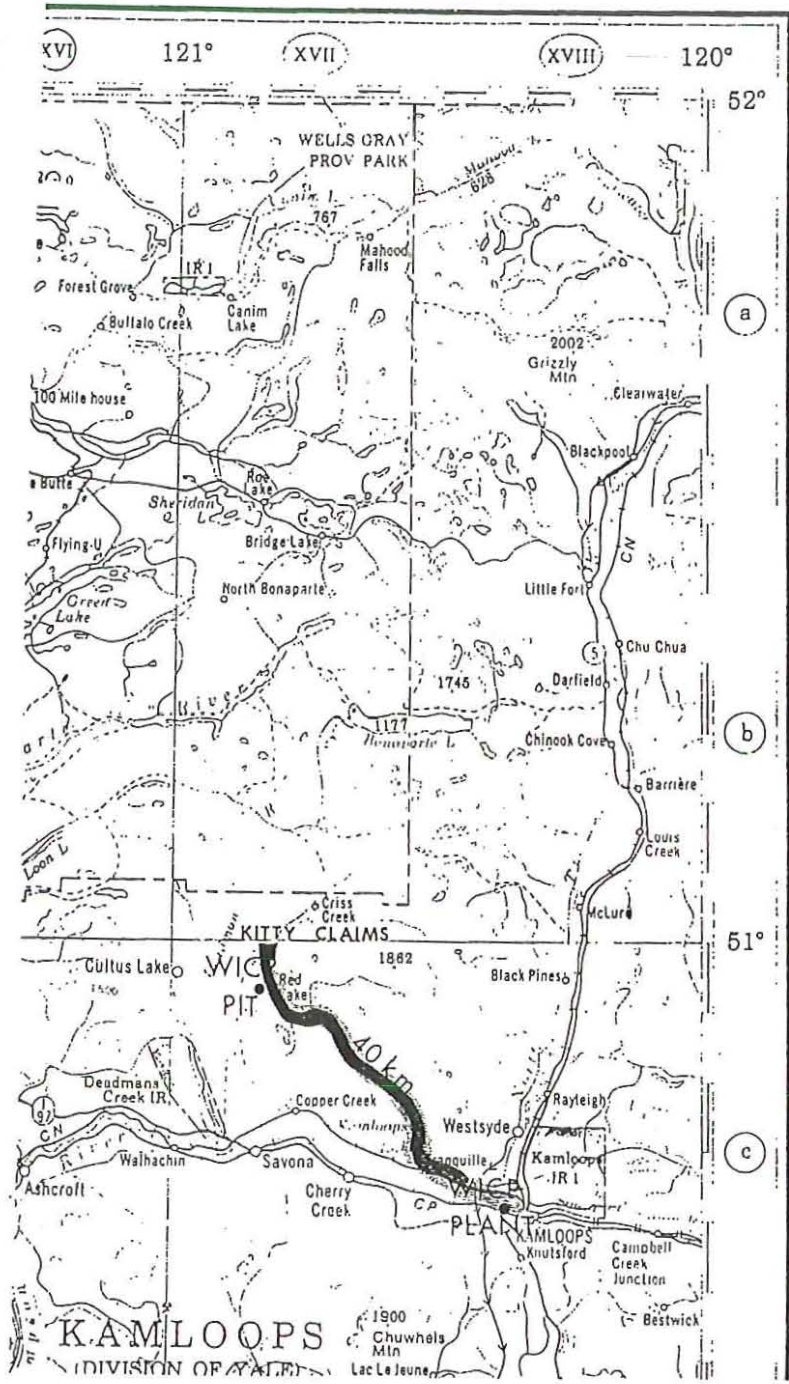


Figure 3: Regional geological map of the KITTY claims (outlined in yellow) which are underlain by a basement of Eocene volcanic rocks and overlain by diatomaceous Miocene sediments (MIOCENE SEDS) topped by basalt flows (MIOCENE BASALT).





SCALE 1:1 000 000 ÉCHELLE

0 10 20 30 40 50 60 70 80 90 100 110 Kilomètres



(EXCEPT THE EASTERLY 15 CHAINS OF LS 1)

$$\frac{30^{\circ}00'00''}{500.000}$$

Rec or Tenure#  
slb 367919  
Kitty 10

SEE DETAIL A

KITTY 3

N. 1/2 NE 1/4 SEC 2  
TP 23, R 21, W.6M.

REC. # 367916  
TAG # 689596 M  
LOC. FEBRUARY 22, 1999  
REC. #367774  
LOC. FEBRUARY 3, 1999

SW 1/4 SEC 12

2" (EXCEPT THE SW 1/4 OF THE SW 1/4)  
TP 23, R 21, W.6M.

KITTY 16

AREA = 2.68 ha.  
— REC. # 367915  
TAG # 689595 M  
LOC. FEB. 22, 1999

SEE DETAIL

INITIAL POST  
KITTY 16

KITTY 15

AREA = 6.25 ha.  
REC. # 367914  
TAG # 689594 M  
LOC. FEBRUARY 22, 1999

D. L. 6 3 8 5

KITTY 14

AREA = 21.4 ha.

REC. # 367913  
TAG # 689593 M  
LOC. FEBRUARY 22, 1999

— BEPPLE PIT

## RED LAKE PIT

16.0 kg. 1

BLOCK A  
NW 1/4 SEC 1  
TP 23, R 21, W.6M.

**Mining Lease # 310888**

Kitty 1

BLOCK B  
NW 1/4 SEC 1  
P 23, R 21, W.6M.

REC. # 218218 (#8258)  
TAG # 117309  
LOC. JANUARY 19, 1989

MINERAL TENURE- MINING LEASE #310888

SCALE: 1 | 5,000

Mine Permit Q - 15 - 006

EGM-2013-00020  
Page 33



**Red Lake Pit - overburden stockpile being removed**



**West Pit -clay remnants being worked and product stockpiles**





**Red Lake/West Pit - reclaimed and seeded area after one year.**



**West Pit - backfilled/graded, ready for seeding**





**New road location-product stockpiles - view East to office trailer**



**Red Lake Pit - backfilled and graded area ready for topsoil and seed**





**Excavator trench - exposed basalt cap rock ,Beppe Pit south.**



**Beppe Pit- topsoil removed - cabin in background.**



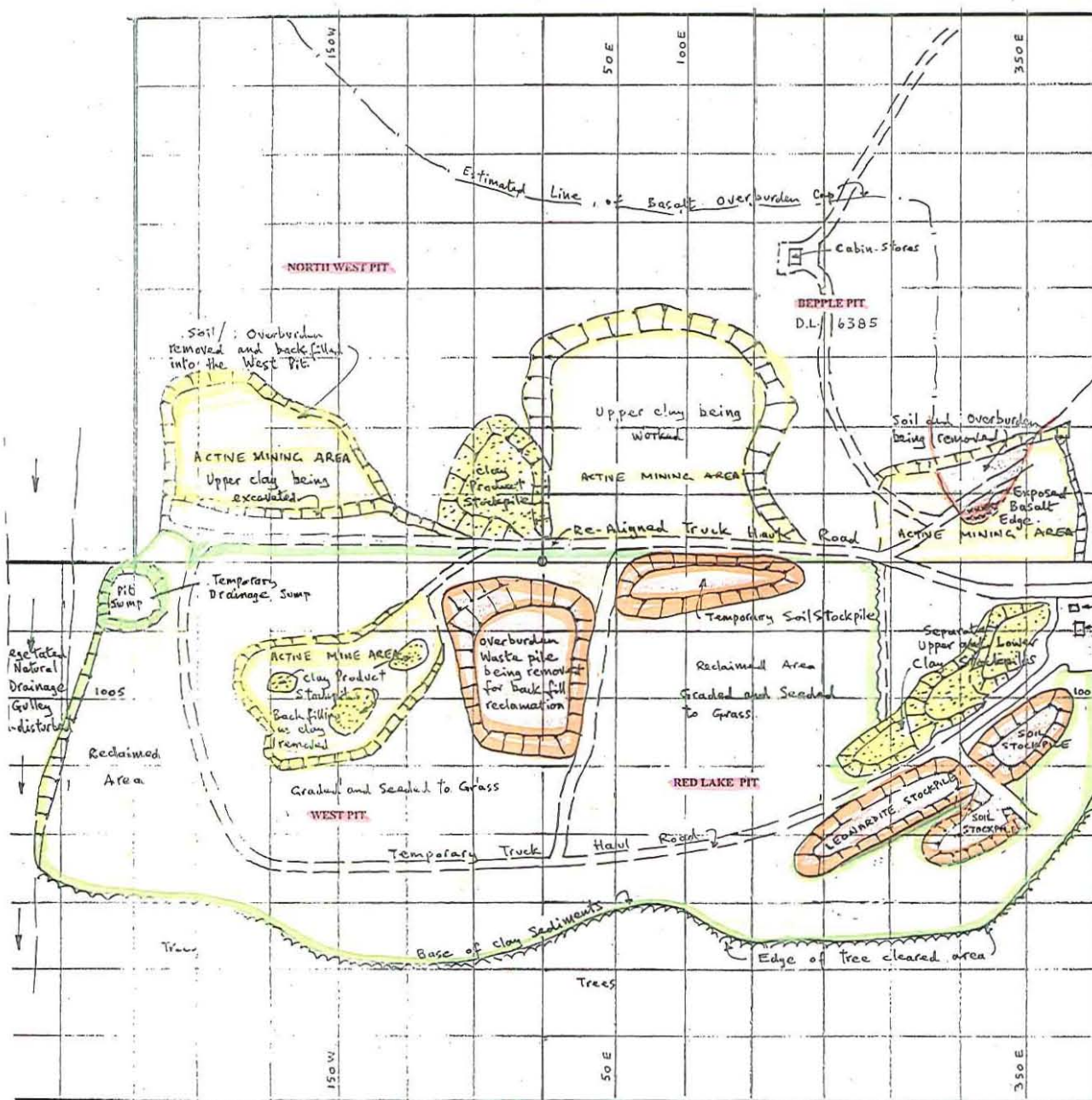


**West Pit - in pit water collection pond**



**West Pit - levelling, topsoil placement from stockpile.**





# STRATIGRAPHY OF MIOCENE DEPOSITS

Average thickness range	
metres	Basalt cap. if present
1.5-3.0	SOIL OVERBURDEN
4.0-6.0	UPPER CLAY
1.0-1.5	LEONARDITE
3.0-6.0	LOWER CLAY
1.0-2.0	LEONARDITE
Base of Sediments	ANDESITE

## TOTAL BACKFILL & RECLAMATION AREA

Gated Entrance  
 ENTRANCE ROAD  
 Store  
 Office Trailer

Red Lake Quarry, West Pit  
 North West & Bepple Pits

### Reclamation Progress 2006

- 1) Backfilling and topsoil placement and grading continued in the Red Lake and West Pit areas.
- 2) Seeding to grass continued in the disturbed areas after grading.
- 3) Pit water drainage directed into a temporary sump in the north west corner of the West Pit.
- 4) Upper and Lower Clays blended to produce a run-of-mine product for the Kamloops Plant.

### Mining Development 2006

- 1) Soil and overburden removal continued in the Bepple Pit in the south east corner.
- 2) Temporary stockpiles formed on the mined out and graded areas of the Red Lake Pit.
- 3) Clay extraction continued mainly in the Bepple Pit and North West Pit with remnants from the West Pit.
- 4) The main truck haul road has been re-aligned to allow the underlying clay to be mined. A temporary haul road is maintained to access the West Pit area.

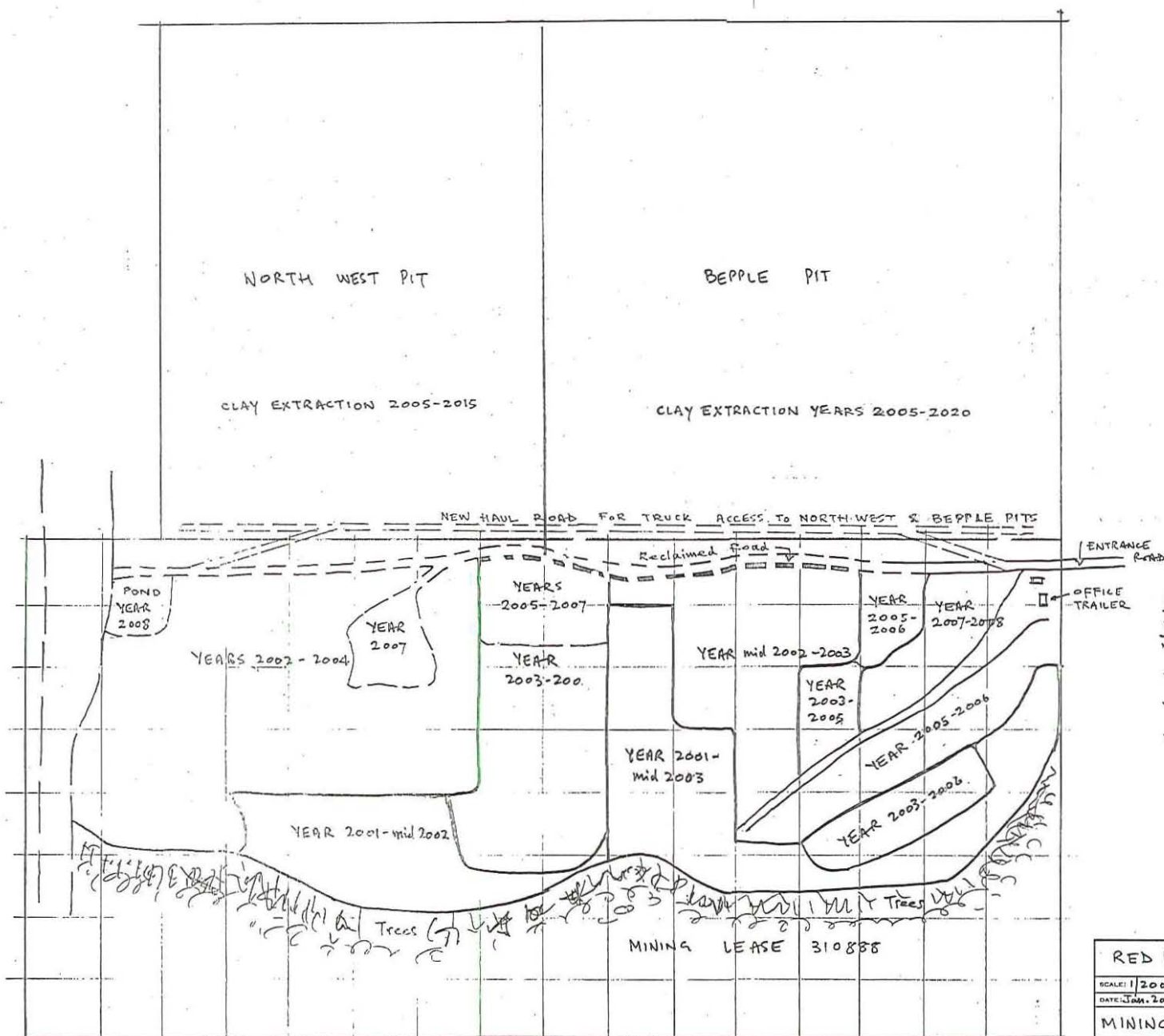
RED LAKE QUARRY, WEST PIT,  
 NORTH WEST & BEPPLE PITS

SCALE: 1/2,000  
 DATE: 31/2006  
 Mining Lease # 310688

Plan of Existing Workings & Reclamation Progress

EGM 2013-00020

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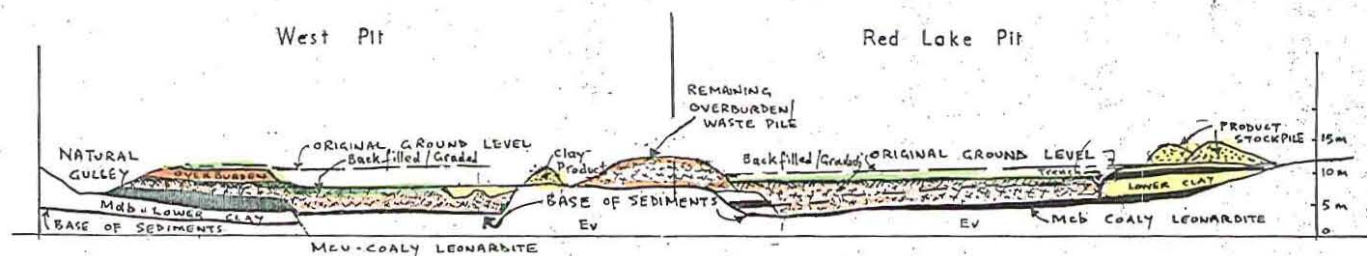
# RED LAKE & WEST PITS RECLAMATION SEQUENCE

YEAR 2001-2003	10.2 ha
YEAR 2003-2004	6.5 ha
YEAR 2004-2006	2.7 ha
YEAR 2006	TOTAL 19.4 ha
Un-Reclaimed Area	1.0 ha
Stockpiles on Reclaimed Area	1.25 ha
Site Disturbed Area	20.4 ha

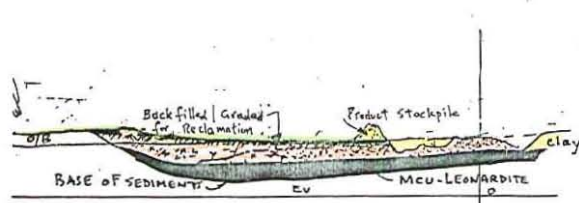
## RED LAKE & WEST PITS

SCALE: 1:2000	APPROVED BY: WESTERN INDUSTRIAL	DRAWN BY: EUB.
DATE: Jan. 2007	CLAY PRODUCTS	REVISED: 2006

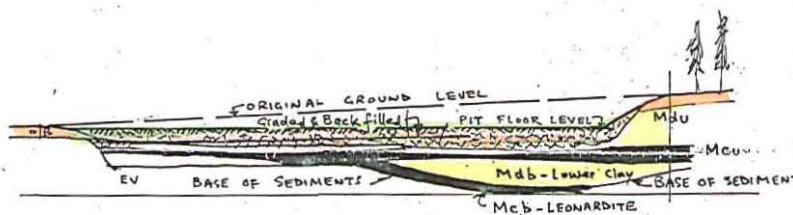




LONGITUDINAL SECTION 100 S

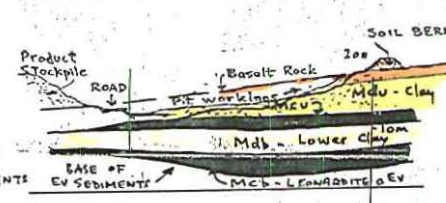


SECTION 150W-WEST PIT

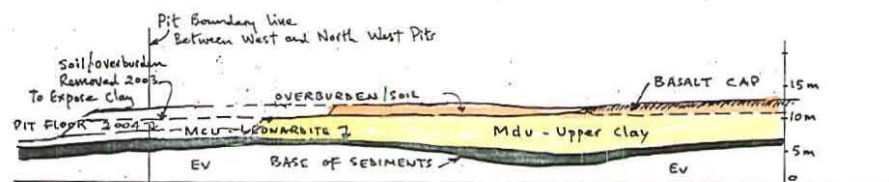


SECTION 50E

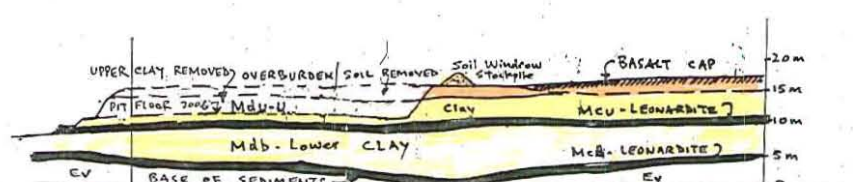
RED LAKE PIT



SECTION 350E



SECTION 150W-NORTH WEST PIT



SECTION 100E-BEPPLE PIT

PLAN N° MIN.2

WESTERN INDUSTRIAL CLAY PRODUCTS LTD

SCALE: 1/2000 H  
1/500 VERT

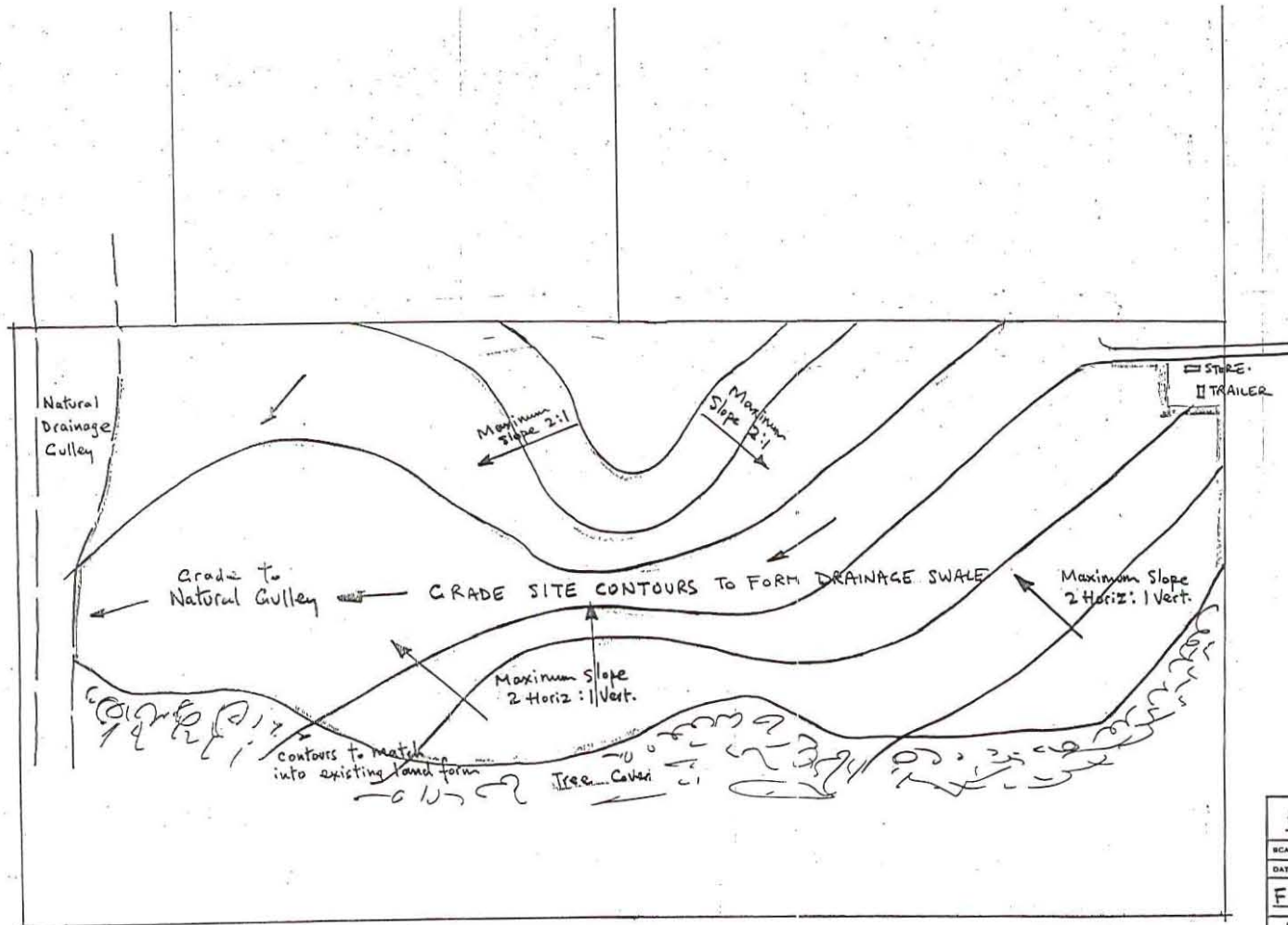
ENCLOSURE Plan  
January 31 2007

SECTIONS THROUGH RED LAKE

WEST, NORTH-WEST, BEPPLE PITS

EGM-2013-00020

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#### Notes:

- All disturbed areas to be covered with a minimum depth of 1.0 meter of soil and overburden for the growth medium, after backfilling.
- All disturbed areas to be seeded with an approved seed mixture.
- All slopes left at a maximum of 2 Horiz: 1 Vert. or flatter.
- Area graded for drainage to the gully.

#### RED LAKE & WEST PITS

SCALE: 1	2000	APPROVED BY:	WESTERN INDUSTRIAL	DRAWN BY:	EWB.
DATE:			CLAY PRODUCTS LTD.	REVISED:	Jan. 2006

#### FINAL RECLAMATION CONTOURS

AFTER BACKFILLING	DRAWING NUMBER
	Recl. 2.



Eric W. Beresford, P.Eng.,  
Mining Consultant  
P.O. Box 1529  
Carstairs, Alberta TOM 0N0  
(4-3\_ 337-4031 FAX 337-2789  
Email: [ericwberesford@shaw.ca](mailto:ericwberesford@shaw.ca)

March 24, 2008

Diane Howe, M.A.Sc. P.Geo.  
Inspector of Mine, Reclamation and Environment  
Mining Operations Branch  
Ministry of Energy and Mines  
P.O. Box 9320, Stn Prov. Govt.  
Seventh Floor, 1675 Douglas Street  
Victoria, B.C. V8W9N3

Dear Diane Howe:

**Mine Permit Q-15-006, Annual Reclamation Report  
Western Industrial Clay Products Ltd., Kamloops**

On behalf of Western Industrial Clay Products., I enclose the year 2007 Annual Reclamation Report for the Red Lake Quarry. Mining development of the clay extraction and reclamation progress are shown for the Red Lake, West, North West Pits and Beppe Pit in Mining Lease No.310888 and DL 6385.

Should you have any questions of a technical nature regarding the report, please direct them to the undersigned as I act as consultant to Western Industrial Clay Products Ltd.

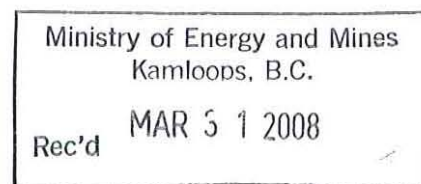
Yours truly,



Eric W. Beresford, P.Eng.,  
Mining Consultant

**Attachment:**

cc: Joe Seguin, Manager, Kamloops M.E.M.  
Peter Aylen, C.A.,M.B.A., President, Western Industrial Clay Products Ltd.  
Dave Bowers, Mine Manager



**WESTERN INDUSTRIAL CLAY PRODUCTS LTD.**

**a division of ABSORBENT PRODUCTS LTD.**

**ANNUAL RECLAMATION REPORT**

**For YEAR 2007**

**RED LAKE QUARRY**

**(Red Lake, West, North West and Bepple Pits**

**MINE PERMIT Q-15-006**

**MINING LEASE NO.31088 & D.L. 6385**

E.W. Beresford,P.Eng.  
Mining Consultant

March 24, 2008



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1. Introduction
2. Location
3. Regional Geology
4. Red Lake Stratigraphy
5. Reserves
6. Mining and Production
7. Reclamation
8. Reclamation Liability Cost Estimates
9. Acid Rock Drainage Potential

### **List of Drawings**

- Location Map Scale 1/1,000,000
- Mineral Tenure Lease No. 310888, Scale 1/5,000
- Regional Geology – Scale 1/50,000
- Min. 1 Existing workings – Red Lake and West Pits, Scale 1/2,000
- Min. 2 Sections through Red Lake, West, North West, Bepple Pits  
Scale 1/500 Vertical and 1/2000 Horizontal.
- Recl. 1 Mining Sequence Plan and Reclamation Progress. Scale 1/2,000
- Recl. 2 Final Reclamation Contours after Backfilling. Scale 1/2,000

### **Appendices**

Appendix. 1-Site photos, September 18, 2007

### **List of Tables**

Table 1 – Summary of Disturbed and Reclaimed Area – W.I.C.P. Land

Table 2 – Summary of Disturbed Area and Reclamation Backfill Placement–Bepple Land

## **1. Introduction**

This report details mining and reclamation activities carried out at the Red Lake Quarry to December 31, 2007 and a forecast of estimated completion dates and reclamation cost estimates for each separate pit area. This mine is operated under permit Q-15-006 issued to Western Industrial Clay Products Ltd., (WICPL) in 1994 with subsequent amendments in 1996, 2001, and 2003. Western Industrial Clay Products Ltd., is a division of Absorbent Products Ltd.

A 20 year Mining lease No. 310888 was granted to WICPL on November 30, 1992 which expires in 2012. Mining Lease No. 310888 was extended to include the Bepple property and now comprises a total of 60 hectares (150 acres) divided into four mining areas, namely Red Lake, West, North West and Bepple pits. Clay was excavated from the West, North West and Bepple pits during 2007. Reclamation work including backfilling and grading of mined out areas and seeding to grass has been continued in 2007 in the Red Lake and West pit areas.

A site visit was made to the property on September 18, 2007 and measured by GPS survey and plans up-dated to December 31, 2007. Photos were taken of the mining reclamation progress to date, and included in the report. In early 2006, WICPL purchased the 44.0 hectares of Crown land within Mining lease No.310888.

## **2. Location**

The Red Lake quarry is 40 km north west of Kamloops, at an elevation of 1,300 metres. The first 8 km of the road is paved with the remaining 32 km a publically maintained gravel road. See Location Map.

WICPL have their processing, bagging plant, distribution warehouse and office at Kamloops, and operate year round. The mining and trucking of the raw material to the Kamloops Plant is of a seasonal nature to avoid winter conditions and usually operates about 7 to 8 months of the year.

## **3. Regional Geology**

The diatomaceous earth (Fuller's earth) deposit near Red Lake lies in the Miocene fluvialite and lacustrine sediments near the base of the Deadman River Formation. Both the capping olivine basalt flows of the Chasm Formation and the underlying sediments are part of the Chilcotin Group. The sediments mainly fill a regionally north to northwesterly flowing drainage system that was buried by basalt flows which spread



across the upland topography of central British Columbia. The Miocene sediments and volcanics lie on a basement composed of Eocene basalt/andesite flows of the Kamloops Group, or conglomerate and sandstone of the Jurassic Ashcroft Formation, or basic meta-volcanic rocks of the Upper Triassic Nicola Group.

#### **4. Red Lake Quarry Stratigraphy**

The diatomaceous earth reserves have been proven by extensive auger drilling and excavator test pits over the whole of the lease area. The basalt cap is only present in the north part of the North West and the Bepple property, and has been exposed in an excavator trench in the south east part of the Bepple pit..

The diatomaceous earth deposit is divided into Upper and Lower Clay and separated by a carbonaceous shale/lignite seam of approximately 1.0 to 1.5 metres in thickness known as Leonardite. A basal Leonardite seam is also present in parts of the quarry. The Leonardite seam is rich in humic and fulvic acids and is mined separately for future use as a soil conditioner, and peat enhancement. The Upper Clay is between 4.0 to 6.0 metres in thickness and found in the Red Lake pit and Bepple pit and the Lower clay is between 3.0 to 6.0 metres and present throughout the lease. Because the Upper and Lower clays have different specific gravities varying from 0.59g/cc to 0.51g/cc this causes problems with marketing based on differing weights and using the same bag size. The plant was originally designed around mining only the Upper Clay layers at a 0.59g/cc. The company is currently blending the upper and lower clays to produce a variety of product specifications to meet customer requirements.

The soil and overburden layers over the area vary from 1.5 to 3.0 metres in thickness, and is excavated and used as a backfill and soil for final pit reclamation. Andesite forms the base of the diatomaceous earth sediments.

#### **5. Reserves**

Estimated remaining reserves in the West Pit and Red Lake Pits at December 31, 2007 are Lower Clay 62,000 cu.metres, Upper Clay 20,000 cu.metres and Leonardite 70,000 cu.metres. In the North West pit there are estimated recoverable clay reserves of 220,000 cu.metres of Lower Clay and 100,000 cu.metres of Leonardite. In the Bepple pit there are estimated recoverable clay reserves of 230,000 cu.metres of Upper Clay and Lower Clay 475,000 cu.metres and 302,000 cu.metres of Leonardite. Approximately 10% to 20% of the clay resource is reduced by natural outwash of the clay or contaminated during mining excavations. The contaminated clay material is stockpiled as overburden and used for reclamation of the site.

## **6. Mining and Production**

As the deposit is fairly flat lying the clay and overburden is removed by two T.S. 18 scraper machines, Cat D-8 bulldozer, excavator and Loader. The average mining depth to final excavation of the clay reserves throughout the quarry is between 6 to 10 metres. Stockpile areas are created and separated on site to prevent contamination of the varying products, before trucking to the Kamloops plant. Leonardite is stockpiled on site for future sales or used in reclamation of the site when blended with stockpiled soil.

Drawings Min.1/Min.2Recl.1 show the up-dated mining and reclamation progress at December 31, 2007.

During year 2007 some 30,000 cu.metres of Upper Clay and 25,000 cu.metres of Lower Clay were mined. Total production from the Red Lake quarry was 55,000 cu.metres which was processed through the Plant. A stockpile of about 10,000 cu.metres of clay is maintained between the minesite and the plant for access during the winter shutdown at the quarry.

In year 2008 mine development will continue as planned with an expected total clay production of between 50,000 to 55,000 cu.metres. During 2008 a combination of Upper Clay and Lower Clay will be mined in the West Pit, North West Pit and the Bepple Pit together with Leonardite as it occurs in a mineable thickness.

In year 2009 it is expected that the remaining Lower Clay and Leonardite will be extracted in the Red Lake and West pits and the majority of backfilling completed ready for final grading and seeding to both pit areas in 2009. The in-pit road along the north boundary of the Red Lake pit has been relocated to allow mining of the underlying clay and provide access to the Bepple Pit. The new temporary road to the south of the Red Lake pit will provide access to the North West pit and West pit.

WICPL produces a wide variety of absorbent granule products from the diatomaceous earth for the use as cat litter, animal barn litter, oil and chemical spills.

## **7. Reclamation**

Reclamation in 2007 consisted of removing soil and overburden from the Bepple Pit and placing this material directly into the mined out sections of the West Pit. Some 10,000 cu.metres of material from the Bepple Pit was placed as backfill for reclamation. An additional 8,000 cu.metres of overburden and soil was placed onto the mined out area in the West Pit and Red Lake pit from the existing overburden soil stockpiles.



Table 1 shows the amount of un-disturbed area, disturbed area and reclaimed area within the W.I.C.P. land at the end of 2007. At December 31, 2007 the amount of disturbed and un-reclaimed area from all pits is 8.50 hectares. In year 2007 some 4.0 hectares of mined out land was backfilled and top soiled ready for final seeding to grass.

The total backfilled and graded area reclaimed and seeded in the Red Lake and West pits 17.15 hectares.

Table 2 shows the amount of backfill placement quantities including soil, overburden and waste material in present stockpiles on a yearly basis to completion of reclamation in the Red Lake and West Pit.

The Bepple and North West pits are now being developed as reclamation in the two original pits are substantially reclaimed and completed except for in-situ clay remnants and stockpiled soil and product clay.

At December 31, 2007 the amount of material in stockpile and available for backfill is estimated at 18,000 cu.metres. Waste material generated from cleaning off the clay and Leonardite layers is now placed directly as backfill where possible during mining operations and is not taken to the overburden stockpile.

Site photographs taken on September 18, 2007 are included in this report...

## **8. Reclamation Liability Cost Estimates**

Active progressive reclamation of disturbed ground in the Red Lake and West Pits has only been possible since 2001 because of the requirement to extract both clay layers and Leonardite so as to maximize resource extraction without sterilizing any of the resources. Sequenced mining and reclamation development plans were approved under Permit Q-15-006 in October 2000 and have been followed.

WICP utilize their own earth moving equipment to backfill and grade the mined out areas. The majority of the area requiring backfill and grading is included in the clay production costs if the overburden is being moved as part of the mining process. When overburden is moved separately and stockpiled or pushed into the mined out areas from existing stockpiles then this cost is separated out as direct reclamation cost. WICPL have allowed \$8,500.00 per ha for direct reclamation costs at the quarry workings based on actual costs over the past few years. Remaining disturbed area for reclamation and backfill is 2.0 ha for the Red Lake and West Pits. Some 1.25 ha of the reclaimed area is covered by stockpiles of soil/overburden and product.

In the North West and Bepple pits clay removal will continue through 2008. Based on WICPL reclamation cost figures and the amount of un-reclaimed area the current reclamation security bonding of \$70,000.00 is adequate to cover reclamation liability for the total quarry operation.

Overburden including waste clay not suitable for product blending and soil will be removed directly from the North West and Bepple Pits and placed on the West and Red Lake Pits for backfill and final reclamation. Total disturbed area all pit areas is 8.50 ha.

### **9. Acid Rock Drainage Potential**

The diatomaceous earth (Fuller's Earth) being worked by WICPL is non-acid generating with a ph of between 6 to 7. Surface water flow is directed towards a natural vegetated gully on the west side of the property and there has been no leaching or other water quality issues on the Red Lake property.

Due to wet weather a small settlement pond was constructed in 2005 at the north west corner of the West Pit to collect pit run-off drainage from the North West and West Pits. This water is allowed to settle in the pond and clean water filtrates into the natural gully along the west boundary, and the pond is still operating efficiently.

  
Eric W. Beresford, P.Eng.  
Mining Consultant

*licence  
#16649*

March 24, 2008



**TABLE 1**

**Summary of Disturbed and Reclaimed Area**  
**Red Lake Pit, West Pit, North West Pit.**

**Privately owned land (formerly Crown land)**

Land owned by Absorbent Products Ltd. (W.I.C.P.) is 44.0 ha.

• Area un-disturbed by mining, natural state	11.60 ha
• Area reclaimed by backfilling pits and seeding to grass	17.15 ha
• Area un-disturbed by mining (logged only)	<u>10.50 ha</u>
Total undisturbed and reclaimed	<u>39.25 ha</u>
• Active mining area including soil and overburden Stockpiles, product stockpiles, in-pit roads	<u>4.75 ha</u>
Total privately owned land area	<u>44.00 ha</u>

**TABLE 2**

**Summary of Additional Land**

**Disturbed and Reclaimed.**

**Bepple Pit**

• Total land owned by the Bepple family	16.0 ha
• Un-disturbed area	12.25 ha
• Disturbed area, active mine area, including stockpiles, in-pit road.	<u>3.75</u> ha
	<u>16.00</u> ha

**Summary All Pits**

• Reclamation – backfill placement, seeding total area	17.15 ha
• Disturbed area, active mine area un-reclaimed At December 31, 2007	8.50 ha



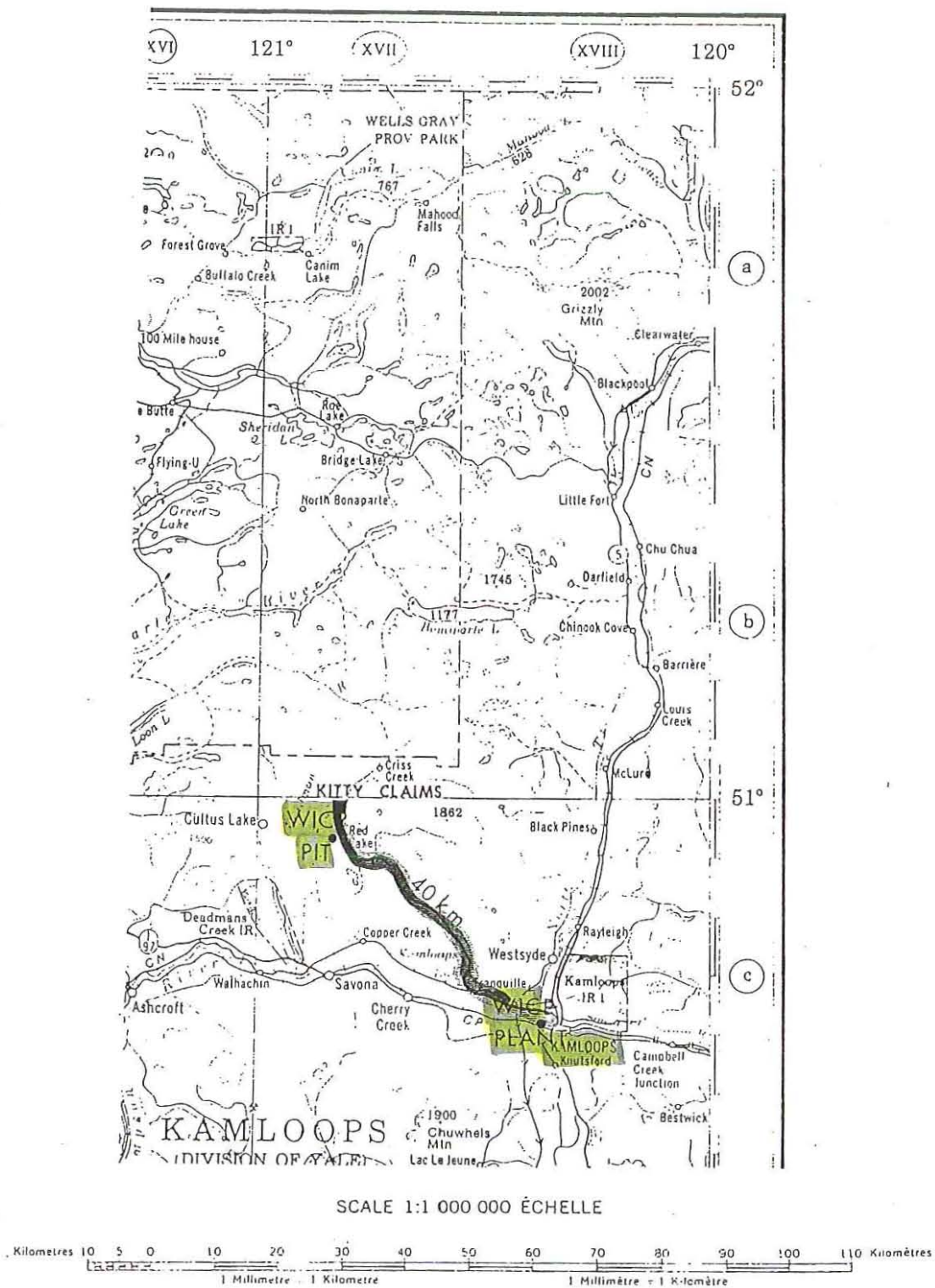


Figure 2: Regional map showing the locations of KITTY 21 and 23-30 claims, Western Industrial Clay Products Red Lake Open Pit and plant in Kamloops separated by 40 km of haul road.

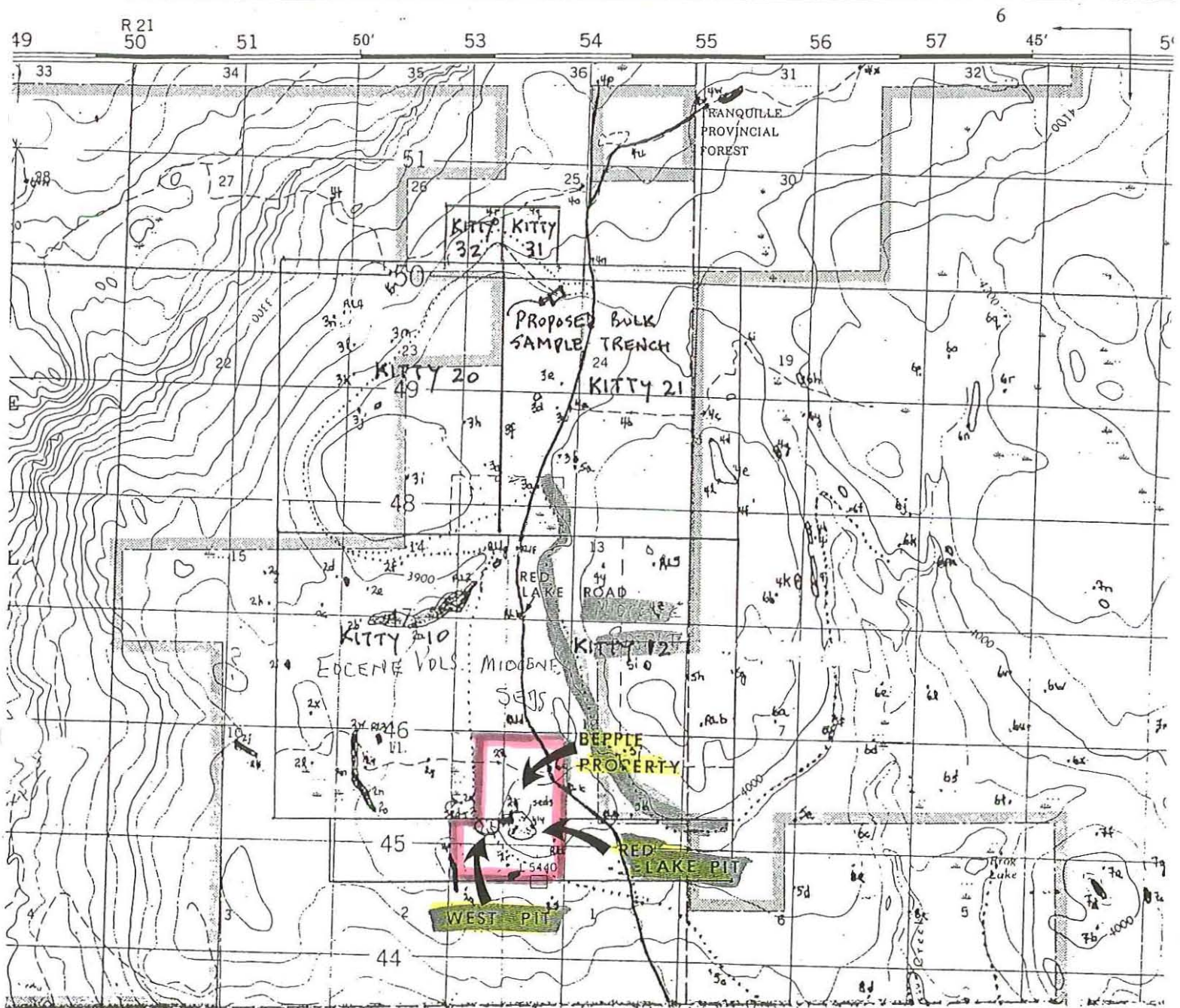
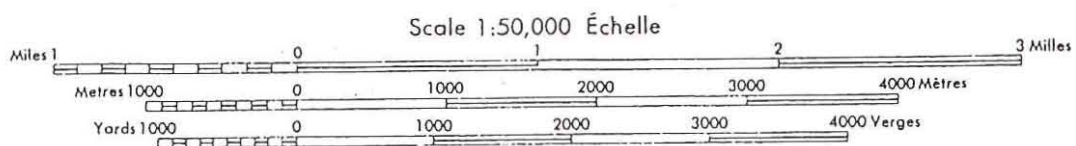


Figure 3: Regional geological map of the KITTY claims (outlined in yellow) which are underlain by a basement of Eocene volcanic rocks and overlain by diatomaceous Miocene sediments (MIOCENE SEDS) topped by basalt flows (MIOCENE BASALT).



NTS-MAP SHEET 92-1/15







WEST PIT - BACKFILLING - PLACEMENT OF SOIL  
& LEONARDITE COVERING.



WEST PIT - GRADED AREA, RECLAIMED & READY  
FOR SEEDING TO GRASS





SOIL | OVERBURDEN STOCKPILE - RED LAKE PIT



LEONARDITE STOCKPILE BEING USED FOR RECLAMATION  
AS TOP SOIL DRESSING - RED LAKE PIT.





WEST PIT - SOIL | LEONARDITE COVERING OVERBURDEN



BACKFILLING OVERBURDEN | SOIL COVER - WEST PIT





NORTH WEST PIT - EXCAVATING CLAY AND  
BACK FILLED RECLAIMED AREA IN FOREGROUND



CLAY PRODUCT STOCKPILE - RED LAKE PIT





BEPPE PIT - CLAY WORKINGS  
RED LAKE RECLAMATION IN FOREGROUND



CLAY PRODUCT STOCKPILES - RED LAKE PIT





Notes:

- All disturbed areas to be covered with a minimum depth of 1.0 metre of soil and overburden for the growth medium, after backfilling.
- All disturbed areas to be seeded with an approved seed mixture.
- All slopes left at a maximum of 2 Horiz: 1 Vert. or flatter.
- Area graded for drainage to the gully.

**RED LAKE & WEST PITS**

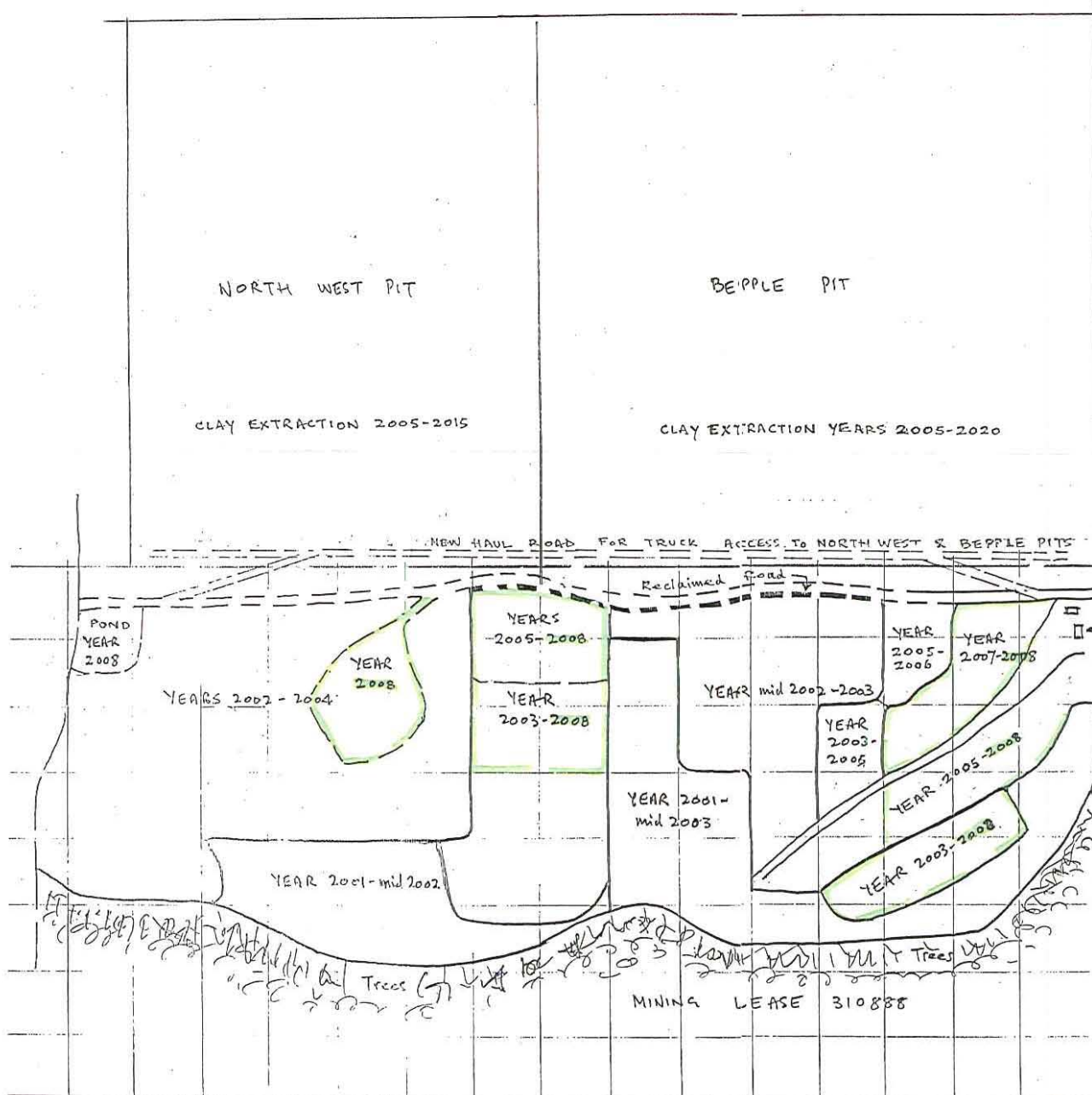
SCALE: 1:2000	APPROVED BY: WESTERN INDUSTRIAL CLAY PRODUCTS LTD.	DRAWN BY: EWB.
DATE:	REVISED: Jan. 2005	

**FINAL RECLAMATION CONTOURS**

**AFTER BACKFILLING**

ECM 2013 00020

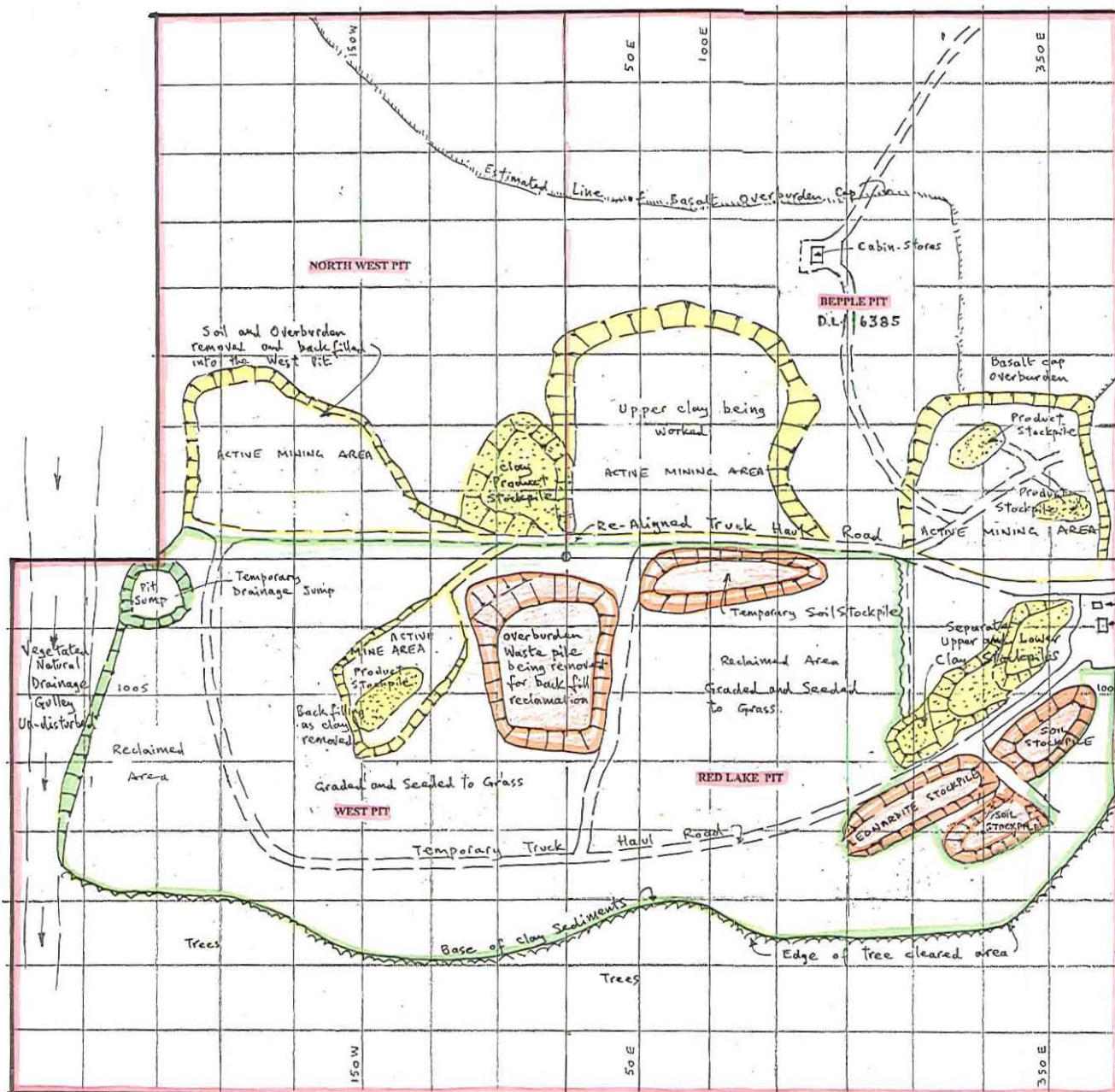
Page 2 of 2



RED LAKE & WEST PITS  
RECLAMATION SEQUENCE

RED LAKE & WEST PITS		
SCALE: 1/2000	APPROVED BY: WESTERN INDUSTRIAL CLAY PRODUCTS	DRAWN BY: ELB.
DATE: Jan. 2007		REVISED 2006
MINING SEQUENCE PLAN & RECLAMATION.		





# STRATIGRAPHY OF MIOCENE DEPOSITS

Average thickness range

metres	Basalt cap if present
1.5-3.0	SOIL OVERBURDEN
4.0-6.0	UPPER CLAY
1.0-1.5	LEONARDITE
3.0-6.0	LOWER CLAY
1.0-2.0	LEONARDITE
Base of Sediments	ANDESITE

— TOTAL BACKFILL & RECLAMATION AREA

Gated Entrance

ENTRANCE ROAD

Red Lake Quarry, West Pit  
North West & Bepple Pits

Store  
Office Trailer

Reclamation Progress 2007

- 1) Backfilling and topsoil placement and grading continued in the Red Lake and West Pit areas.
- 2) Seeding to grass continued in the disturbed areas after grading.
- 3) Pit water drainage directed into a temporary sump in the north west corner of the West Pit.
- 4) Upper and Lower Clays blended to produce a run-of-mine product for the Kamloops Plant.

Mining Development 2007

- 1) Soil and overburden removal continued in the Bepple Pit in the south east corner.
- 2) Temporary stockpiles formed on the mined out and graded areas of the Red Lake Pit.
- 3) Clay extraction continued mainly in the Bepple Pit and North West Pit with remnants from the West Pit.
- 4) The main truck haul road has been re-aligned to allow the underlying clay to be mined.  
A temporary haul road is maintained to access the West Pit area.

G.W. Beverford P.Eng.

RED LAKE QUARRY, WEST PIT,  
NORTH WEST & BEPPLE PITS

Scale: 1/2,000 Mining Lease # 310888 E.W. Beverford P.Eng.  
Date: Dec. 31/2007

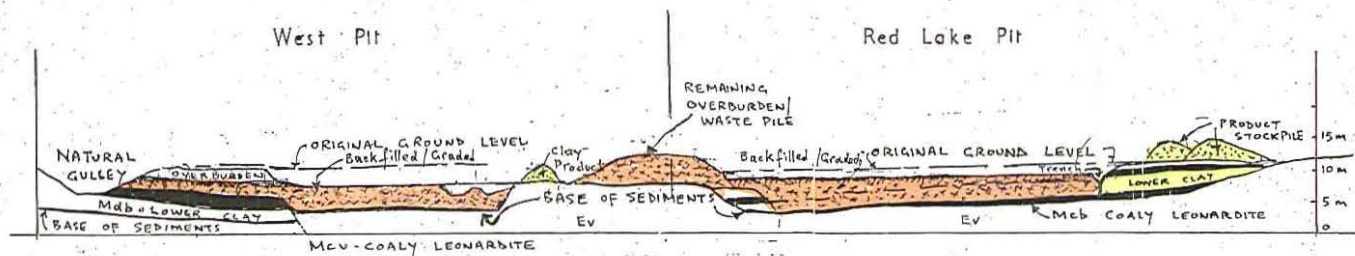
Plan of Existing Workings & Reclamation

Mine Permit Q-15-006

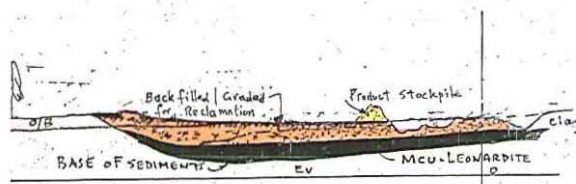
EGM-2013-00020

Page 63

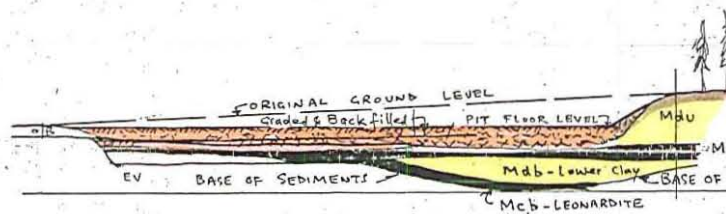
M.T.N. F.



LONGITUDINAL SECTION 100 S

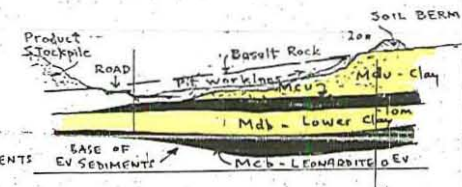


SECTION 150 W - WEST PIT

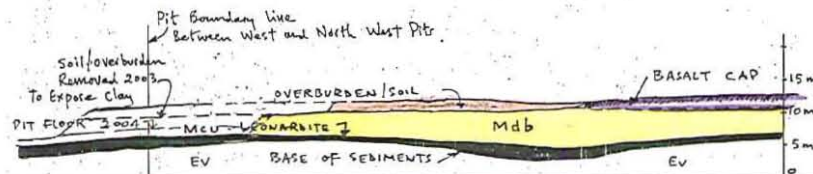


SECTION 50 E

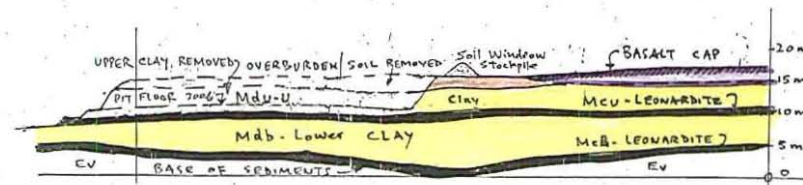
RED LAKE PIT



SECTION 350 E



SECTION 150 W - NORTH WEST PIT



SECTION 100 E - BEPPE PIT

R.W. Beresford P.Eng

PLAN N° MIN.2

WESTERN INDUSTRIAL CLAY PRODUCTS LTD

SCALE: 1/2000 H  
1/500 VERT

R.W. Beresford P.Eng  
Dec 31/2007

SECTIONS THROUGH RED LAKE,

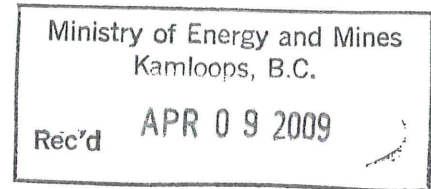
WEST, NORTH-WEST, BEPPE



Eric W. Beresford, P.Eng.,  
Mining Consultant  
P. O. Box 1529  
Carstairs, Alberta T0M 0N0  
403 337-4031 fax 337-2789  
E-mail; [ericwberesford@shaw.ca](mailto:ericwberesford@shaw.ca)

March 27, 2009

Diane Howe, M.A.Sc. P.Geo.,  
Deputy Chief Inspector of Mines  
Ministry of Energy and Mines  
P. O. Box 9320, Stn Prov. Govt  
Seventh Floor, 1675 Douglas Street  
Victoria, BC V8W 9N3



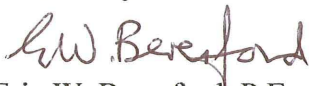
Dear Diane Howe:

**Mine Permit Q-15-006, Annual Reclamation Report  
Absorbent Products Ltd./Western Industrial Clay Products Ltd., Kamloops**

On behalf of Western Industrial Clay Products, I enclose the year 2008 Annual Reclamation Report for the Red Lake Quarry. Mining development of the clay extraction and reclamation progress are shown for the Red Lake, West, North West Pits and Bepple pit in Mining Lease No.310888 and DL 6385.

Should you have any questions of a technical nature regarding the report, please direct them to the undersigned as I act as consultant to Western Industrial Clay Products Ltd.

Yours truly,

  
Eric W. Beresford, P.Eng.,  
Mining Consultant

Attachment:

Cc: Joe Seguin, Regional Director, Kamloops M.E.M ✓  
Peter Aylen, C.A., M.B.A., President, Western Industrial Clay Products Ltd.  
Dave Bowers, Mine Manager

**WESTERN INDUSTRIAL CLAY PRODUCTS LTD.**

**a division of ABSORBENT PRODUCTS LTD.**

**ANNUAL RECLAMATION REPORT**

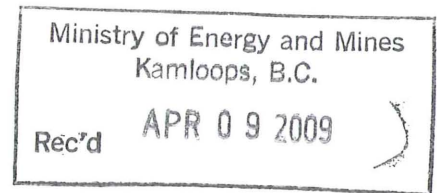
**For Year 2008**

**RED LAKE QUARRY**

**Red Lake, West, North West and Bepple Pits**

**MINE PERMIT Q-15-006**

**MINING LEASE NO. 31088 & D.L. 6385**



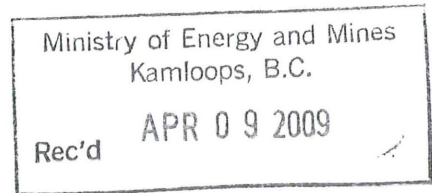
E. W. Beresford, P.Eng.  
Mining Consultant

March 25, 2009



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1. Introduction
2. Location
3. Regional Geology
4. Red Lake Stratigraphy
5. Reserves
6. Mining and Production
7. Reclamation
8. Reclamation Liability Cost Estimates
9. Acid Rock Drainage Potential



### List of Drawings

- Location Map Scale 1/1,000,000
- Mineral Tenure Lease No. 310888, Scale 1/2,000
- Regional Geology – Scale 1/50,000
- Min. 1 Existing workings – Red Lake and West Pits, Scale 1/2,000
- Min. 2 Sections through Red Lake, West, North West, Bepple Pits  
Scale 1/500 Vertical and 1/2000 Horizontal

### Appendices

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### List of Tables

Table 1 – Summary of Disturbed and Reclaimed Areas  
Table 4 – Five Year projection of Anticipated Mining and Reclamation

## **1. Introduction**

This report details mining and reclamation activities carried out at the Red Lake Quarry to December 31, 2008 and a forecast of estimated completion dates and reclamation cost estimates. This mine is operated under permit Q-15-006 issued to Western Industrial Clay Products Ltd., (WICPL) in 1994 with subsequent amendments in 1996, 2001 and 2003. Western Industrial Clay Products Ltd., is a division of Absorbent Products Ltd.

A 20 year Mining lease No. 310888 was granted to WICPL on November 30, 1992 which expires in 2012. Mining Lease No. 310888 was extended to include the Bepple property and now comprises a total of 60 hectares (150 acres) divided into four mining areas, namely; Red Lake, West, North West and Bepple pits. Clay was excavated from the West, North West and Bepple pits during 2008. Reclamation work including backfilling and grading of mined out areas and seeding to grass has been continued in 2008 in the Red Lake and West pit areas.

Site visits were made to the property on April 17, and September 29, 2008 and measurements taken by GPS survey and plans up-dated to December 31, 2008. Photos were taken of the mining reclamation progress and included in the report. In 2006, WICPL purchased the 44.0 hectares of Crown land within Mining lease No. 310888.

## **2. Location**

The Red Lake quarry is 40 km north west of Kamloops, at an elevation of 1,300 metres. The first 8 km of the road is paved with the remaining 32 km a publically maintained gravel road. See Location Map.

WICPL have their processing, bagging plant, distribution warehouse and office at Kamloops, and operate year round. The mining and trucking of the raw material to the Kamloops Plant is of a seasonal nature to avoid winter conditions and usually operates about 7 to 8 months of the year.

## **3. Regional Geology**

The diatomaceous earth (Fuller's earth) deposit near Red Lake lies in the Miocene fluvial and lacustrine sediments near the base of the Deadman River Formation. Both the capping olivine basalt flows of the Chasm Formation and the underlying sediments are part of the Chilcotin Group. The sediments mainly fill a regionally north to northwesterly flowing drainage system that was buried by basalt flows which



spread across the upland topography of central British Columbia. The Miocene sediments and volcanics lie on a basement composed of Eocene basalt/andesite flows of the Kamloops Group, or conglomerate and sandstone of the Jurassic Ashcroft Formation, or basic meta-volcanic rocks of the Upper Triassic Nicola Group.

#### **4. Red Lake Quarry Stratigraphy**

The diatomaceous earth reserves have been proven by extensive auger drilling and excavator test pits over the whole of the lease area. The basalt cap is only present in the north part of the North West and the Bepple property, and has been exposed in the mining area in the south east part of the Bepple pit.

The diatomaceous earth deposit is divided into Upper and Lower Clay and separated by a carbonaceous shale/lignite seam of approximately 1.0 to 1.5 metres in thickness known as Leonardite. A basal Leonardite seam is also present in parts of the quarry. The Leonardite seam is rich in humic and fulvic acids and is mined separately for future use as a soil conditioner, and peat enhancement. The Upper Clay is between 4.0 to 6.0 metres in thickness and found in the Red Lake pit and Bepple pit and the Lower clay is between 3.0 to 6.0 metres and present through the lease. The Upper and Lower clays have different specific gravities varying from 0.59g/cc to 0.51g/cc. The company is currently blending both the clays to produce a variety of product specifications to meet customer requirements.

The soil and overburden layers over the area vary from 1.5 to 3.0 metres in thickness, and is excavated and used as backfill and soil for final pit reclamation. Andesite forms the base of the diatomaceous earth sediments.

#### **5. Reserves**

Estimated remaining in situ reserves in the West Pit and Red Lake Pits at December 31, 2008 are Lower Clay 40,000 cu.metres, Upper Clay 10,000 cu.metres and Leonardite 35,000 cu.metres. In the North West pit there are estimated recoverable clay reserves of 200,000 cu.metres of Lower Clay and 80,000 cu.metres of Leonardite. In the Bepple pit there are estimated recoverable clay reserves of 215,000 cu.metres of Upper Clay and Lower Clay 470,000 cu.metres and 292,000 cu.metres of Leonardite. Approximately 10% to 20% of the clay resource is reduced by natural outwash of the clay or contaminated during mining excavations. The contaminated clay material is stockpiled as overburden and used for reclamation of the site.

## **6. Mining and Production**

As the deposit is fairly flat lying the clay and overburden is removed by two G.M.Terex T.S. 18 scraper machines, two Cat D-8 bulldozers, Excavator and Loaders. The average mining depth to final excavation of the clay reserves through out the quarry is between 6 to 10 metres. Stockpile areas are created and separated on site to prevent contamination of the varying products, before trucking to the Kamloops plant. Leonardite is stockpiled on site and used for reclamation when blended with stockpiled soil.

Drawings Min.1/Min.2Recl.1 show the up-dated mining and reclamation progress at December 31, 2008.

Buildings on site comprise an office/First Aid/lunch room trailer and a parts storage trailer.

During year 2008 some 28,000 cu.metres of Upper Clay and 25,000 cu.metres of Lower Clay were mined. Total production from the Red Lake quarry was 53,000 cu.metres which was processed through the Plant. A stockpile of about 10,000 cu.metres of clay is maintained between the minesite and the plant for access during the winter shutdown at the quarry. Stockpiled clay on site is approximately 65,000 cu.metres.

In year 2009 mine development will continue as planned with an expected total clay production of between 50,000 to 55,000 cu.metres. During 2009 a combination of Upper Clay and Lower Clay will be mined in the West Pit, North West Pit and the Bepple Pit.

In year 2009 it is expected that the remaining Lower Clay and Leonardite will be extracted in the Red Lake and West pits and the majority of backfilling completed ready for final grading and seeding to both pit areas in 2009. The in-pit road along the north boundary of the Red Lake pit has been relocated to allow mining of the underlying clay and provide access to the Bepple Pit. The new temporary road to the south of the Red Lake pit will provide access to the North West pit and West pit.

WICPL produces a wide variety of absorbent granule products from the diatomaceous earth for the use as cat litter, animal barn litter, oil and chemical spills.

## **7. Reclamation**

Reclamation in 2008 consisted of removing soil and overburden from the Bepple pit and placing this material directly into the mined out sections of the West Pit. Some 12,000 cu.metres of material from the Bepple Pit was placed as backfill for



reclamation. An additional 50,000 cu.metres of overburden, Leonardite and soil was placed onto the mined out area in the West Pit and Red Lake pit from existing stockpiles.

Table 1 shows the disturbed and reclaimed areas to December 31, 2008.

Table 4 shows the five year projection of anticipated mining and reclamation.

The Bepple and North West pits are now being developed as reclamation in the two original pits are substantially completed except for in-situ clay remnants and stockpiled soil and product clay.

At December 31, 2008 the amount of material in stockpile and available for backfill is estimated at 20,000 cu.metres. Waste material generated from cleaning off the clay and operations and is not taken to the overburden stockpile.

Site photographs taken on April 17, and September 29, 2008 are included in this report.

The plant species used in the reclamation program is a Foresland Mix purchased from a Kamloops seed company and is comprised of the following species:

Orchard Grass 25%, White Clover 5%, Creeping Red Fescue 15%, Crested Wheatgrass 15%, Timothy 10%, Single Cut Red Clover 5%, Annual Ryegrass 25%.

The seed mix is spread at the rate of 45 lbs – 62.5 lbs per hectare over the reclaimed land on a covering of top soil and Leonardite. To date no fertilizer has been applied with the Forestland Mix and results show a strong vegetation growth over the past six years since seeding began.

Absorbent Products Ltd., intend to restore the land to grassland pasture.

All final reclamation slope angles will be less than 2 h:1v (27 deg.) with a maximum slope length of 50 metres. Over 90% of the site will be reclaimed to a final slope angle of between 5 to 10 degrees and graded to the natural drainage gully at the west boundary of the Red Lake Quarry.

## **8. Reclamation Liability Cost Estimates**

Active progressive reclamation of disturbed ground in the Red Lake and West Pits has only been possible since 2001 because of the requirement to extract both clay layers and Leonardite so as to maximize resource extraction without sterilizing any of the resources. Sequenced mining and reclamation development plans were approved under Permit Q-15-006 in October 2000 and have been followed.

WICPL utilize their own earth moving equipment to backfill and grade the mined out areas. The majority of the area requiring backfill and grading is included in the clay production costs if the overburden is being moved as part of the mining process. When overburden is moved separately and stockpiled or pushed into the mined out areas from existing stockpiles then this cost is separated out as direct reclamation cost. WICPL have allowed \$8,500.00 per ha for direct reclamation costs at the quarry workings based on actual costs over the past few years. .

In the North West and Bepple pits clay removal pits clay removal will continue through 2009. Based on WICPL reclamation cost figures and the amount of unreclaimed area the current reclamation security bonding of \$70,000.00 is adequate to cover reclamation liability for the total quarry operation.

Overburden including waste clay not suitable for product blending and soil will be removed directly from the North West and Bepple pits and placed on the West and Red Lake pits for backfill and final reclamation. Total disturbed area at December 31, 2008 is 9.50 ha, which includes roads, stockpiles and mining areas.

#### 9. Acid Rock Draining Potential

The diatomaceous earth (Fuller's Earth) being worked by WICPL is non-acid generating with a ph of between 6 to 7. Surface water flow is directed towards a natural vegetated gully on the west side of the property and there has been no leaching or other water quality issues on the Red Lake property.

A small settlement pond was constructed in 2005 at the north west corner of the West Pit to collect run-off drainage from the North West and West Pits. This water is allowed to settle in the pond and clean water filtrates into the natural gully along the west boundary, and the pond is still operating efficiently.

  
Licence # 16649

Eric W. Beresford, P.Eng.  
Mining Consultant

March 25, 2009



TABLE 1

## SUMMARY OF AREAS DISTURBED AND RECLAIMED TO DECEMBER 31, 2008

COMPANY: WESTERN <sup>ABSORBENT PRODUCTS LTD.</sup> INDUSTRIAL CLAY PRODUCTS LTD. PERMIT NO. Q-15-006

DISTURBANCE	MINING		RECLAMATION								LAND USE OBJECTIVE**
	AREA DISTURBED (ha)		AREA RECONTOURED (ha)		AREA SEEDED/PLANTED (ha)		AREA FERTILIZED * (ha)		AREA REVEGETATED* (ha)		
	2008	TOTAL***	2008	TOTAL***	2008	TOTAL***	2008	TOTAL***	2008	TOTAL***	
WASTE DUMPS	-	1.50	0.40	4.00	-	4.00	-	-	1.00	2.00	GRAZING
TAILINGS PONDS	-	-								-	
PLANT SITE	-	0.10	-	-	-	-	-	-	-	-	GRAZING
ROADS	-	1.40	-	1.40	-	-	-	-	-	-	GRAZING
ADMINISTRATION	-	-								-	
PIT	0.60	5.40	1.30	13.50	1.30	13.50	-	-	3.00	8.00	GRAZING
STOCKPILES	0.30	1.10	-	-		-	-	-	-	-	GRAZING
LINEAR	-	-		-						-	
OTHER	-	-								-	
TOTAL	0.90	9.50	1.70	18.90	1.30	17.50	-	-	4.00	10.00	GRAZING

EXEMPT ie pit high walls	-	ha
-----------------------------	---	----

\* In order for an area to be recorded as "revegetated" it must have supported vegetation that will lead to the designated land use objective for at least one year.

\*\* Specify land use. Options include: forestry, grazing, wildlife habitat, recreation, agricultural, industrial, residential, and other.

\*\*\* Total up to December 31, 2008.

\* LEONARDITE USED AS FERTILIZER- MIXED WITH SOIL

TABLE 4

**FIVE-YEAR PROJECTION OF ANTICIPATED MINING AND RECLAMATION**  
**ABSORBENT PRODUCTS LTD**

**COMPANY:** WESTERN INDUSTRIAL CLAY PRODUCTS LTD **PERMIT NO.:** Q-15-006

	MINING						RECLAMATION																	
	AREA DISTURBED (ha)						AREA RECONTOURED (ha)						AREA SEEDED/PLANTED (ha)						★ AREA FERTILIZED (ha)					
YEAR	2009	10	11	12	13	Total	2009	10	11	12	13	Total	2009	10	11	12	13	Total	2009	10	11	12	13	Total
WASTE DUMPS	-	1.0	0.5	-	-	1.5	1.0	0.5	0.5	-	-	2.0	1.0	0.5	0.5	-	-	2.0						-
TAILINGS PONDS	-																							
PLANT SITE	-					-						-						-						-
ROADS	-	-	1.0	-	-	1.0	-	0.4	-	-	-	0.4	-	0.4				0.4						-
ADMINISTRATION																								
PIT AREAS	1.0	1.0	0.5	1.0	0.5	4.0	1.0	1.0	0.5	1.0	0.5	4.0	1.0	1.0	0.5	1.0	0.5	4.0						-
STOCKPILES	0.2	-	0.2	-	-	0.4	0.2	-	0.2	-	-	0.4	0.2	-	0.2	-	-	0.4						-
LINEAR (pipelines, powerlines, etc.)																								
OTHER																								
EXEMPT (ie Pit high walls)																								
TOTAL	1.2	2.0	2.2	1.0	0.5	6.9	2.2	1.9	1.2	1.0	0.5	6.8	2.2	1.9	1.2	1.0	0.5	6.8						-

\* LEONARDITE USED AS FERTILIZER - MIXED WITH SOIL COVER





GRADING WEST PIT - SOIL/OVERBURDEN  
STOCKPILE BEING REMOVED - PLACED AS BACKFILL

April 17/2008



LEONARDITE/SOIL TOP DRESSING - RED L EGM-2013-00020  
Page 75

April 17/2008





ESTABLISHED GRASSLAND - WEST PIT

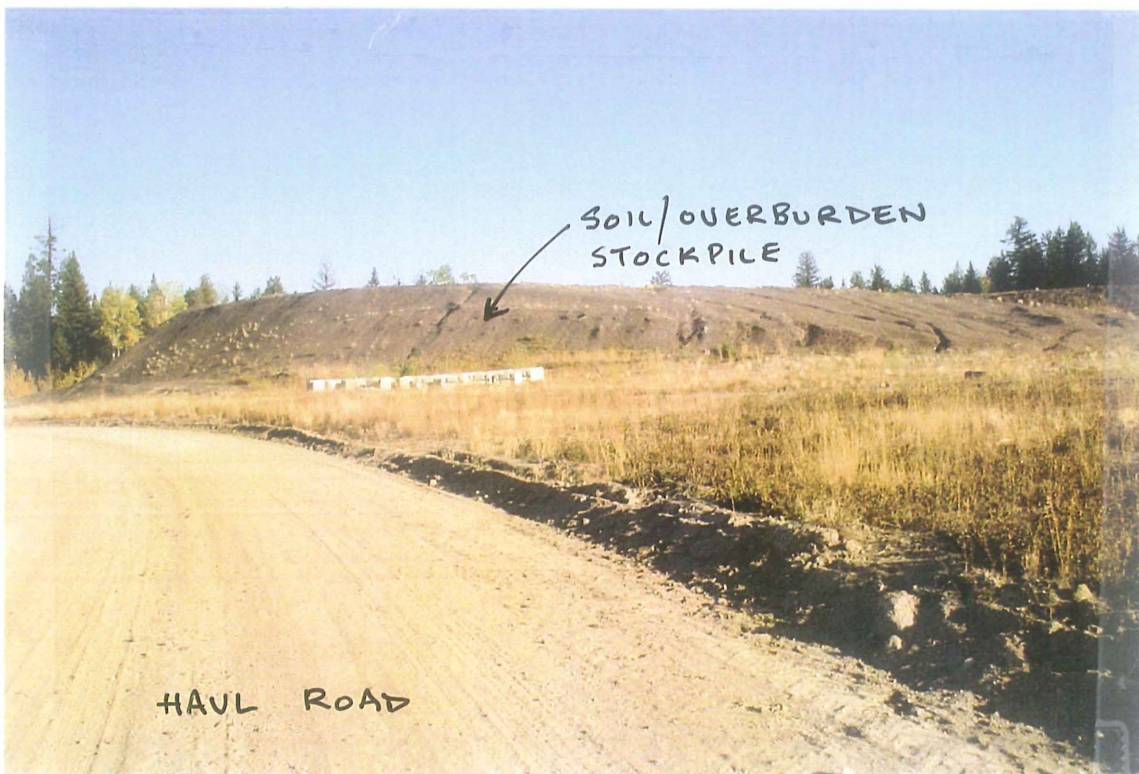


ESTABLISHED GRASSLAND - WEST PIT





ESTABLISHED GRASSED AREA RED LAKE WEST PIT



REMAINING SOIL/OB STOCKPILE - CENTRAL RED LAKE PIT  
FUTURE PLACEMENT IN BEPPLE PIT





BACKFILLING / SOIL PLACEMENT - SOUTH NORTH WEST PIT



PRODUCT STOCKPILES - RED LAKE EAST



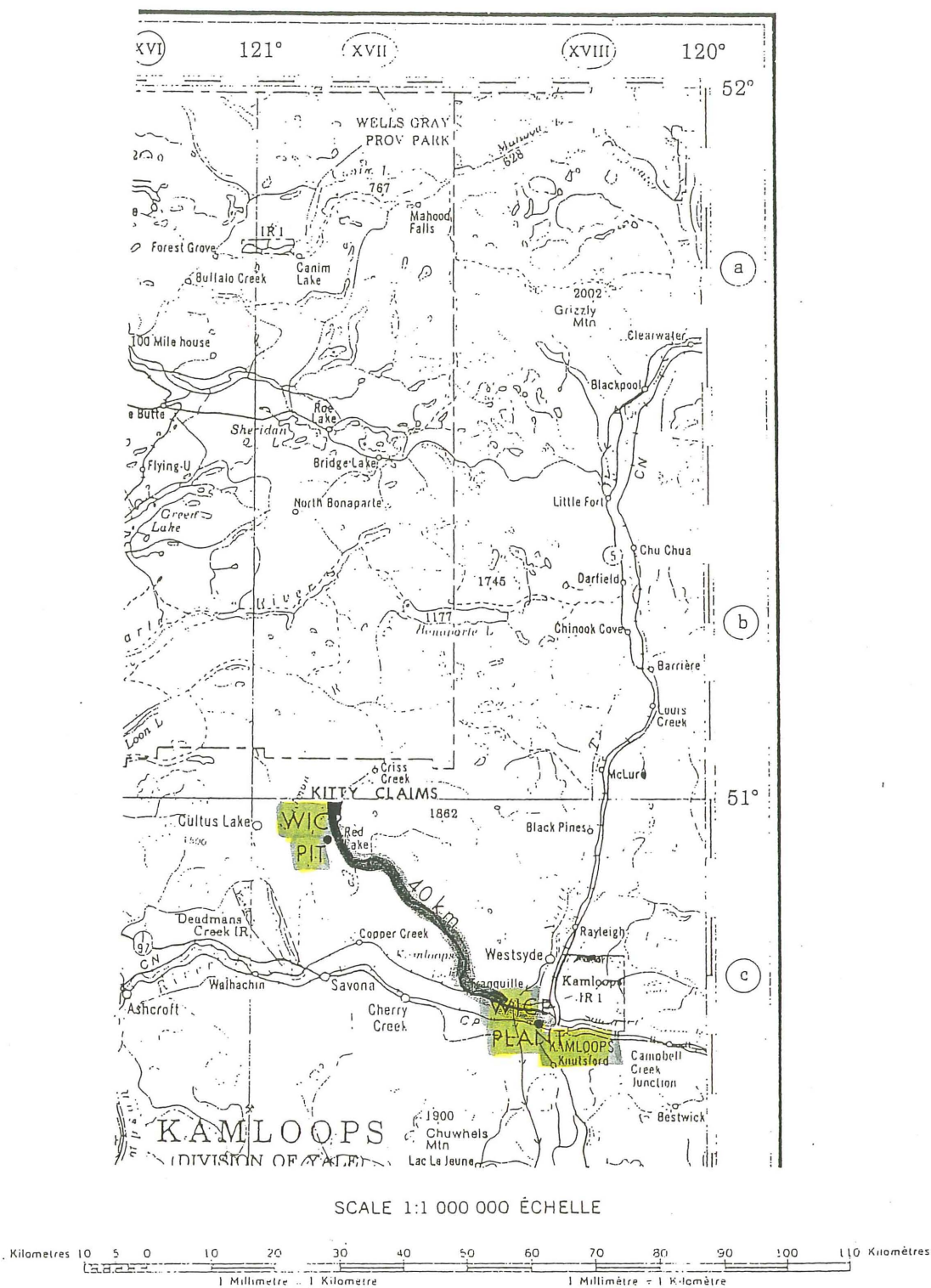


Figure 2: Regional map showing the locations of KITTY 21 and 23-30 claims, Western Industrial Clay Products Red Lake Open Pit and plant in Kamloops separated by 40 km of haul road.

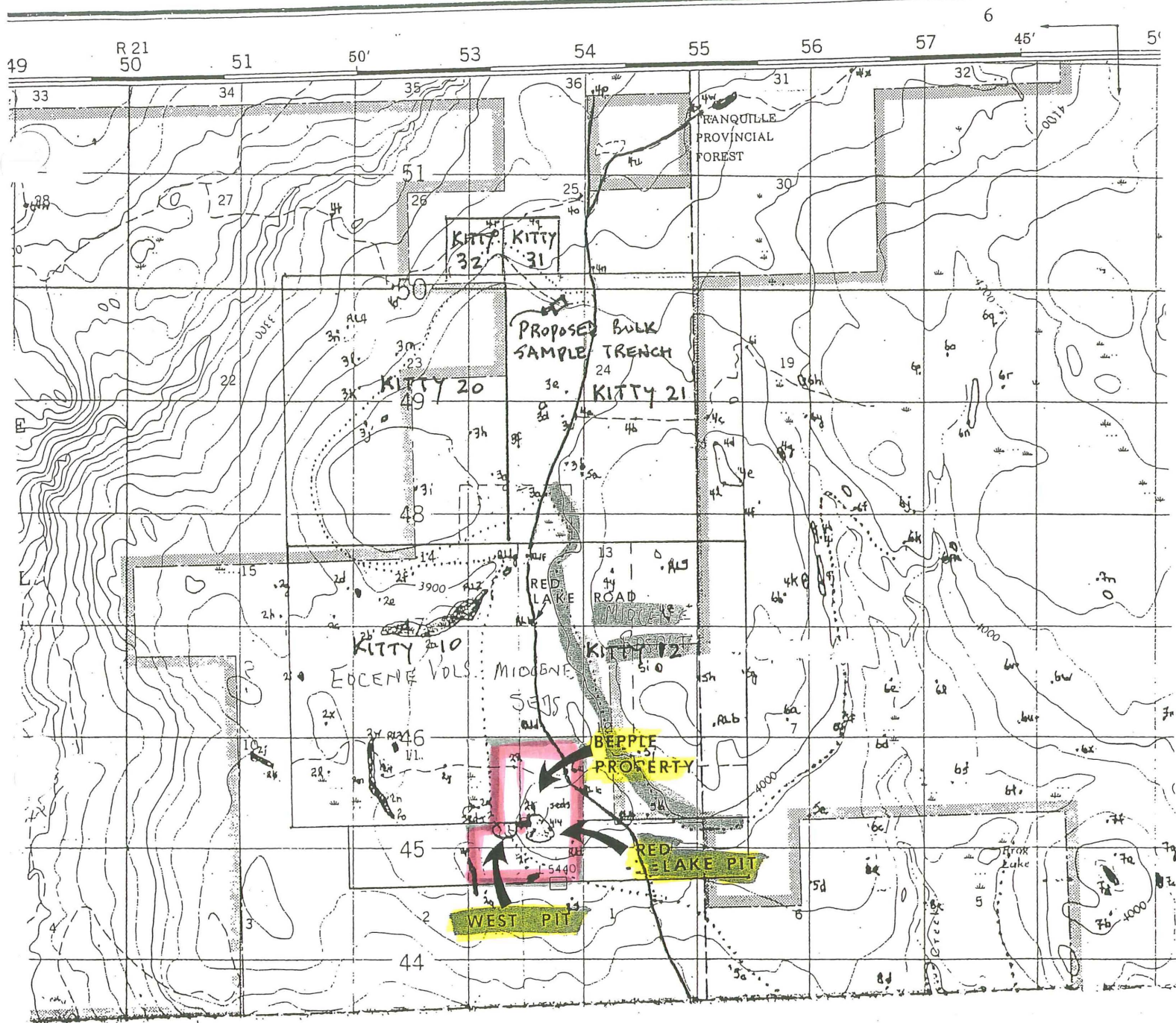
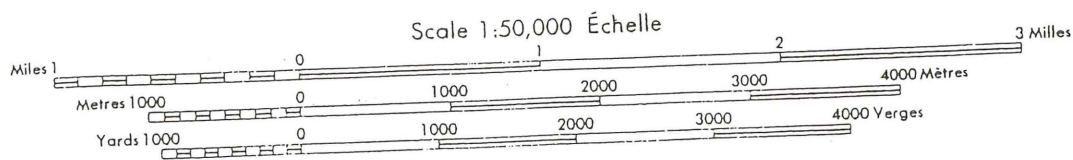
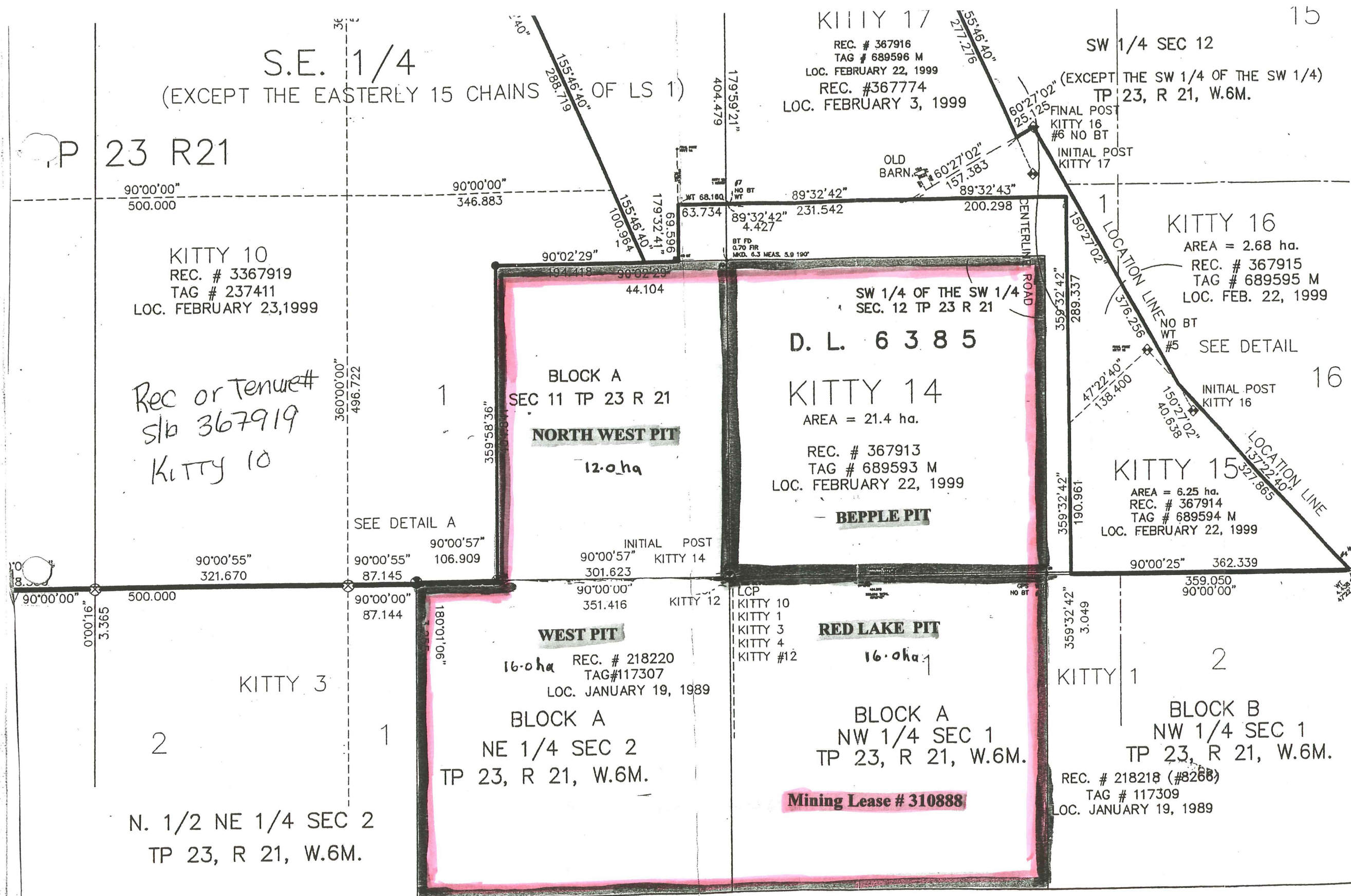


Figure 3: Regional geological map of the KITTY claims (outlined in yellow) which are underlain by a basement of Eocene volcanic rocks and overlain by diatomaceous Miocene sediments (MIOCENE SEDS) topped by basalt flows (MIOCENE BASALT).



NTS-MAP SHEET 92-1/15





MINERAL TENURE- MINING LEASE #310888  
SCALE: 1/5,000

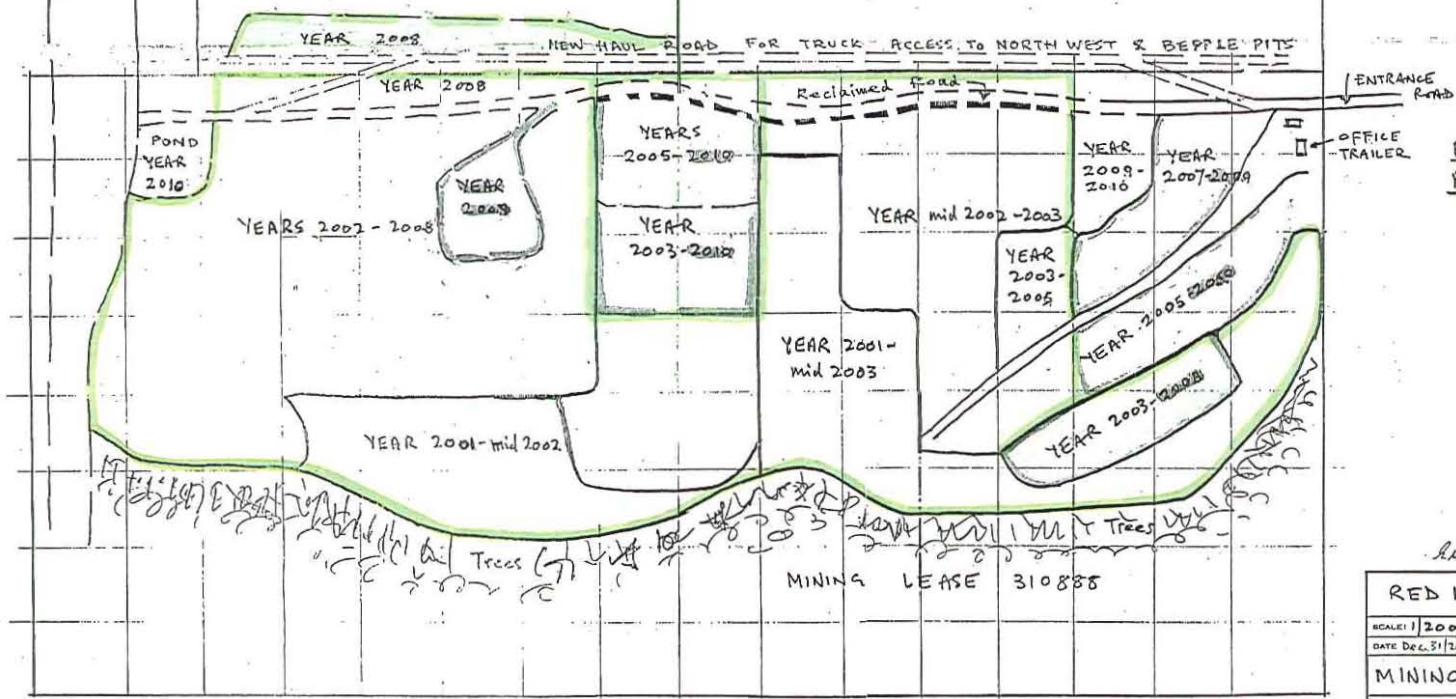
Mine Permit Q - 15 - 006

NORTH WEST PIT

BEPPE PIT

CLAY EXTRACTION 2005-2015

CLAY EXTRACTION YEARS 2005-2020



RED LAKE & WEST PITS  
RECLAMATION SEQUENCE

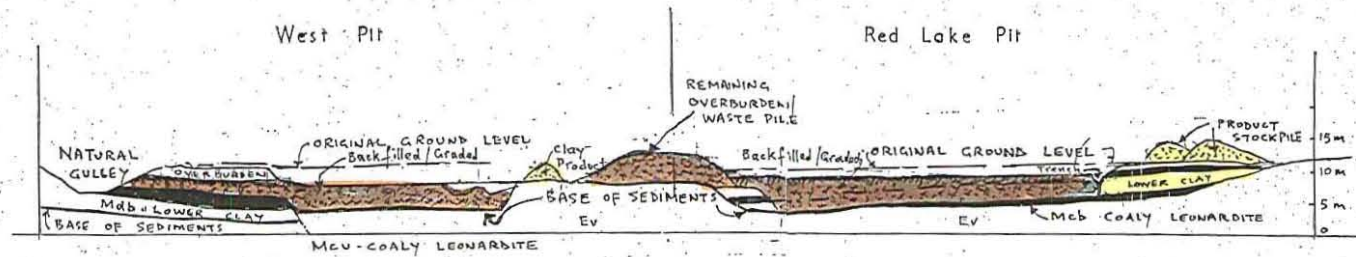
Ministry of Energy and Mines  
Kamloops, B.C.  
Rec'd APR 09 2009

L.W. Benford P.Eng.

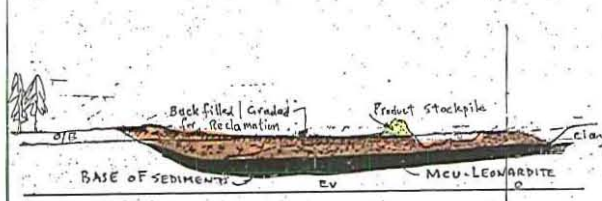
RED LAKE & WEST PITS

SCALE: 1" = 200'	APPROVED BY: WESTERN INDUSTRIAL CLAY PRODUCTS	DRAWN BY: ELB REVISED DEC 31/08
DATE DEC 31/2008	MINING SEQUENCE	BGM 2013-00020
RECLAMATION	Page 82	DRAWING NUMBER REF: 1.1

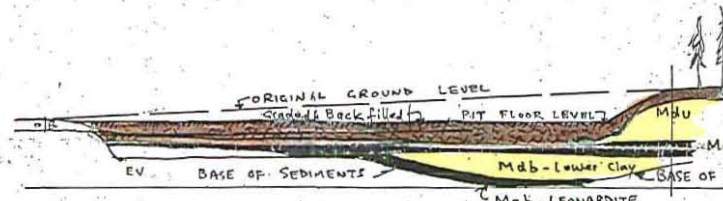




LONGITUDINAL SECTION 100 S

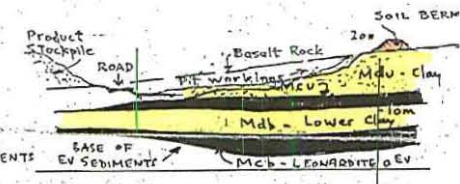


SECTION 150 W - WEST PIT

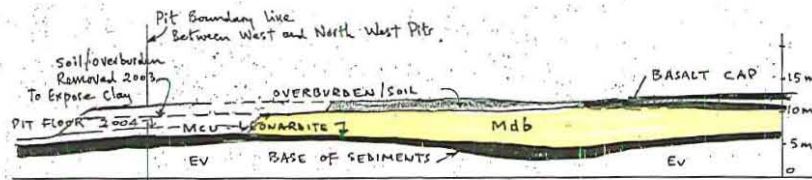


SECTION 50 E

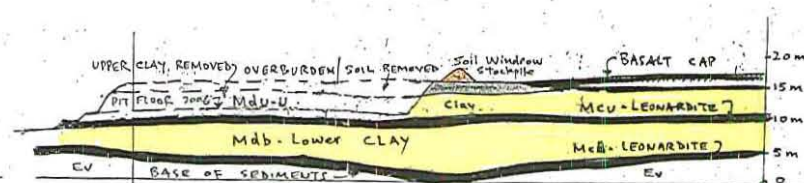
RED LAKE PIT



SECTION 350 E



SECTION 150 W - NORTH WEST PIT



SECTION 100 E - BEPPLE PIT

Ministry of Energy and Mines  
Kamloops, B.C.  
Rec'd APR 09 2009

G.W. Barclay P.Eng

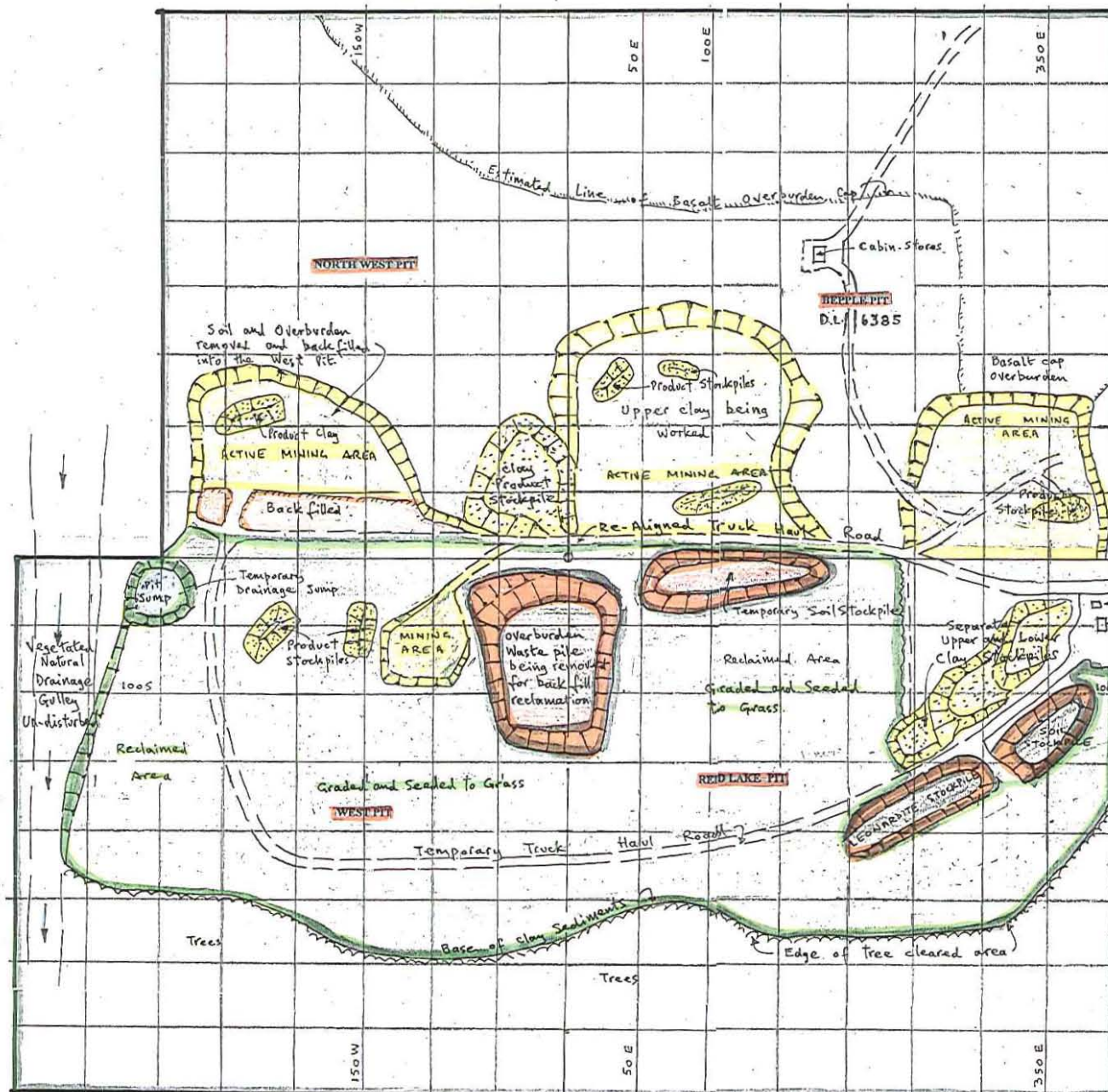
PLAN N° MIN.2

WESTERN INDUSTRIAL CLAY PRODUCTS LTD

SCALE: 1/2000 H  
1/500 VERT

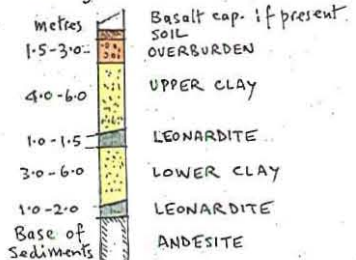
E.M. BARCLAY P.Eng  
Dec 31/2008

SECTIONS THROUGH RED LAKE  
Page 83



# STRATIGRAPHY OF MIOCENE DEPOSITS

Average thickness range



TOTAL BACKFILL & RECLAMATION AREA

Gated Entrance  
ENTRANCE ROAD  
Store  
Office Trailer

Red Lake Quarry, West Pit  
North West & Bepple Pits

Reclamation Progress 2008

- 1) Backfilling and topsoil placement and grading continued in the Red Lake and West Pit areas.
- 2) Seeding to grass continued in the disturbed areas after grading.
- 3) Pit water drainage directed into a temporary sump in the north west corner of the West Pit.
- 4) Upper and Lower Clays blended to produce a run-of-mine product for the Kamloops Plant.

Mining Development 2008

- 1) Soil and overburden removal continued in the Bepple Pit in the south east corner.
- 2) Temporary stockpiles formed on the mined out and graded areas of the Red Lake Pit.
- 3) Clay extraction continued mainly in the Bepple Pit and North West Pit with remnants from the West Pit.
- 4) The main truck haul road has been re-aligned to allow the underlying clay to be mined.

A temporary haul road is maintained to access the West Pit area.

Ministry of Energy  
Kamloops, BC  
Rec'd APR 09

G.W. Bepple P. Eng.

RED LAKE QUARRY, WEST PIT,  
NORTH WEST & BEPPLE PITS

SCALE 1/2,000  
DATE Dec. 31/2008

Mining Lease # 310888

Plan of Existing Workings & Reclamation Progress

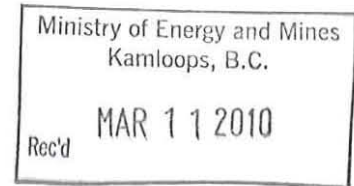
EGM-2013-00026  
Page 84



Eric W. Beresford, P.Eng.,  
Mining Consultant  
P.O. Box 1529  
Carstairs, Alberta T0M 0N0  
(403) 337-4031 FAX 337-2789  
Email: [ericwberesford@shaw.ca](mailto:ericwberesford@shaw.ca)

March 8, 2010

Diane Howe, M.A.Sc. P.Geo.,  
Deputy Chief Inspector of Mines  
Ministry of Energy and Mines  
P. O. Box 9320, Stn Prov. Govt  
Seventh Floor, 1675 Douglas Street  
Victoria, BC V8W 9N3



Dear Diane Howe:

**Mine Permit Q-15-006, Annual Reclamation Report  
Absorbent Products Ltd./Western Industrial Clay Products Ltd., Kamloops**

On behalf of Absorbent Products Ltd., Kamloops, I enclose the year 2009 Annual Reclamation Report for the Red Lake Quarry. Mining development of the clay extraction and reclamation progress are shown for the Red Lake, West, North West Pits and Beppele pit in Mining Lease No.310888 and DL 6385.

Should you have any questions of a technical nature regarding the report, please direct them to the undersigned as I act as consultant to Absorbent Products Ltd.

Yours truly,

A handwritten signature of Eric W. Beresford in black ink, written over a circular official seal.

Eric W. Beresford, P.Eng.  
Mining Engineer/Consultant

Attachment:

cc: Joe Seguin, Regional Director, Kamloops M.E.M. ✓  
Peter Aylen, C.A., M.B.A., President, Western Industrial Clay Products Ltd.  
Dave Bowers, Mine Manager

**WESTERN INDUSTRIAL CLAY PRODUCTS LTD.**

**a division of ABSORBENT PRODUCTS LTD.**

**ANNUAL RECLAMATION REPORT**

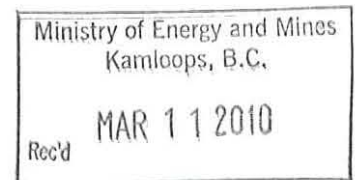
**for YEAR 2009**

**RED LAKE QUARRY**

**(Red Lake, West, North West and Bepple Pits**

**MINE PERMIT Q-15-006**

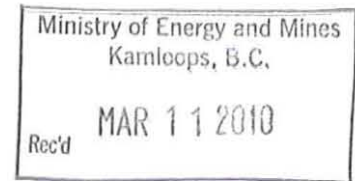
**MINING LEASE No. 31088 & D.L. 6385**



E. W. Beresford, P.Eng.  
Mining Engineer/Consultant

March 05, 2010





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2. Location
3. Regional Geology
4. Red Lake Stratigraphy
5. Reserves
6. Mining and Production
7. Reclamation
8. Reclamation Liability Cost Estimates
9. Acid Rock Drainage Potential

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- Location Map Scale 1/1,000,000
- Mineral Tenure Lease No. 310888, Scale 1/5,000
- Regional Geology - Scale 1/50,000
- Min. 1 Existing workings - Red Lake and West Pits, Scale 1/ 2,000
- Min. 2 Sections through Red Lake, West, North West, Bepple Pits  
Scale 1/500 Vertical and 1/2000 Horizontal.
- Recl. 1 Mining Sequence Plan and Reclamation Progress. Scale 1/2000
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Appendix. 1-Site photos, February 18, 2010

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Table 1 - Summary of Disturbed and Reclaimed Area

Table 2 - Summary of Reclamation Backfill Placement

## **1. Introduction**

This report details mining and reclamation activities carried out at the Red Lake Quarry to December 31, 2009 and a forecast of estimated completion dates and reclamation cost estimates for each separate pit area. The mine is operated under Permit Q-15-006 issued to Western Industrial Clay Products Ltd., ( WICPL) in 1994 with subsequent amendments in 1996, 2001 and 2003. Western Industrial Clay Products Ltd., is a division of Absorbent Products Ltd.

A 20 year Mining lease No. 310888 was granted to WICPL on November 30, 1992 which expires in 2012. Mining Lease No. 310888 was extended to include the Bepple property and now comprises a total of 60 hectares (150 acres) divided into four mining areas, namely Red Lake, West, North West and Bepple pits. In early 2006, WICPL purchased the 44.0 hectares of Crown land within Mining lease No.310888. Clay was excavated from the West, North West and Bepple pits during 2009. Reclamation work including backfilling and grading of mined out areas and seeding to grass has been continued in 2009 in the Red Lake and West pit areas.

A site visit was made to the property on February 18, 2010 and measured by GPS survey and plans up-dated to December 31, 2009. Photos were taken of the mining and reclamation progress to date, and included in the report.

## **2. Location**

The Red Lake quarry is 40 km north west of Kamloops, at an elevation of 1,300 metres. The first 8 km of the road is paved with the remaining 32 km a publically maintained gravel road. See Location Map.

WICPL have their processing, bagging plant, distribution warehouse and office at Kamloops, and operate year round. The mining and trucking of the raw material to the Kamloops Plant is of a seasonal nature to avoid winter conditions and usually operates about 7 to 8 months of the year.

## **3. Regional Geology**

The diatomaceous earth (Fuller's earth) deposit near Red Lake lies in the Miocene fluviatile and lacustrine sediments near the base of the Deadman River Formation. Both the capping olivine basalt flows of the Chasm Formation and the underlying sediments are part of the Chilcotin Group. The sediments mainly fill a regionally north to northwesterly flowing drainage system that was buried by basalt flows which spread



across the upland topography of central British Columbia. The Miocene sediments and volcanics lie on a basement composed of Eocene basalt/andesite flows of the Kamloops Group, or conglomerate and sandstone of the Jurassic Ashcroft Formation, or basic meta-volcanic rocks of the Upper Triassic Nicola Group.

#### **4. Red Lake Quarry Stratigraphy**

The diatomaceous earth reserves have been proven by extensive auger drilling and excavator test pits over the whole of the lease area. The basalt cap is only present in the north part of the North West and the Bepple property, and has been exposed in an excavator trench in the south part of the Bepple pit..

The diatomaceous earth deposit is divided into Upper and Lower Clay and separated by a carbonaceous shale/lignite seam of approximately 1.0 to 1.5 metres in thickness known as Leonardite. A basal Leonardite seam is also present in parts of the quarry. The Leonardite seam is rich in humic and fulvic acids and is mined separately for future use as a soil conditioner, and peat enhancement. The Upper Clay is between 4.0 to 6.0 metres in thickness and found in the Red Lake pit only and the Lower clay is between 3.0 to 6.0 metres and present throughout the lease. The Upper and Lower clays have different specific gravities varying from 0.59g/cc to 0.51/cc, the plant was originally designed around mining only the Upper Clay layers at a 0.59g/cc. The company is currently blending the upper and lower clays to produce a variety of product specifications to meet customer requirements.

The soil and overburden layers over the area vary from 1.5 to 3.0 metres in thickness, and is excavated and used as backfill and soil for final pit reclamation. Andesite forms the base of the diatomaceous earth sediments.

#### **5. Reserves**

Estimated remaining reserves in the Red Lake Pit at December 31, 2009 are Lower Clay 31,000 cu.metres, Upper Clay 10,000 cu.metres and Leonardite 35,000 cu.metres. In the North West Pit there are estimated recoverable clay reserves of 195,000 cu.metres of Upper Clay, and 80,000 cu.metres of Leonardite. In the Bepple pit there are estimated recoverable clay reserves of 210,000 cu.metres of Upper Clay and Lower Clay 468,000 cu.metres and 285,000 cu.metres of Leonardite. Approximately 10% to 20% of the clay resource is reduced by natural outwash of the clay or contaminated during mining excavations. The contaminated clay material is stockpiled as overburden and used for reclamation of the site.

## **6. Mining and Production**

As the deposit is flat lying the clay and overburden is removed by two T.S. 18 scraper machines, Cat D-8 bulldozer, Excavator and Loader. The average mining depth to final excavation of clay reserves throughout the quarry is between 6 to 10 metres. Stockpile areas are created and separated on site to prevent contamination of the varying products, before trucking to the Kamloops plant. Leonardite is stockpiled on site for future sales or used in reclamation of the site when blended with soil and overburden.

Drawings Min.1/Min.2Recl.1 show the up-dated mining and reclamation progress at December 31, 2009.

During year 2009 some 30,000 cu.metres of Upper Clay and 20,000 cu.metres of Lower Clay were mined. Production from the Red Lake quarry was 50,000 cu.metres. A stockpile of about 10,000 cu.metres of clay is maintained between the minesite and the plant for access during the winter shutdown at the quarry.

In year 2010 mine development will continue as planned with an expected total clay production of between 50,000 to 55,000 cu.metres. During 2010 both Upper Clay and Lower Clay will be mined in the North West Pit and the Bepple Pit together with Leonardite as it occurs in a mineable thickness.

Stockpiled product clay on site is calculated at 73,000 tonnes. WICPL produces a wide variety of absorbent granule products from the diatomaceous earth for the use as cat litter, animal barn litter, oil and chemical spills.

## **7. Reclamation**

Reclamation in 2009 consisted of removing soil and overburden from the North West Pit and Bepple Pit over an area of 1.0 hectares and placing this material directly into the mined out sections of the West Pit, to backfill to final grade. An additional 23,000 cu.metres was placed in two temporary stockpiles on the Red Lake backfilled area adjacent to the truck haul road.

Table 1 shows the disturbed and reclaimed areas to December 31, 2009.

Table 4 shows the five year projection of anticipated mining and reclamation.

The total backfilled and graded area reclaimed and seeded in the Red Lake and West pits is 18.10 ha, with a further 2.0 ha backfilled but not seeded.



The Bepple and North West pits are now being developed as reclamation in the two original pits are substantially reclaimed and completed except for in-situ clay remaining in the east part of the Red Lake pit.

The seed species used in the reclamation program is a Forestland Mix purchased from a Kamloops seed company and is comprised of the following grasses: Orchard Grass 25%, White Clover 5%, Creeping Red Fescue 15%, Crested Wheatgrass 15%, Timothy 10%, Single Cut Red Clover 5%, Annual Ryegrass 25%.

The seed mix is spread at the rate of 45 lbs - 62.5 lbs per hectare over the reclaimed land on a covering of top soil and Leonardite. To date no fertilizer has been applied with the Forestland Mix and results show a strong vegetation growth over the past six years since seeding began. The vigorous growth is attributed to the high nutrients within the leonardite and mixed with topsoil. Absorbent Products Ltd., intend to restore the land to grassland pasture.

All final reclamation slope angles will be less than 2 h:1v (27 deg.) With a maximum slope length of 50 metres. Over 90% of the site will be reclaimed to a final slope angle of between 5 to 10 degrees and graded to the natural drainage gully at the west boundary of the Red Lake Quarry.

Site photographs taken on February 18, 2010 are included in this report, but due to snow cover further photographs will be taken after spring growth.

## **8. Reclamation Liability Cost Estimates**

Sequenced mining and reclamation development plans were approved under Permit Q-15-006 in October 2000 and have been followed. Progressive reclamation has been carried out since commencement of backfill and grading in 2001.

WICPL utilize their own earth moving equipment to backfill and grade the mined out areas. The majority of the area requiring backfill and grading is included in the clay production costs if the overburden is being moved as part of the mining process. When overburden is moved separately and stockpiled or pushed into the mined out areas from existing stockpiles, then this cost is separated out as a direct reclamation cost. WICPL have allowed \$8,500.00 per ha for direct reclamation costs at the quarry workings based on actual costs over the past few years.

Based on WICPL reclamation cost figures and the amount of un-reclaimed area the current reclamation security bonding of \$70,000.00 is adequate to cover reclamation liability for the total quarry operation.

Overburden including waste clay not suitable for product blending and soil will be removed directly from the North West and Bepple pits and placed on the West and Red Lake pits for backfill and final reclamation. Total disturbed area at December 31, 2009 is 7.30 ha, which includes roads, stockpiles and mining areas.

## **9.0 Acid Rock Drainage Potential**

The diatomaceous earth (Fuller's Earth) being worked by WICPL is non-acid generating with a pH of between 6 to 7. Surface water flow is directed towards a natural vegetated gully on the west side of the property and there has been no leaching or other water quality issues on the Red Lake property.

A small settlement pond was constructed in 2005 at the north west corner of the West Pit to collect pit run-off drainage from the North West and West Pits. This water is allowed to settle in the pond and clean water filtrates into the natural gully along the west boundary.



Eric W. Beresford, P.Eng.  
Mining Engineer/Consultant

March 05, 2010



TABLE 1

## SUMMARY OF AREAS DISTURBED AND RECLAIMED TO DECEMBER 31, 2009

COMPANY: WESTERN INDUSTRIAL CLAY PRODUCTS LTD. a division of  
ABSORBENT PRODUCTS LTD. - KAMLOOPS. PERMIT NO.: Q-15-006

DISTURBANCE	MINING		RECLAMATION								LAND USE OBJECTIVE**
	AREA DISTURBED (ha)		AREA RECONTOURED (ha)		AREA SEEDED/PLANTED (ha)		AREA FERTILIZED (ha)		AREA REVEGETATED* (ha)		
	2009	TOTAL***	2009	TOTAL***	2009	TOTAL***	2009	TOTAL***	2009	TOTAL***	
WASTE DUMPS	-	-	2.7	2.7	-	4.0	-	-	2.0	4.0	GRAZING
TAILINGS PONDS	-										PASTURE
PLANT SITE	-	0.1	-	-	-	-	-	-	-	-	GRAZING
ROADS	-	0.9	0.5	1.9	-	0.6					GRAZING
ADMINISTRATION	-	-	-	-	-	-	-	-	-	-	-
PIT	1.0	5.3	2.0	15.5	1.0	14.5	-	-	3.5	11.5	GRAZING
STOCKPILES	-	1.0	-	-	-	-	-	-	-	-	PASTURE
LINEAR	-	-	-	-	-	-	-	-	-	-	"
OTHER	-	-	-	-	-	-	-	-	-	-	
TOTAL	1.0	7.3	5.2	20.1	1.0	19.1	-	-	5.5	15.5	GRAZING PASTURE

EXEMPT  
e.g., pit high walls

ha

\* In order for an area to be recorded as "revegetated" it must have supported vegetation that will lead to the designated land use objective for at least one year.

\*\* Specify land use. Options include: forestry, grazing, wildlife habitat, recreation, agricultural, industrial, residential, and other.

\*\*\* Total up to December 31, 2009.

\* LEONARDITE USED AS FERTILIZER - MIXED WITH TOP SOIL

TABLE 4

## FIVE-YEAR PROJECTION OF ANTICIPATED MINING AND RECLAMATION

WESTERN INDUSTRIAL CLAY PRODUCTS LTD - a division of

COMPANY: ABSORBENT PRODUCTS LTD - KAMLOOPS. PERMIT NO.: Q-15-006

	MINING						RECLAMATION																	
	AREA DISTURBED (ha)						AREA RECONTOURED (ha)						AREA SEEDED/PLANTED (ha)						* AREA FERTILIZED (ha)					
YEAR	2010	11	12	13	14	Total	2010	11	12	13	14	Total	2010	11	12	13	14	Total	2010	11	12	13	14	Total
WASTE DUMPS	1.0	-	-	-	0.5	1.5	0.5	0.5	0.5	-	0.5	2.0	0.5	0.5	0.5	-	0.5	2.0						-
TAILINGS PONDS	-																							
PLANT SITE	-																							
ROADS	0.3	-	-	-	-	0.3	-	0.3	-	-	-	0.3	-	0.3	-	-	-	0.3						
ADMINISTRATION	-																							
PIT AREAS	1.0	0.5	1.0	0.5	1.0	4.0	1.0	0.5	1.0	0.5	1.0	4.0	1.0	0.5	1.0	0.5	1.0	4.0						
STOCKPILES	0.2	0.3	-	-	-	0.5	0.2	0.3	-	-	-	0.5	0.2	0.3	-	-	-	0.5						
LINEAR (pipelines, powerlines, etc.)	-																							
OTHER	-																							
EXEMPT (e.g., pit high walls)	-																							
TOTAL	2.5	0.8	1.0	0.5	1.5	6.3	1.7	1.6	1.5	0.5	1.5	6.8	1.7	1.6	1.5	0.5	1.5	6.8						

Note: \* LEONARDITE IS USED AS THE FERTILIZER - MIXED WITH TOP SOIL.





RED LAKE PIT - VIEW LOOKING SOUTH  
RECLAIMED AREA



CLAY PRODUCT STOCKPILE & PIT EXCAVATION  
BEPPLE PIT



RECLAIMED AREA - WEST PIT & RED LAKE PIT  
VIEW SOUTH EAST.



NORTH WEST PIT EXCAVATION AREA





RECLAIMED WEST PIT AREA



BEPPLE PIT MINING EXCAVATION

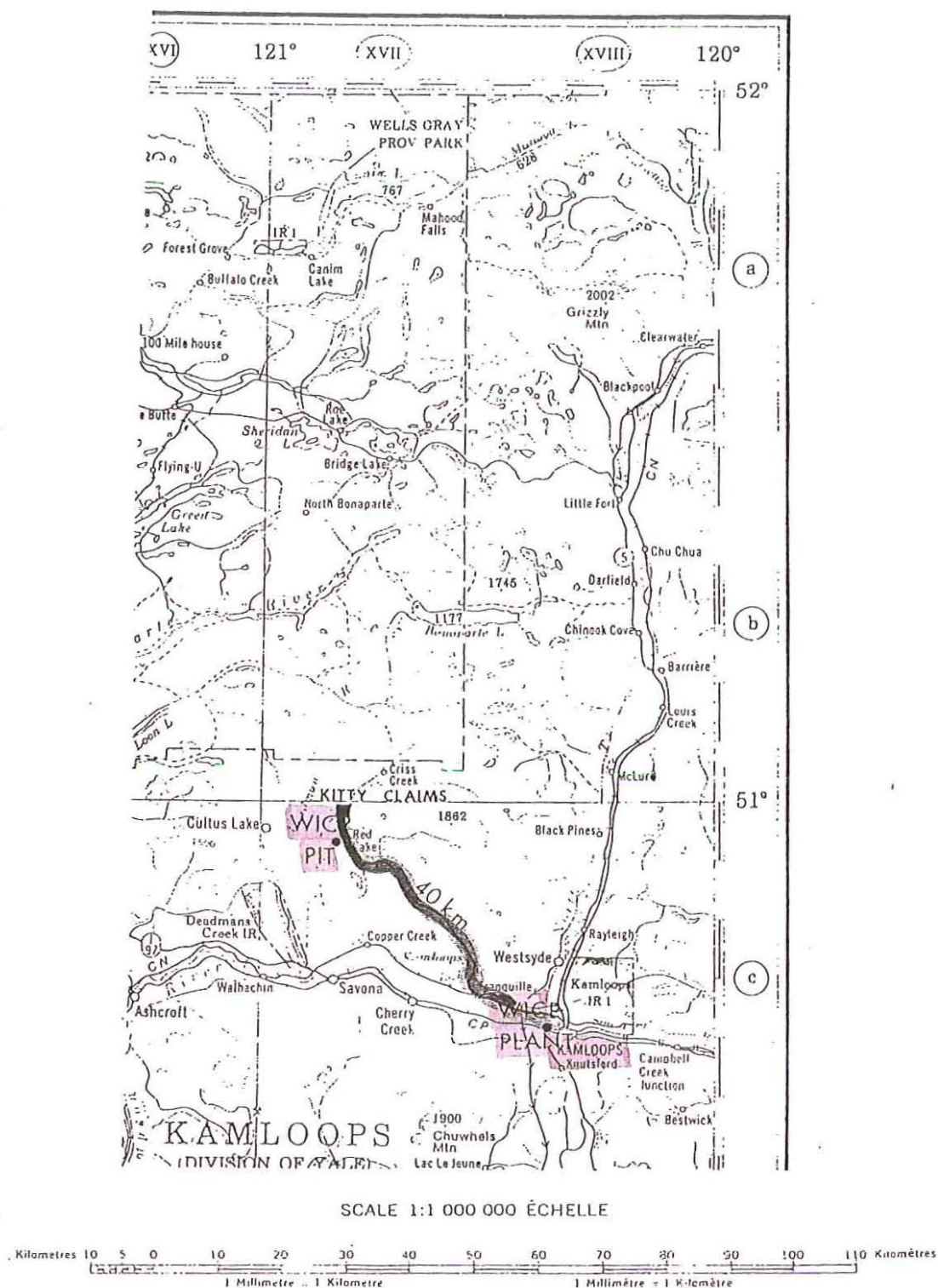


Figure 2: Regional map showing the locations of KITTY 21 and 23-30 claims, Western Industrial Clay Products Red Lake Open Pit and plant in Kamloops separated by 40 km of haul road.



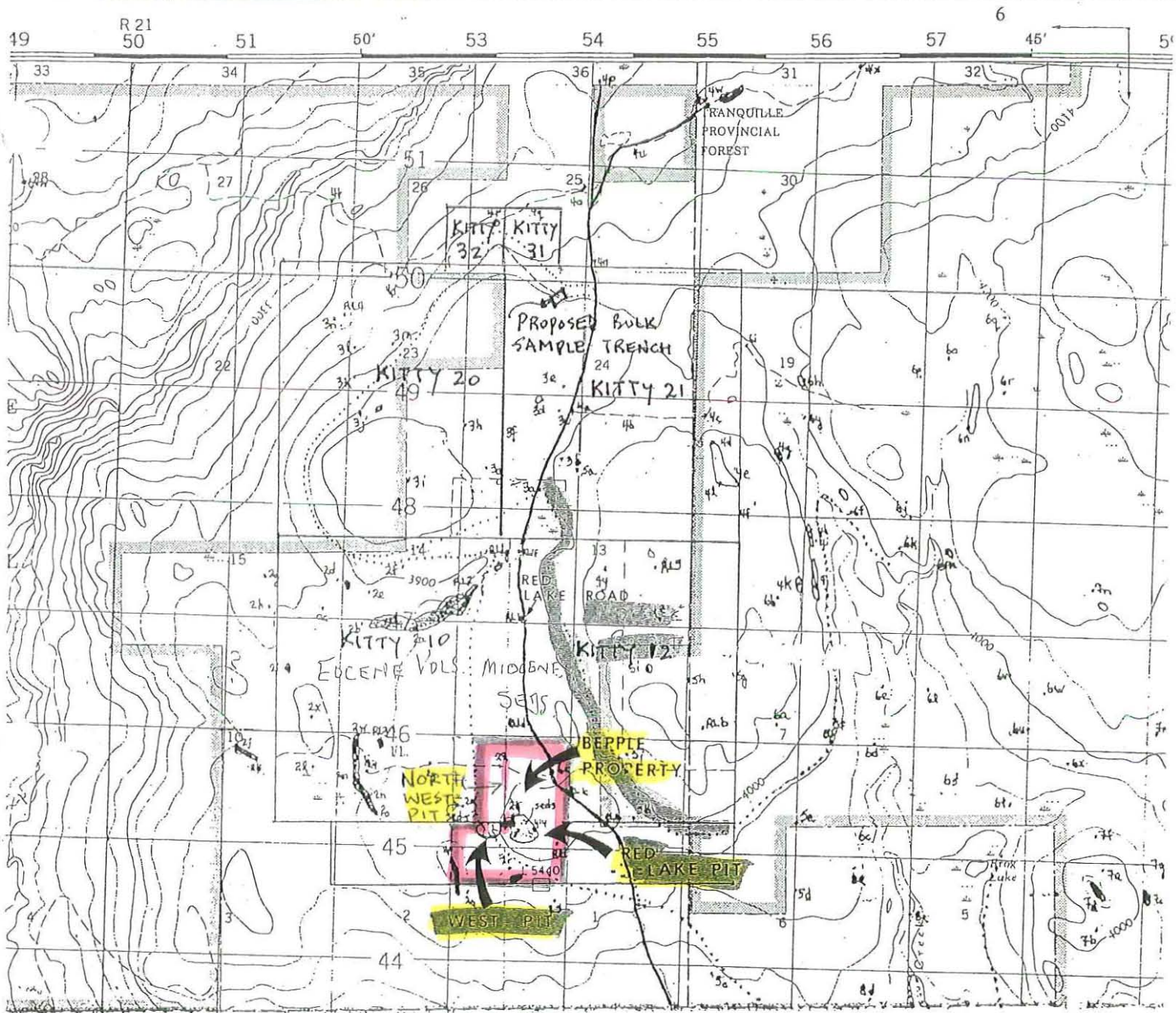
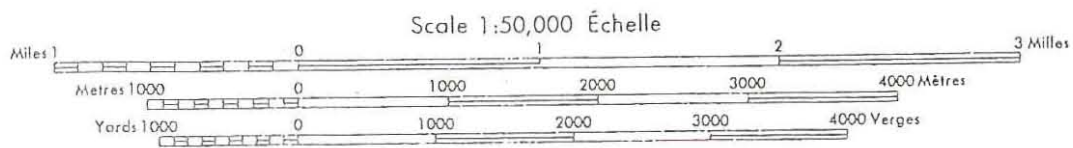


Figure 3: Regional geological map of the KITTY claims (outlined in yellow) which are underlain by a basement of Eocene volcanic rocks and overlain by diatomaceous Miocene sediments (MIOCENE SEDS) topped by basalt flows (MIOCENE BASALT).



NTS MAP SHEET 92-1/15

23 R21

Rec or Tenure#  
slb 367919  
Kitty 10

SEE DETAIL A

Kitty 3

N. 1/2 NE 1/4 SEC 2  
TP 23, R 21, W.6M.

KILLY 17

REC. # 367916  
TAG # 689596 M  
LOC. FEBRUARY 22, 1999  
REC. #367774  
LOC. FEBRUARY 3, 1999

SW 1/4 SEC 12

2" (EXCEPT THE SW 1/4 OF THE SW 1/4)  
TP 23, R 21, W.6M.

23 FINAL POST  
KITTY 16  
#6 NO BT  
INITIAL POST  
KITTY 17

OLD  
BARN.2

KITTY 16

AREA = 2.68 ha.  
— REC. # 367915  
TAG # 689595 M  
LOC. FEB. 22, 1999

SEE DETAIL

INITIAL POST  
KITTY 16

KITTY 1.

AREA = 6.25 ha.  
REC. # 367914  
TAG # 689594 M  
LOC. FEBRUARY 22, 1999

90°00'25"	362.339
	359.050
90°00'00"	

KITTY

BLOCK B  
NW 1/4 SEC 1  
P 23, R 21, W.6M.

REC. # 218218 (#8258)  
TAG # 117309  
LOC. JANUARY 19, 1989

D. L. 6 3 8 5

KITTY 14

AREA = 21.4 ha.

REC. # 367913  
TAG # 689593 M  
LOC. FEBRUARY 22, 1999

**BEPPE PIT**

BLOCK A  
SEC 11 TP 23 R 21

## NORTH WEST PIT

12.0\_hq

## WEST PIT

16-0 ha REC. # 218220  
TAG#117307  
LOC. JANUARY 19, 1989

BLOCK A  
NE 1/4 SEC 2  
TP 23, R 21, W.6M.

## RED LAKE PIT

16.0kcal

BLOCK A  
NW 1/4 SEC 1  
TP 23, R 21, W.6M.

**Mining Lease # 310888**

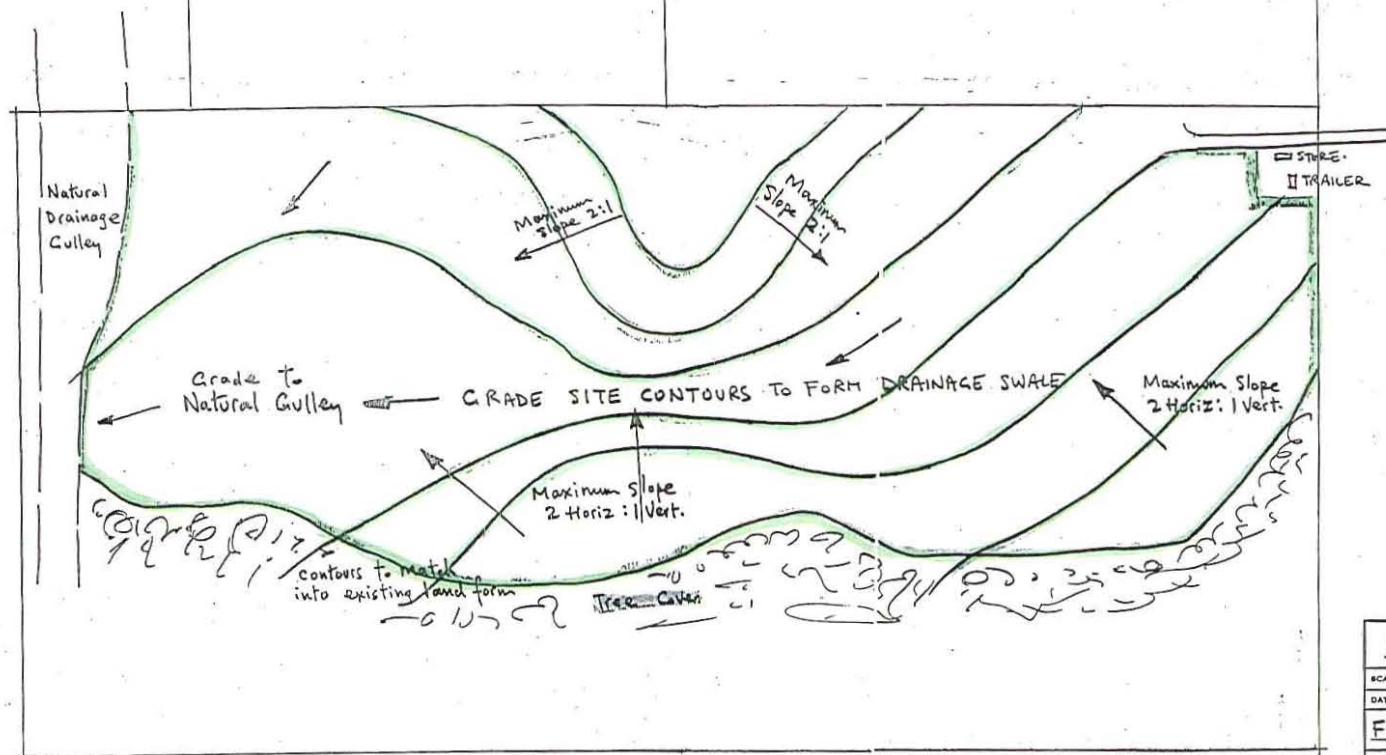
MINERAL TENURE- MINING LEASE #310888

SCALE: 1 | 5,000

Mine Permit Q - 15 - 006

EGM-2013-00020  
Page 100





Notes:

- All disturbed areas to be covered with a minimum depth of 1.0 metre of soil and overburden for the growth medium, after backfilling.
- All disturbed areas to be seeded with an approved seed mixture.
- All slopes left at a maximum of 2 Horiz: 1 Vert. or flatter.
- Area graded for drainage to the gully.

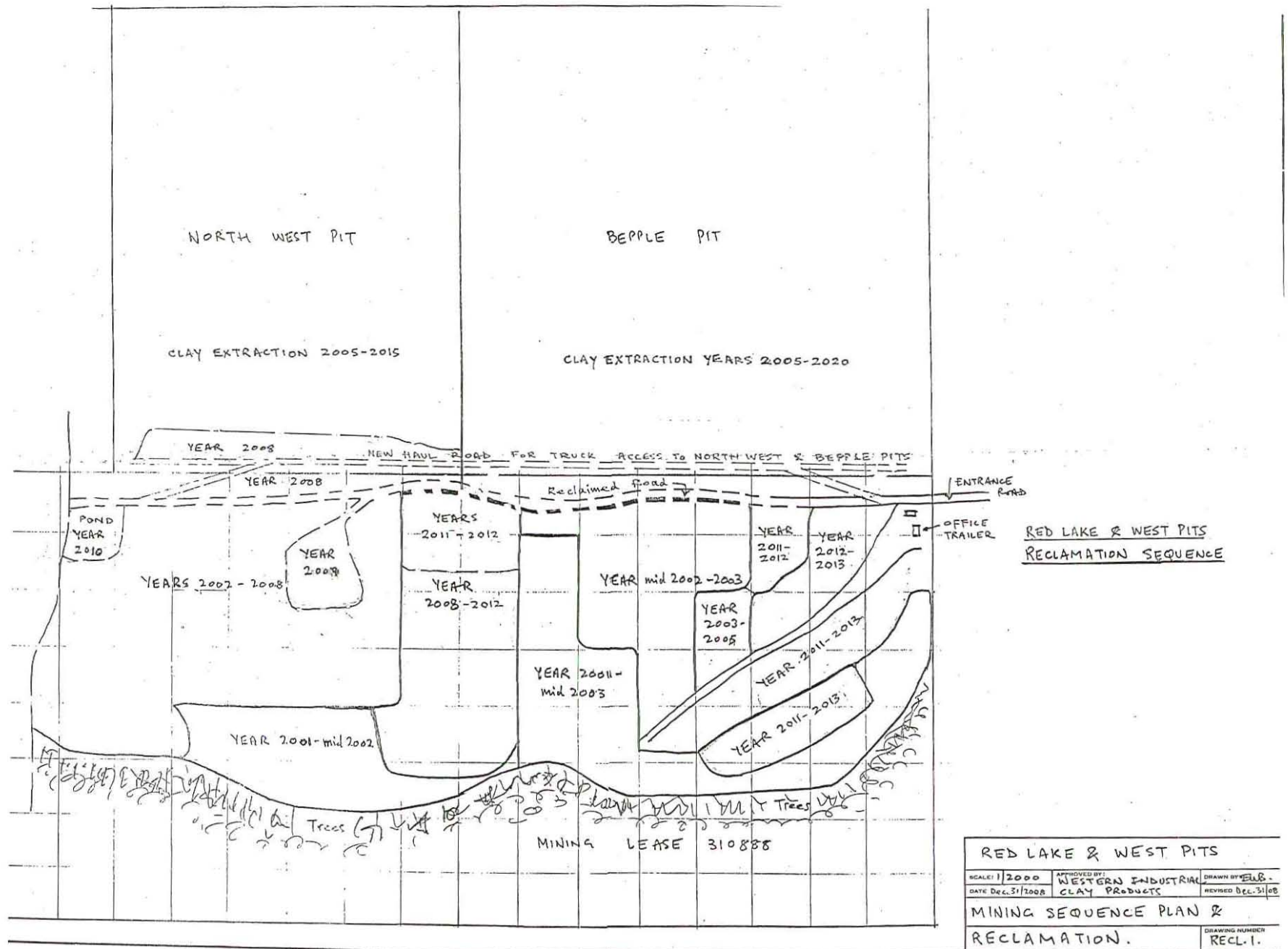
RED LAKE & WEST PITS

SCALE: 1/2000 APPROVED BY: WESTERN INDUSTRIAL CLAY PRODUCTS LTD. DRAWN BY: EWB.

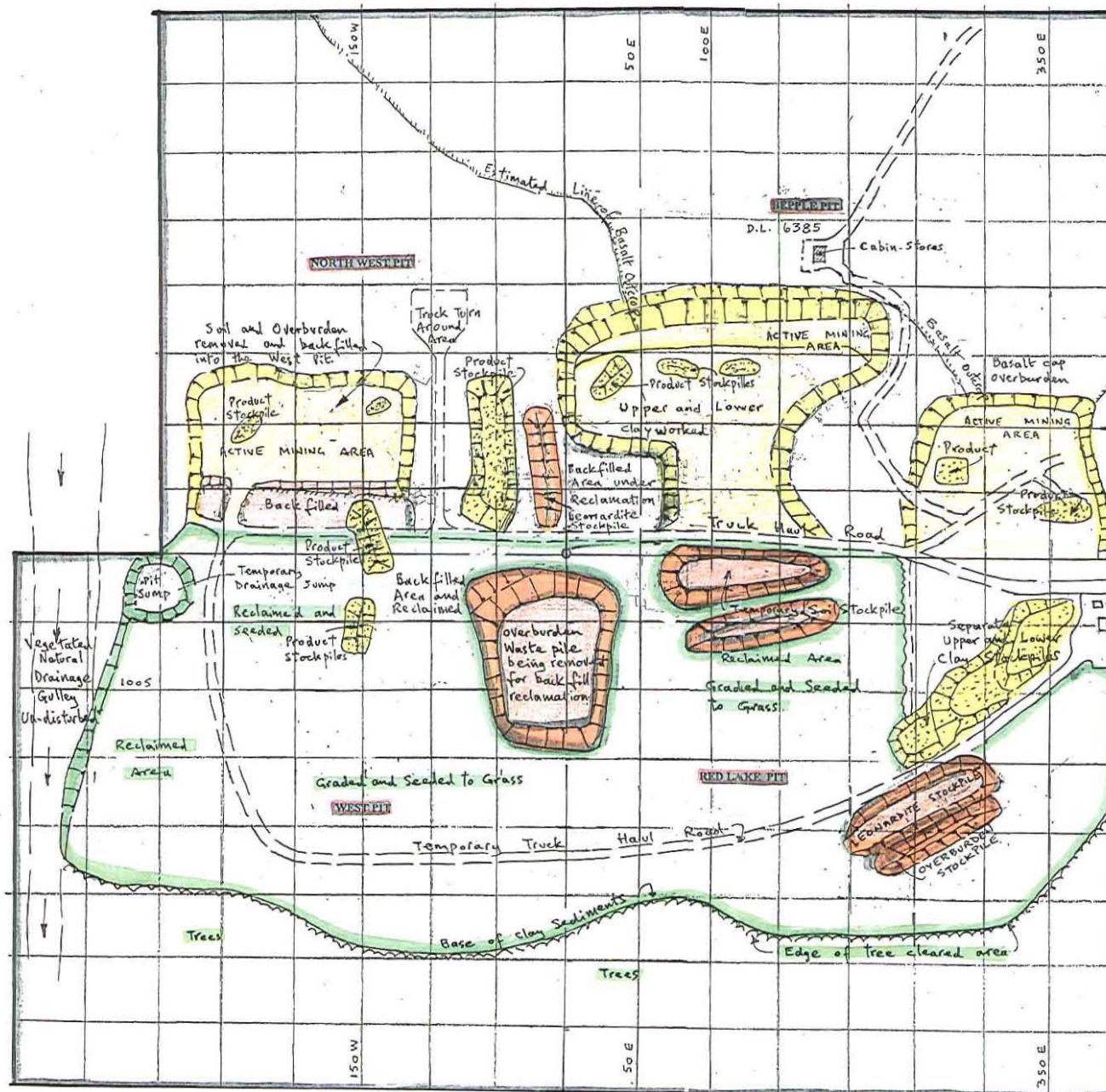
DATE: REVISED Jan. 2005

FINAL RECLAMATION CONTOURS

AFTER BACKFILLING DRAWING NUMBER RECL. 2.

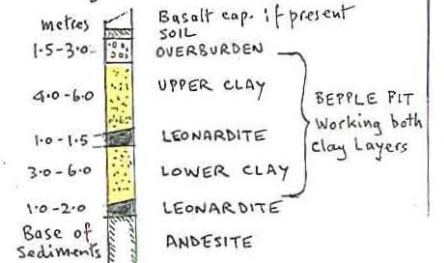






# STRATIGRAPHY OF MIOCENE DEPOSITS

Average thickness range



TOTAL BACKFILL & RECLAMATION AREA

Gated Entrance

ENTRANCE ROAD

Red Lake Quarry, West Pit,  
North West & Bepple Pits

## Reclamation Progress 2009

- 1] Backfilling and topsoil placement and grading continued in the Red Lake and West Pit areas.
- 2] Seeding to grass continued in the disturbed areas after grading.
- 3] Pit water drainage directed into a temporary sump in the north west corner of the West Pit.
- 4] Upper and Lower Clays blended to produce a run-of-mine product for the Kamloops Plant.

## Mining Development 2009

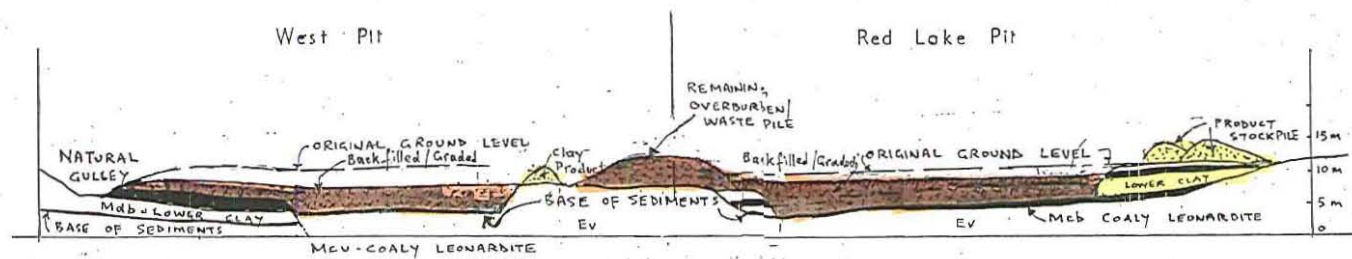
- 1] Soil and overburden removal continued in the Bepple Pit in the south east corner.
- 2] Temporary stockpiles formed on the mined out and graded areas of the Red Lake Pit.
- 3] Clay extraction continued mainly in the Bepple Pit and North West Pit with remnants from the West Pit.
- 4] The main truck haul road has been re-aligned to allow the underlying clay to be mined.  
A temporary haul road is maintained to access the West Pit area.

G.W. Beverford P.Eng.

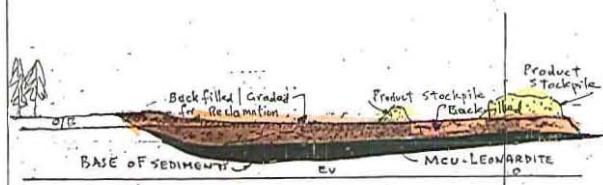
RED LAKE QUARRY, WEST PIT,  
NORTH WEST & BEPPLE PITS

Scale 1/2,000	Mining Lease # 310888	Drawn by G.W. Beverford P.Eng.
Date Dec. 31/2009		Reviewed Dec 31/2009

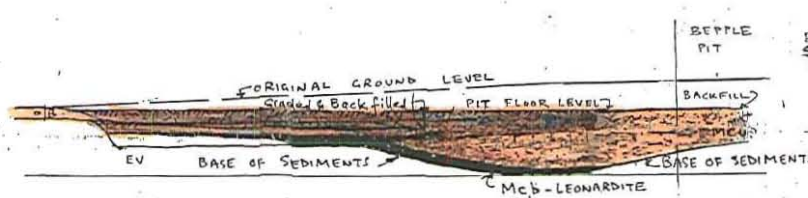
Plan of Existing Workings & Reclamation Progress



LONGITUDINAL SECTION 100 S

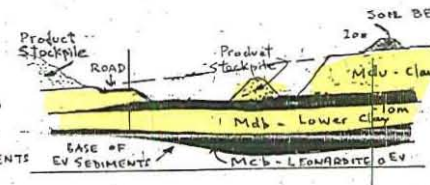


SECTION 150W-WEST PIT

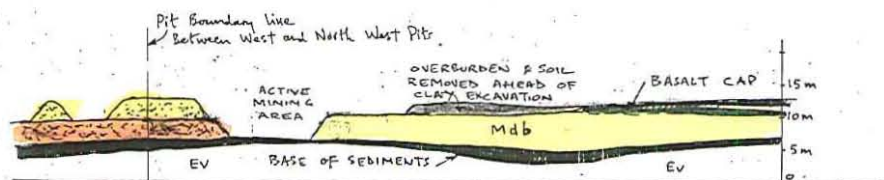


SECTION 50E

RED LAKE PIT



SECTION 350E



SECTION 150W-NORTH WEST PIT



SECTION 100E-BEPPLER PIT

R.W. Bedford P.Eng

PLAN N° MIN.

WESTERN INDUSTRIAL CLAY PRODUCTS LTD.		
SCALE: 1/2000 H		EMBERSHAW
1/500 VERT		Dec 31/2009
SECTIONS THROUGH RED LAKE,		
WEST, NORTH-WEST, BEPPLER PITS		



Eric W. Beresford, P.Eng.,  
Mining Consultant  
P. O. Box 1529  
Carstairs, Alberta T0M 0N0  
403-3374031 Fax 337-2789  
Email: [ericwberesford@shaw.ca](mailto:ericwberesford@shaw.ca)

March 28, 2011

Diane Howe, M.A.Sc.P.Geo.,  
Deputy Chief Inspector of Mines, Reclamation and Permitting  
Ministry of Natural Resource Operations  
P.O. Box 9320, Stn Prov. Govt.  
6<sup>th</sup> Floor, 1810 Blanchard Street  
Victoria, BC V8W 9N9

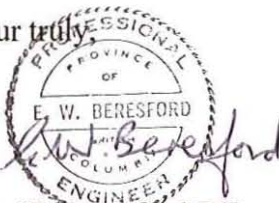
Dear Diane Howe:

**Mine Permit Q-15-006, Annual Reclamation Report  
Absorbent Products Ltd./Western Industrial Clay Products Ltd, Kamloops**

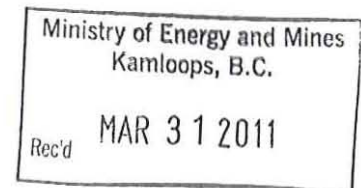
On behalf of Absorbent Products Ltd., Kamloops, I enclose the year 2010 Annual Reclamation Report for the Red Lake Quarry. Mining development of the clay extraction and reclamation progress are shown for the Red Lake, West, North West Pits and Beppe pit in Mining Lease No.310888 and DL 6385.

Should you have any questions of a technical nature regarding the report, please direct them to the undersigned as I act as consultant to Absorbent Products Ltd.

Your truly,



Eric W. Beresford, P.Eng.  
Mining Engineer /Consultant



Attachment:

cc: Bruce Hupman, P.Ag., Manager, Permitting. MNRO, Kamloops ✓  
Peter Aylen, C.A., MBA., President, Absorbent Products Ltd.  
Dave Bowers, Mine Manager

**WESTERN INDUSTRIAL CLAY PRODUCTS LTD.**

**a division of ABSORBENT PRODUCTS LTD.**

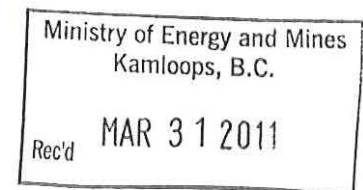
**ANNUAL RECLAMATION REPORT**

**for YEAR 2010**

**RED LAKE QUARRY**

**MINE PERMIT Q-15-006**

**MINING LEASE No. 310888 & D.L. 6385**



E. W. Beresford, P.Eng.  
Mining Engineer/Consultant

March 28, 2011



## **TABLE of CONTENTS**

1. Introduction
2. Location
3. Red Lake Quarry Stratigraphy
4. Reserves
5. Mining and Production
6. Reclamation
7. Reclamation Liability Cost Estimates
8. Acid Rock Drainage Potential

### **List of Drawings**

- Mineral Tenure Lease No. 310888, Scale 1/5,000
- Min.1 Existing workings – Red Lake and West Pits, Scale 1/2,000
- Min.2 Sections through Red Lake, West, North West, Bepple Pits  
Scale 1/500 Vertical and 1/2000 Horizontal

### **List of Tables**

- Table 1 - Summary of Disturbed and Reclaimed Area to December 31, 2010
- Table 4 - Five Year Projection of Anticipated Mining and Reclamation

## **1. Introduction**

This report details mining and reclamation activities carried out at the Red Lake Quarry to December 31, 2010 and a five year projection of anticipated mining and reclamation. The mine is operated under Permit Q-15-006 issued to Western Industrial Clay Products Ltd., (WICPL) in 1994 with subsequent amendments in 1996, 2001 and 2003. Western Industrial Clay Products Ltd., is a division of Absorbent Products Ltd.

A 20 year Mining Lease No. 310888 was granted to WICPL on November 30, 1992 which expires in 2012. Mining Lease No. 310888 was extended to include the Bepple property and now comprises a total of 60 hectares (150 acres) divided into four mining areas, namely Red Lake, West, North West and Bepple pits. In early 2006, WICPL purchased the 44.0 hectares of Crown land within Mining Lease No.310888. Clay was excavated from the North West and Bepple pits during 2010. Reclamation work including backfilling and grading of mine out areas and seeding to grass has been continued in 2010 in the West pit and commenced in the Bepple pit.

## **2. Location**

The Red Lake quarry is 40 km north west of Kamloops, at an elevation of 1,300 metres. The first 8 km of the road is paved with the remaining 32 km a publically maintained gravel road.

WICPL have their processing, bagging plant, distribution warehouse and office at Kamloops and operates year round. The mining and trucking of the raw material to the Kamloops Plant is of a seasonal nature to avoid winter conditions and usually operates about 7 to 8 months of the year.

## **3. Red Lake Quarry Stratigraphy**

The diatomaceous earth deposit is divided into Upper and Lower Clay and separated by a carbonaceous shale/lignite seam of approximately 1.0 to 1.5 metres in thickness known as Leonardite. A basal Leonardite seam is also present in parts of the quarry. The Leonardite seam is rich in humic and fulvic acids and is mined separately for future use as a soil conditioner and peat enhancement. The Upper Clay is between 4.0 to 6.0 metres in thickness and found in the Red Lake pit only and the Lower clay is between 3.0 to 6.0 metres and present throughout the lease. The Upper and Lower clays have different specific gravities varying from 0.59g/cc to 0.51g/cc, the plant was originally designed around mining only the Upper Clay layers at a 0.59g/cc. The company is currently blending the upper and lower clays to produce a variety of product specifications to meet customer requirements.



The soil and overburden layers over the area vary from 1.5 to 3.0 metres in thickness, and is excavated and used as backfill and soil for final pit reclamation. Andesite forms the base of the diatomaceous earth sediments. A basalt cap is present in the north east part of the quarry overlying the Upper Clay.

#### **4. Reserves**

Estimated reserves in the pit areas are as follows:

	<u>Upper Clay</u>	<u>Lower Clay</u>	<u>Leonardite</u>
(a) Red Lake pit	10,000 cu.m	31,000 cu.m	35,000 cu.m
(b) West pit	-	-	-
(c) North West Pit	195,000 cu.m	-	80,000 cu.m
(d) Bepple pit	180,000 cu.m	448,000 cu.m	285,000cu.m
<b>TOTAL</b>	<b><u>385,000 cu.m</u></b>	<b><u>479,000 cu.m</u></b>	<b><u>400,000 cu.m</u></b>

Approximately 10% to 20% of the above clay reserves are reduced by natural outwash of the clay seams or contaminated by overburden during mining extraction.

The contaminated clay material is stockpiled as overburden and used for reclamation backfill of the site.

#### **5. Mining and Production**

As the deposit is flat lying the clay and overburden is removed by two T.S. 18 scraper machines, Cat D-8 bulldozer, Excavator and Loader. The average mining depth to final excavation of clay reserves throughout the quarry is between 6 to 10 metres. Separate stockpiles are created for the Upper and Lower clay seams of varying qualities before trucking to the Kamloops plant. Leonardite is stockpiled on site for future sales or used in reclamation of the site when blended with soil and overburden.

Drawings Min.1/Min.2 show the updated mining and reclamation progress at December 31, 2010.

During year 2010 some 30,000 cu.metres of Upper Clay and 20,000 cu.metres of Lower Clay were mined. Production from the Red Lake quarry was 50,000 cu.metres (28,000 tonnes). A stockpile of about 10,000 cu.metres of clay is maintained between the minesite and the plant for access during the winter shutdown at the quarry.

In year 2011 mine development will continue as planned with an expected total clay production of between 50,000 to 55,000 cu.metres. During 2011 both Upper Clay and

Lower Clay will be mined in the North West Pit and the Bepple Pit together with Leonardite as it occurs in a mineable thickness.

Stockpiled inventory clay on site has been calculated at 73,000 tonnes. Absorbent Products Ltd., produces a wide variety of absorbent granule products from the diatomaceous earth for cat litter, animal barn litter, oil and chemical spills.

## **6. Reclamation**

Reclamation in 2010 consisted of removing soil and overburden from the Bepple Pit over an area of 1.0 hectare and placing this material directly into a mined out section of the pit for backfill to final grade.

Table 1 shows the disturbed and reclaimed areas to December 31, 2010.

Table 4 shows the five year projection of anticipated mining and reclamation.

The total backfilled and graded area reclaimed and seeded in the Red Lake and West pits is 19.1 ha, with a further 1.8 ha backfilled but not seeded.

The Bepple and North West pits are now being developed as reclamation in the two original pits are substantially reclaimed and completed except for an area of 1.7 ha of in-situ clay remaining in the east part of the Red Lake pit. This area is overlain by product and overburden stockpiles.

The seed species used in the reclamation program is a Forestland Mix purchased from a Kamloops seed company and is comprised of the following grasses: Orchard Grass 25%, White Clover 5%, Creeping Red Fescue 15%, Crested Wheatgrass 15%, Timothy 10%, Singles Cut Red Clover 5%, Annual Ryegrass 25%.

The seed mix is spread at the rate of 45 lbs – 62.5 lbs per hectare over the reclaimed land on a covering of top soil and Leonardite. To date no fertilizer has been applied with the Forestland Mix and results show a strong vegetation growth over the past six years since seeding began. The vigorous growth is attributed to the high nutrients within the Leonardite and mixed with topsoil. Absorbent Products Ltd., intend to restore the land to grassland pasture.

All final reclamation slope angles will be less than 2h:1v(27 deg.) with a maximum slope length of 50 metres. Over 90% of the site will be reclaimed to a final slope angle of between 5 to 10 degrees and graded to the natural drainage gully at the west boundary of the Red Lake Quarry.

Site photographs were not available due to snow cover but photos will be taken in spring/summer to show the vegetation growth in 2011.



## **7. Reclamation Liability Cost Estimates**

Sequenced mining and reclamation development plans were approved under Permit Q-15-006 in October 2000 and have been followed. Progressive reclamation has been carried out over the last 10 years since commencement of backfill and grading in 2001.

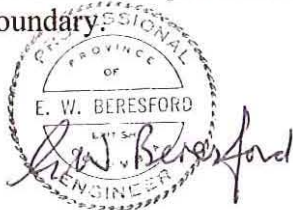
WICPL utilize their own earth moving equipment to backfill and grade the mined out areas. The majority of the area requiring backfill and grading is included in the clay production costs if the overburden is being moved as part of the mining process. When overburden is moved separately and stockpiled or pushed into the mined out areas from existing stockpiles, then this cost is separated out as a direct reclamation cost. WICPL have allowed \$8,500 per ha for direct reclamation costs based on previous experience of actual costs at the quarry over the past years. Based on WICPL reclamation cost figures and the amount of un-reclaimed area the current reclamation security bonding of \$70,000.00 is adequate to cover reclamation liability for the total quarry operation.

Overburden including waste clay not suitable for product blending and soil will be removed from the North West and Beppe pits and placed directly in mined out areas for backfill and final reclamation. Total disturbed area at December 31, 2010 is 8.30 ha, which includes roads, stockpiles and mining areas.

## **8. Acid Rock Drainage Potential**

The diatomaceous earth (Fuller's Earth) being worked by WICPL is non-acid generating with a ph of between 6 to 7. Surface water flow is directed towards a natural vegetated gully on the west side of the property and there has been no leaching or other water quality issues on the Red Lake property.

A small settlement pond was constructed in 2005 at the north west corner of the West Pit to collect pit run-off drainage from the North West and West Pits. This water is allowed to settle in the pond and clean water filtrates into the natural gully along the west boundary.



Eric W. Beresford, P.Eng.  
Mining Engineer/Consultant

March 28, 2011

TABLE 1

## SUMMARY OF AREAS DISTURBED AND RECLAIMED TO DECEMBER 31, 2010

COMPANY: ABSORBENT PRODUCTS LTDPERMIT NO.: Q-15-006

DISTURBANCE	MINING		RECLAMATION								
	AREA DISTURBED (ha)		AREA RECONTOURED (ha)		AREA SEEDED/PLANTED (ha)		AREA FERTILIZED (ha) * LEONARDITE		AREA REVEGETATED* (ha)		LAND USE OBJECTIVE**
	2010	TOTAL***	2010	TOTAL***	2010	TOTAL***	2010	TOTAL***	2010	TOTAL***	
WASTE DUMPS	-	-	-	2.7	-	4.0			-	4.0	GRAZING
TAILINGS PONDS	-	-	-	-	-	-			-	-	PASTURE
PLANT SITE	-	0.1	-	-	-	-			-	-	GRAZING
ROADS	-	0.9	-	1.9	-	0.6			-	-	GRAZING
ADMINISTRATION	-	-	-		-	-			-	-	
PIT	1.0	6.3	0.8	16.3	-	14.5	LEONARDITE USED AS FERTILIZER		12.5		GRAZING PASTURE
STOCKPILES	-	1.0	-	-	-	-				-	
LINEAR	-	-	-	-	-	-				-	"
OTHER	-	-	-	-	-	-				-	
TOTAL	1.0	8.3	0.8	20.9	-	19.1	-	19.1		16.5	GRAZING PASTURE

EXEMPT e.g., pit high walls	NIL	ha
--------------------------------	-----	----

\* In order for an area to be recorded as "revegetated" it must have supported vegetation that will lead to the designated land use objective for at least one year.

\*\* Specify land use. Options include: forestry, grazing, wildlife habitat, recreation, agricultural, industrial, residential, and other.

\*\*\* Total up to December 31, 2010



## FIVE-YEAR PROJECTION OF ANTICIPATED MINING AND RECLAMATION

COMPANY: ABSORBENT PRODUCTS LTDPERMIT NO.: Q-15-006

	MINING						RECLAMATION																	
	AREA DISTURBED (ha)						AREA RECONTOURED (ha)						AREA SEEDED/PLANTED (ha)						AREA FERTILIZED (ha)					
YEAR	2011	12	13	14	15	Total	2011	12	13	14	15	Total	2011	12	13	14	15	Total	2011	12	13	14	15	Total
WASTE DUMPS	-	-	-	-	-	-	-	-	-	-	1.3	1.3	-	-	-	-	1.3	1.3						
TAILINGS PONDS	-	-	-	-	-	-	-	-	-	-	-	-												
PLANT SITE	-	-	-	-	-	-	-	-	-	-	-	-												
ROADS	-	-	1.0	-	-	1.0	-	0.4	-	-	-	0.4	-	0.4	-	-	-	0.4						
ADMINISTRATION	-	-	-	-	-	-																		
PIT AREAS	1.0	0.5	0.5	1.0	0.5	3.5	1.0	1.0	0.5	1.0	0.5	4.0	1.0	1.0	-	1.0	-	3.0	LEONARDITE USED AS FERTILIZER-MIXED					
STOCKPILES	0.2	0.5	0.1	-	-	0.9	-	0.2	-	-	0.2	0.4	-	-	0.6	-	-	0.6	WITH SOIL					
LINEAR (pipelines, powerlines, etc.)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-						
OTHER	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-						
EXEMPT (e.g., pit high walls)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-						
TOTAL	1.2	1.0	1.7	1.0	0.5	5.4	1.0	1.6	0.5	1.0	2.0	6.1	1.0	1.4	0.6	1.0	1.3	5.3						



S.E. 1/4  
(EXCEPT THE EASTERLY 15 CHAINS OF LS 1)

TP 23 R21

KITTY 10  
REC. # 3367919  
TAG # 237411  
LOC. FEBRUARY 23, 1999

Rec or Tenure#  
slb 367919  
KITTY 10

SEE DETAIL A

N. 1/2 NE 1/4 SEC 2  
TP 23, R 21, W.6M.

BLOCK A  
SEC 11 TP 23 R 21

**NORTH WEST PIT**

12.0 ha

**WEST PIT**

16.0 ha REC. # 218220  
TAG # 117307  
LOC. JANUARY 19, 1989

BLOCK A  
NE 1/4 SEC 2  
TP 23, R 21, W.6M.

KITTY 17  
REC. # 367916  
TAG # 689596 M  
LOC. FEBRUARY 22, 1999  
REC. # 367774  
LOC. FEBRUARY 3, 1999

D. L. 6385

KITTY 14

AREA = 21.4 ha.

REC. # 367913  
TAG # 689593 M  
LOC. FEBRUARY 22, 1999

**BEPPE PIT**

**RED LAKE PIT**

16.0 ha

**Mining Lease # 310888**

BLOCK A  
NW 1/4 SEC 1  
TP 23, R 21, W.6M.

SW 1/4 SEC 12

(EXCEPT THE SW 1/4 OF THE SW 1/4)  
TP 23, R 21, W.6M.

KITTY 16

AREA = 2.68 ha.

REC. # 367915  
TAG # 689595 M  
LOC. FEB. 22, 1999

SEE DETAIL

INITIAL POST  
KITTY 16

KITTY 15

AREA = 6.25 ha.  
REC. # 367914  
TAG # 689594 M  
LOC. FEBRUARY 22, 1999

KITTY 1

REC. # 218218 (#8268)  
TAG # 117309  
LOC. JANUARY 19, 1989

BLOCK B  
NW 1/4 SEC 1  
TP 23, R 21, W.6M.

MINERAL TENURE- MINING LEASE #310888

SCALE: 1/5,000

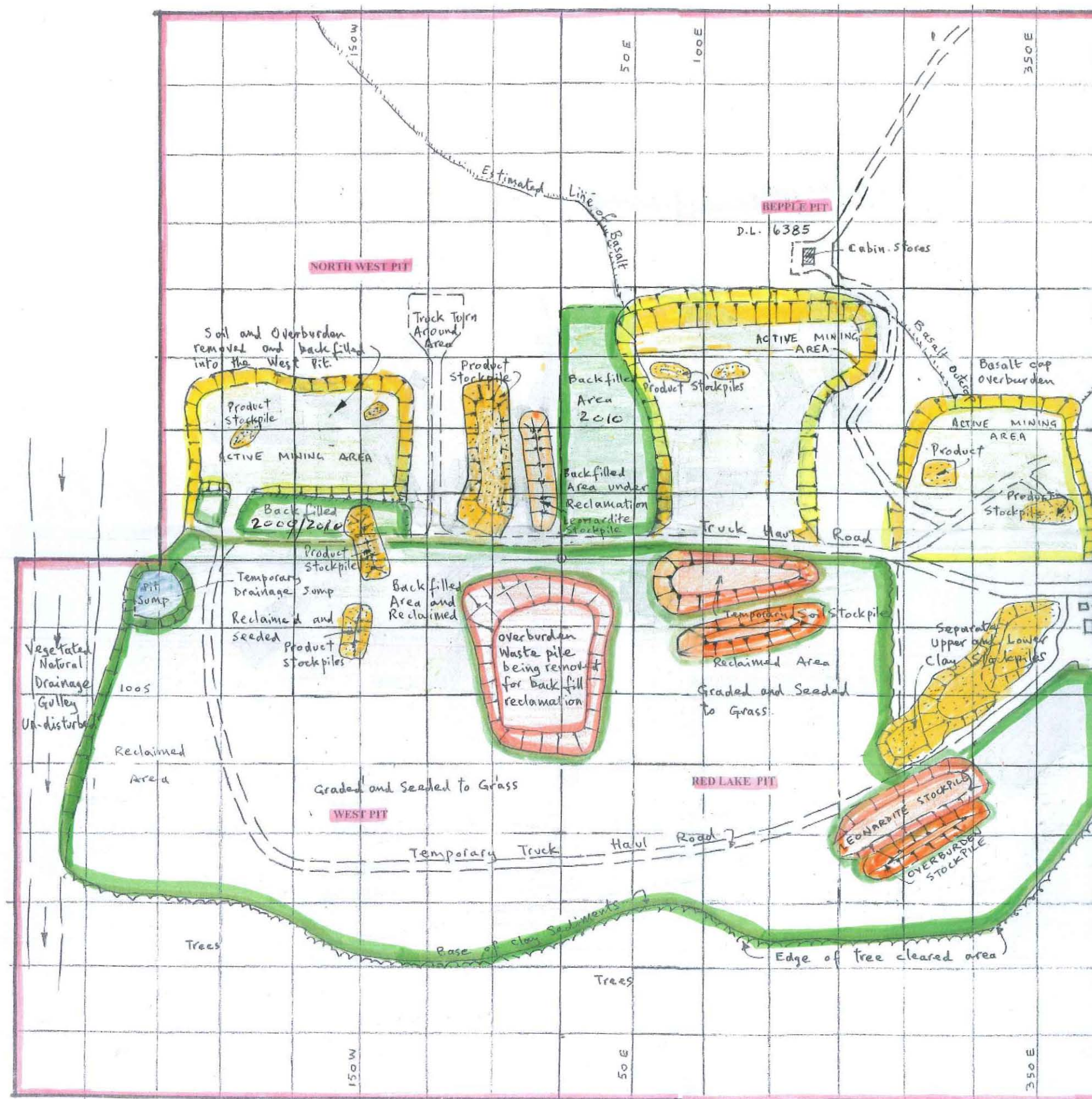
Ministry of Energy and Mines  
Kamloops, B.C.

Rec'd MAR 31 2011



Mine Permit Q-15-006





# STRATIGRAPHY OF MIOCENE DEPOSITS

Average thickness range

metres	Basalt cap. if present
1.5-3.0	SOIL OVERBURDEN
4.0-6.0	UPPER CLAY
1.0-1.5	LEONARDITE
3.0-6.0	LOWER CLAY
1.0-2.0	LEONARDITE
Base of Sediments	ANDESITE

BEPPLE PIT  
Working both  
clay layers

Ministry of Energy and Mines  
Kamloops, B.C.

Rec'd MAR 31 2011

— TOTAL BACKFILL & RECLAMATION AREA

Gated Entrance  
ENTRANCE ROAD

Red Lake Quarry, West Pit  
North West & Bepple Pits

## Reclamation Progress 2010

- 1) Backfilling and topsoil placement and grading continued in the Bepple and West Pit areas.
- 2) Seeding to grass continued in the disturbed areas after grading.
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## Mining Development 2010

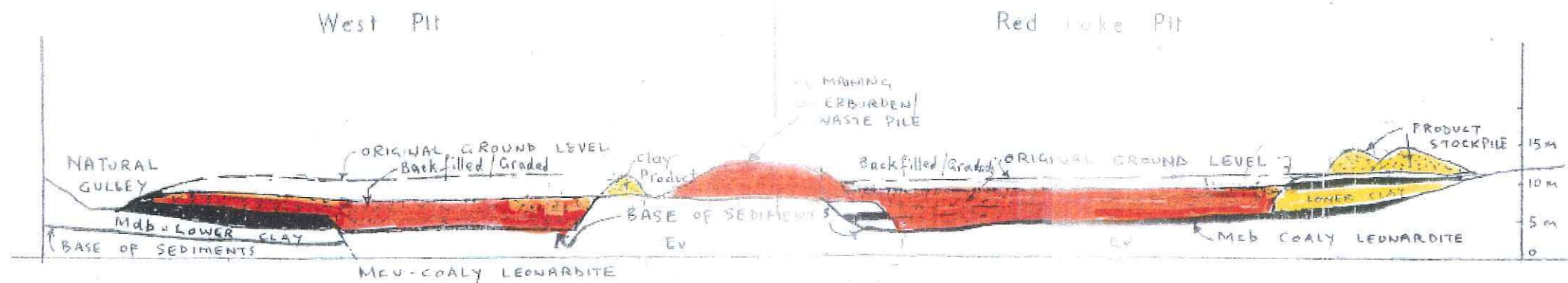
- 1) Soil and overburden removal continued in the Bepple Pit
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- 4) The main truck haul road has been re aligned to allow the underlying clay to be mined.  
A temporary haul road is maintained to access the West Pit area.

PROFESSIONAL  
OF  
E. W. BERESFORD  
E.W. Beresford P.Eng.

Plan Min.1  
RED LAKE QUARRY, WEST PIT,  
NORTH WEST & BEPPLE PITS

SCALE 1/3,000  
DATE Dec. 31 / 2010  
Mining Lease # 310888  
E.W. Beresford P.Eng.  
REVISED Dec 31 / 2010





LONGITUDINAL SECTION 100 S

Ministry of Energy and Mines  
Kamloops, B.C.

Rec'd MAR 31 2011

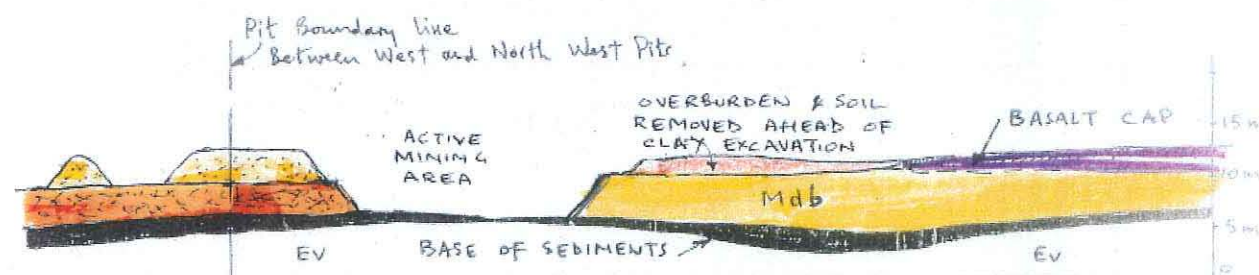


SECTION 150 W-WEST PIT

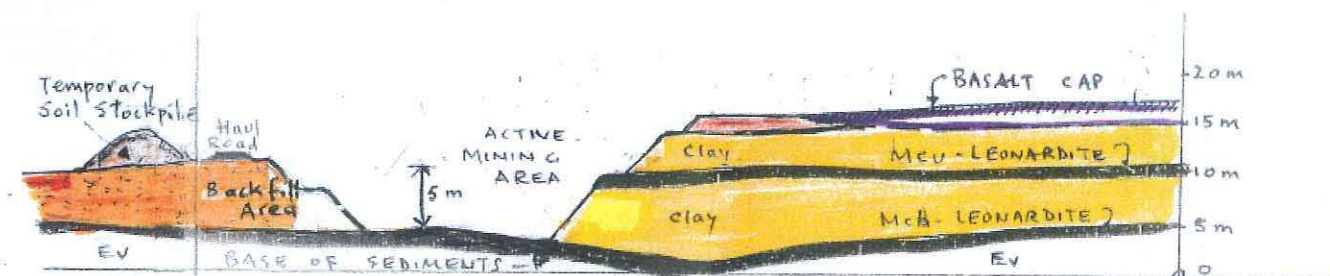
SECTION 50E

RED LAKE PIT

SECTION 350E



SECTION 150 W-NORTH WEST PIT



SECTION 100E - BEPPLE PIT



PLAN N° MIN.2

WESTERN INDUSTRIAL CLAY PRODUCTS LTD		
SCALE: 1/3000 H		E.W. BERESFORD P. Eng
1/500 VERT		Dec 31/2010
SECTIONS THROUGH RED LAKE, WEST, NORTH-WEST PITS		



Eric W. Beresford, P.Eng.  
Mining Consultant  
P. O. Box 1529  
Carstairs, AB T0M 0N0  
[ericwberesford@shaw.ca](mailto:ericwberesford@shaw.ca)

January 6, 2012

Diane Howe, M.A.Sc.P.Geo.,  
Deputy Chief Inspector of mines, Reclamation and Permitting  
Ministry of Natural Resource Operations  
P.O. Box 9320, Stn Prov.Govt  
6<sup>th</sup> Floor, 1810 Blanchard Street  
Victoria, BC V8W 9N9

Dear Diane Howe:

**Mine Permit Q-15-006, Annual Reclamation Report  
Absorbent Products Ltd./Western Industrial Clay Products Ltd., Kamloops**

On behalf of Absorbent Products Ltd., I enclose the year 2011 Annual Reclamation Report for the Red Lake Quarry. Mining development of the clay extraction and reclamation progress are shown for the Red Lake, West, North West Pits and Beppe pit in Mining Lease No.310888 and DL 6385.

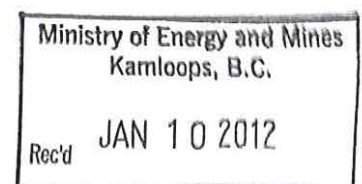
Should you have any questions of a technical nature regarding the report, please direct them to the undersigned as I act as consultant to Absorbent Products Ltd.

Yours truly,  
A circular professional engineer seal for the Province of British Columbia. The seal contains the text "PROFESSIONAL ENGINEER OF THE PROVINCE OF BRITISH COLUMBIA" around the perimeter. In the center, it reads "E. W. BERESFORD" and "P. ENG.". A blue ink signature is written over the seal.

Eric W. Beresford, P.Eng.  
Mining Engineer/Consultant

**Attachment:**

cc: Bruce Hupman, P.Ag., Manager, Permitting. MNRO, Kamloops  
Peter Aylen, C.A., MBA., President, Absorbent Products Ltd.  
Dave Bowers, Mine Manager



**WESTERN INDUSTRIAL CLAY PRODUCTS LTD.**

**a division of ABSORBENT PRODUCTS LTD.**

**ANNUAL RECLAMATION REPORT**

**for YEAR 2011**

**RED LAKE QUARRY**

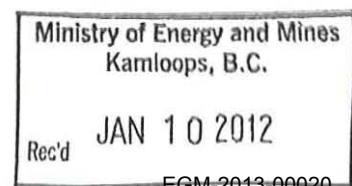
**MINE PERMIT Q-15-006**

**MINING LEASE No. 310888 & D.L. 6385**



E. W. Beresford, P. Eng.  
Mining Engineer/Consultant

January 4, 2012





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## **1. Introduction**

This report details mining and reclamation activities carried out at the Red Lake Quarry to December 31, 2011 and a five year projection of anticipated mining and reclamation. The mine is operated under Permit Q-15-006 issued to Western Industrial Clay Products Ltd., (WICPL) in 1994 with subsequent amendments in 1996, 2001 and 2003. Western Industrial Clay Products Ltd., is a division of Absorbent Products Ltd.

A 20 year Mining Lease No. 310888 was granted to WICPL on November 30, 1992 which expires in November 2012, and an application will be filed to Mineral Titles for an extension for a 20 year renewal. Mining Lease No. 310888 was extended to include the Bepple property and now comprises a total of 60 hectares (150 acres) divided into four mining areas, namely Red Lake, West, North West and Bepple pits. In early 2006, WICPL purchased the 44.0 hectares of Crown land within Mining Lease No. 310888. Clay was excavated from the North West and Bepple pits during 2011. Reclamation work including backfilling and grading of mined out areas and seeding to grass has been continued in 2011 in the West and Red Lake pits and in the Bepple pit.

## **2. Location**

The Red Lake quarry is 40 km north west of Kamloops, at an elevation of 1,300 metres. The first 8 km of the road is paved with the remaining 32 km a publically maintained gravel road. WICPL have their processing, bagging plant, distribution warehouse and office at Kamloops and operates year round. The mining and trucking of the raw material to the Kamloops Plant is of a seasonal nature to avoid winter conditions and usually operates about 7 to 8 months of the year.

## **3. Red Lake Quarry Stratigraphy**

The diatomaceous earth deposit is divided into Upper and Lower Clay and separated by a carbonaceous shale/lignite seam of approximately 1.0 to 1.5 metres in thickness known as Leonardite. A basal Leonardite seam is also present in parts of the quarry. The Leonardite seam is rich in humic and fulvic acids and is mined separately for future use as a soil conditioner and peat enhancement and used in the final reclamation of the land. The Upper Clay is between 4.0 to 6.0 metres in thickness and found in the Red Lake pit and Bepple pit and the Lower clay is between 3.0 to 6.0 metres and present throughout the lease. The Upper and Lower clays have different specific gravities varying from 0.59g/cc to 0.51g/cc, the plant was originally designed around mining only the Upper Clay layers at 0.59g/cc. The company is currently blending the upper and lower clays to produce a variety of product specifications to meet customer requirements.

The soil and overburden layers over the area vary from 1.5 to 3.0 metres in thickness, and is excavated and used as backfill and soil for final pit reclamation. Andesite forms the base of the



diatomaceous earth sediments. A basalt cap is present in the north east part of the quarry overlying the Upper Clay.

#### **4. Reserves**

Estimated reserves in the pit areas are as follow:

	<u>Upper Clay</u>	<u>Lower Clay</u>	<u>Leonardite</u>
(a) Red Lake pit	10,000 cu.m	31,000 cu.m	35,000 cu.m
(b) West pit	-	-	-
(c) North West Pit	185,000 cu.m	-	80,000 cu.m
(d) Beppele pit	153,000 cu.m	432,000 cu.m	260,000 cu.m
<b>TOTAL</b>	<u>348,000 cu.m</u>	<u>463,000 cu.m</u>	<u>375,000 cu.m</u>

Approximately 10% to 20% of the above clay reserves are reduced by natural outwash of the clay seams or contaminated by overburden during mining extraction. The contaminated clay material is used for reclamation backfill of the site and is directly placed in the mined out areas under reclamation.

#### **5. Mining and Production**

As the deposit is flat lying the clay and overburden is removed by two T.S. 18 scraper machines, Cat D-8 bulldozer, Excavator and Loader. The average mining depth to final excavation of clay reserves throughout the quarry is between 6 to 15 metres. Separate stockpiles are created for the Upper and Lower clay seams of varying qualities before trucking to the Kamloops plant. Leonardite is stockpiled on site for future sales or used in reclamation of the site when blended with soil and overburden.

Drawings Min.1/Min.2 show the updated mining and reclamation progress at December 31, 2011.

During year 2011 some 37,000 cu.metres of Upper Clay and 16,000 cu.metres of Lower Clay were mined. Production from the Red Lake quarry was 53,000 cu.metres (29,700 tonnes). A stockpile of about 10,000 cu.metres of clay is maintained between the minesite and the plant for access during the winter shutdown at the quarry.

In year 2012 mine development will continue with an expected total clay production of between 50,000 to 55,000 cu.metres. During 2012 both Upper Clay and Lower Clay will be mined in the North West Pit and the Beppele Pit together with Leonardite as it occurs in a mineable thickness.

Stockpiled inventory clay on site has been calculated at 70,000 tonnes. Absorbent Products Ltd., produces a wide variety of absorbent granule products from the diatomaceous earth for cat litter, animal barn litter, oil and chemical spills.

## **6. Reclamation**

Reclamation 2011 consisted of removing soil and overburden from the Bepple Pit over an area of 1.0 hectare and placing this material directly into a mined out section of the pit for backfill to final grade.

Table 1 shows the disturbed and reclaimed areas to December 31, 2011.

Table 4 shows the five year projection of anticipated mining and reclamation.

The total backfilled and graded area reclaimed and seeded over all the pits is 23.75 ha, with a further 1.6 ha backfilled but not seeded. Some 18.5 ha can be classed as re-vegetated over the Red Lake quarry property.

The Bepple and North West pits are now being developed as reclamation in the Red Lake and West pits are substantially reclaimed and completed except for an area of 1.7 ha in-situ clay remaining in the east part of the Red Lake pit. This area is overlain by product and overburden stockpiles.

The seed species used in the reclamation program is a Forestland Mix purchased from a Kamloops seed company and is comprised of the following grasses: Orchard Grass 25%, White Clover 5%, Creeping Red Fescue 15%, Crested Wheatgrass 15%, Timothy 10%, Singles Cut Red Clover 5%, Annual Ryegrass 25%.

The seed mix is spread at the rate of 45 lbs – 62.5 lbs per hectare over the reclaimed land on a covering of top soil and Leonardite. To date no fertilizer has been applied with the Forestland Mix and results show a strong vegetation growth over the past six years since seeding began. The vigorous growth is attributed to the high nutrients with the Leonardite and mixed with topsoil. Absorbent Products Ltd., intend to restore the land to grassland pasture. Reclaimed and disturbed areas are sprayed to prevent the invasion of noxious weeds.

All final reclamation slope angles will be less than 2h:1v(27 deg.) with a maximum slope length of 50 metres. Over 90% of the site will be reclaimed to a final slope angle of between 5 to 10 degrees and graded to the natural drainage gully at the west boundary of the Red Lake Quarry.

A visit and inspection of the property was made in October 05, 2011 and photographs were taken prior to the first snowfall and show the vegetation cover and growth over the backfilled and reclaimed areas.



## **7. Reclamation Liability Cost Estimates**

Sequenced mining and reclamation development plans were approved under Permit Q-15-006 in October 2000 and have been followed. Progressive reclamation has been carried out since commencement of backfill and grading in 2001.

WICPL utilize their own earth moving equipment to backfill and grade the mined out areas. The majority of the area requiring backfill and grading is included in the clay production costs if the overburden is being moved as part of the mining process. When overburden is moved separately and stockpiled or pushed into the mined out areas from existing stockpiles, then this cost is separated out as a direct reclamation cost. WICPL have allowed \$8,500 per ha for direct reclamation costs based on previous experience of actual costs at the quarry over the past years. Based on WICPL reclamation cost figures and the amount of un-reclaimed area the current reclamation security bonding of \$70,000.00 is adequate to cover reclamation liability for the total quarry operation.

Overburden including waste clay not suitable for product blending and soil will be removed from the North West and Bepple pits and placed directly in mined out areas for backfill and final reclamation. Total disturbed area at December 31, 2011 is 10.5 ha, which includes roads, stockpiles and mining areas.

## **8. Acid Rock Drainage Potential**

The diatomaceous earth (Fuller's Earth) being worked by WICPL is non-acid generating with a pH of between 6 to 7. Surface water flow is directed towards a natural vegetated gully on the west side of the property and there have been no leaching or other water quality issues on the Red Lake property.

A small settlement pond was constructed in 2005 at the north west corner of the West Pit and a second small pond and collector ditch was constructed in 2010/2011 to collect pit run-off drainage from the North West and West Pits. This water is allowed to settle in the pond and clean water filtrates into the natural gully along the west boundary.



Eric W. Beresford, P.Eng.  
Mining Engineer/Consultant

January 4, 2012

TABLE 1

## SUMMARY OF AREAS DISTURBED AND RECLAIMED TO DECEMBER 31, 2011

COMPANY: ABSORBENT PRODUCTS LTDPERMIT NO.: Q-15-006

DISTURBANCE	MINING		RECLAMATION								LAND USE OBJECTIVE**
	AREA DISTURBED (ha)		AREA RECONTOURED (ha)		AREA SEEDED/PLANTED (ha)		AREA FERTILIZED (ha) * LEONARDITE		AREA REVEGETATED* (ha)		
	2011	TOTAL***	2011	TOTAL***	2011	TOTAL***	2011	TOTAL***	2011	TOTAL***	
WASTE DUMPS	-	-	2.25	4.95	2.25	6.25	2.25	6.25	-	4.0	GRAZING
TAILINGS PONDS	-	-	-	-	-	-	-	-	-	-	PASTURE
PLANT SITE	0.1	0.2	-	-	-	-	-	-	-	-	GRAZING
ROADS	0.4	1.3	-	1.9	0.4	1.0	0.4	1.0	-	-	GRAZING
ADMINISTRATION	-	-	-	-	-	-	-	-	-	-	
PIT	1.0	7.5	2.2	18.5	2.0	16.5	LEONARDITE USED AS FERTILIZER 2.0 16.5		-	14.5	GRAZING PASTURE
STOCKPILES	0.5	1.5	-	-	-	-	-	-	-	-	
LINEAR	-	-	-	-	-	-	-	-	-	-	
OTHER	-	-	-	-	-	-	-	-	-	-	
TOTAL	2.0	10.5	4.45	25.35	4.65	23.75	4.65	23.75	-	18.5	GRAZING PASTURE

EXEMPT e.g., pit high walls	NIL	ha
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\* In order for an area to be recorded as "revegetated" it must have supported vegetation that will lead to the designated land use objective for at least one year.

\*\* Specify land use. Options include: forestry, grazing, wildlife habitat, recreation, agricultural, industrial, residential, and other.

\*\*\* Total up to December 31, 2011



TABLE 4

## FIVE-YEAR PROJECTION OF ANTICIPATED MINING AND RECLAMATION

COMPANY: ABSORBENT PRODUCTS LTDPERMIT NO.: Q-15-006

	MINING						RECLAMATION																	
	AREA DISTURBED (ha)						AREA RECONTOURED (ha)						AREA SEEDED/PLANTED (ha)						AREA FERTILIZED (ha)					
YEAR	2012	13	14	15	16	Total	2012	13	14	15	16	Total	2012	13	14	15	16	Total	2012	13	14	15	16	Total
WASTE DUMPS	-	-	-	-	-	-	-	-	-	-	1.3	1.3	-	-	-	-	1.3	1.3						
TAILINGS PONDS	-	-	-	-	-	-	-	-	-	-	-	-												
PLANT SITE	-	-	-	-	-	-	-	-	-	-	-	-												
ROADS	-	-	-	-	-	1.0	-	0.4	-	-	-	0.4	-	0.4	-	-	-	0.4						
ADMINISTRATION	-	-	-	-	-	-																		
PIT AREAS	1.0	0.5	0.5	1.0	0.5	3.5	1.0	1.0	0.5	1.0	0.5	4.0	1.0	1.0	-	1.0	-	3.0	LEONARDITE USED AS FERTILIZER-MIXED WITH SOIL OVER ALL RECLAIMED AREAS.					
STOCKPILES	0.5	0.5	0.1	-	-	1.2	-	0.2	-	-	0.2	0.4	-	-	0.6	-	-	0.6						
LINEAR (pipelines, powerlines, etc.)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-						
OTHER	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-						
EXEMPT (e.g., pit high walls)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-						
TOTAL	1.5	1.0	0.7	1.0	0.5	4.7	1.0	1.6	0.5	1.0	2.0	6.1	1.0	1.4	0.6	1.0	1.3	5.3						

SITE PHOTOS TAKEN OCTOBER 05,2011





Established grassland on mined out Red Lake and West Pits.





North West Pit –active mining area.



Grading the soil/overburden waste pile-Red Lake Pit.





Backfilling and Reclamation of the Bepple Pit –south west end.







Product stockpiles- Red Lake Pit.



Grading the soil/overburden waste pile-Red Lake Pit.





Established tree shelter group-reclamation area Red Lake Pit.







Cabin on the Bepple Pit used for materials storage .



Bepple Pit –active mining area,south end.





Drainage ditch and collector sump/pond – West Pit.



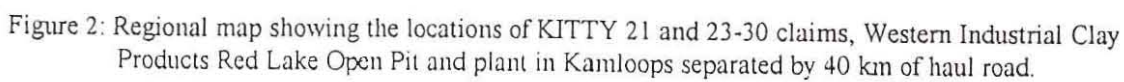




Established grassland, both sides of the haul road.







S.E. 1/4  
(EXCEPT THE EASTERLY 15 CHAINS OF LS 1)

TP 23 R21

90°00'00"  
500.000

KITTY 10  
REC. # 3367919  
TAG # 237411  
LOC. FEBRUARY 23, 1999

Rec or Tenure#  
slb 367919  
KITTY 10

360°00'00"  
496.722

SEE DETAIL A

90°00'55"  
321.670

90°00'55"  
87.145  
90°00'00"  
87.144

KITTY 3

N. 1/2 NE 1/4 SEC 2  
TP 23, R 21, W.6M.

90°00'00"  
346.883

90°02'29"  
44.104

BLOCK A  
SEC 11 TP 23 R 21

**NORTH WEST PIT**

12.0 ha

INITIAL POST  
90°00'57"  
301.623  
KITTY 14

**WEST PIT**

16.0 ha REC. # 218220  
TAG # 117307  
LOC. JANUARY 19, 1989

BLOCK A  
NE 1/4 SEC 2  
TP 23, R 21, W.6M.

179°59'21"  
404.479

KITTY 17  
REC. # 367916  
TAG # 689596 M  
LOC. FEBRUARY 22, 1999  
REC. # 367774  
LOC. FEBRUARY 3, 1999

89°32'42"  
231.542

D. L. 6385

KITTY 14

AREA = 21.4 ha.

REC. # 367913  
TAG # 689593 M  
LOC. FEBRUARY 22, 1999

**BEPPLER PIT**

LCP  
KITTY 10  
KITTY 1  
KITTY 3  
KITTY 4  
KITTY #12

**RED LAKE PIT**

16.0 ha

BLOCK A  
NW 1/4 SEC 1  
TP 23, R 21, W.6M.

**Mining Lease # 310888**

SW 1/4 SEC 12

(EXCEPT THE SW 1/4 OF THE SW 1/4)  
TP 23, R 21, W.6M.

INITIAL POST  
KITTY 16  
KITTY 17

KITTY 16

AREA = 2.68 ha.  
REC. # 367915  
TAG # 689595 M  
LOC. FEB. 22, 1999

SEE DETAIL

INITIAL POST  
KITTY 16

KITTY 15  
AREA = 6.25 ha.  
REC. # 367914  
TAG # 689594 M  
LOC. FEBRUARY 22, 1999

90°00'25"  
362.339

KITTY 1

REC. # 218218 (#8268)  
TAG # 117309  
LOC. JANUARY 19, 1989

BLOCK B  
NW 1/4 SEC 1  
TP 23, R 21, W.6M.

MINERAL TENURE- MINING LEASE #310888

SCALE: 1/5,000



Mine Permit Q - 15 - 006