Parent Company of Canadian Zinc

March 19, 2020

Chris Hotson
Regulatory Manager
Mackenzie Valley Land and Water Board
7th Floor, 4922 48th St.
PO Box 2130
Yellowknife, NT
X1A 2P6

Dear Mr. Hotson:

Re: <u>Water Licence MV2019L2-0006, Prairie Creek Mine</u>
<u>Geochemical Verification Program</u>

Part E, Item 6 of Water License MV2019L2-0006 requires the submission of a Geochemical Verification Program. This requirement is a result of the following, as described in the September 9, 2019 Reasons for Decision: "Due to uncertainty related to potential leachate from waste rock associated with development of the 2nd Decline, GNWT-ENR recommended inclusion of a simple Geochemical Verification Program to confirm and ensure that deposit of the additional waste rock does not result in negative effects".

A simple Geochemical Verification Program (GVP) is attached to this letter, and draws on the results obtained from a similar program carried out for the first decline that was developed under LUP MV2001C0023 and Water Licence MV2001L2-0003, and on project description information for a second decline which was submitted for, and resulted in the issue of, LUP MV2012C0008. The GVP also contains information to address the requirements of MV2019L2-006, Schedule C, item 2.

Sincerely,

David P. Harpley
VP Environment and Permitting Affairs

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WATER LICENCE MV2019L2-0006, PRAIRIE CREEK MINE
GEOCHEMICAL VERIFICATION PROGRAM

1. Introduction

This Geochemical Verification Program (GVP) is for the development of a 2nd underground exploration Decline by Canadian Zinc Corporation (CZN) at the Prairie Creek property. An exploration Decline (the 1st) was previously developed by CZN. A 2nd Decline will be driven in wall rock distant from the mineralized vein and will not intersect mineralization.

2. Project Description

A project description was previously submitted with the permit application. It is reproduced in Attachment 1. This describes the Decline development, geology, the expected waste rock geochemistry based on the 1st Decline, and waste rock and drainage water management.

3. Waste Rock Monitoring

The waste rock will be lacking in sulphide minerals, and previous testing has shown that waste rock has an overwhelming abundance of neutralising minerals (see Attachment 1, Table 1). Full results of monitoring for the 1st Decline are provided in Attachment 2. Note the initial 1st Decline samples (1-1, 1-2) contained a limited amount of sulphides due to proximity to the vein, and because the 1st Decline was collared through the vein for access. This will not be the case for the 2nd Decline. Even so, the initial samples had a neutralization to acid potential (NP/AP) ratio of >40.

As for the 1st Decline, in the 2nd Decline development program, CZN will place rock on a prepared and lined pad on the staging area to the north-west of the 870 Level portal (see Attachment 1, Figures 3 and 4). The rock will be placed in discrete piles on a weekly basis to facilitate the collection of representative, weekly samples. At monthly intervals, these weekly samples will be composited and sent for acid base account (ABA) including paste pH, total sulphur, sulphate sulphur, fizz rating, and NP (using Modified Sobek method by Lawrence) and ICP metals testing. Once testing has confirmed previous geochemical results in terms of an neutralisation potential, and a Neutralization Potential Ratio (NPR) greater than 2, the individual piles will be consolidated to make room for additional waste rock placement. If testing does not confirm this, and the results indicate a potential for leachate generation, testing of the individual weekly piles will be undertaken to segregate and manage the deleterious waste rock separately. As a contingency, this could include taking this rock back underground for storage in a blind heading. Note that this is highly unlikely to be necessary because the 2nd Decline will be developed some distance from the mineralized vein. The same contingency applies in the unlikely event that mineralized rock is encountered in Decline development.

CZN received guidance from MESH Environmental on sampling strategy. CZN will sample rock from each weekly pile based on visual inspection to ensure representivity. The smaller rock fragments will be selected since these have the dominant influence on runoff quality. Fragment size will generally be less than 1-3 cm. Weekly samples will be pulverized and split in the laboratory. One of each of the splits will be composited for analyses. The remaining splits will be retained for potential future use. The weekly piles are expected to consist of up to approximately 1,000 tonnes each. The lithology of all piles will be known from geologic logging of the piles themselves and the locations from which they were produced underground. A log sheet which was developed and used for the 1st Decline is provided in Attachment 3, and will be used for the 2nd Decline. These procedures will be followed and documented by field staff for quality assurance/quality control (QA/QC).

ABA results will be analyzed and interpreted based on guidelines for ARD characterization referenced in the MEND guidelines (Price, 2009). The MEND guidelines state that a sample with an NPR value of less than 1 is classified as potentially acid generating (PAG) or high risk, and as non-potentially acid generating (Non-PAG) if the NPR value is greater than 2 (low risk). Material characterized by an NPR value of between 1 and 2 is classified as Uncertain (moderate risk) and requires additional information to determine ARD potential, including shake flask extraction (SFE) analysis.

If SFE analysis is required, results will be compared against the short-term maximum guidelines of the British Columbia Approved Water Quality Guidelines (BCAWQG-FSTM) and the Canadian Council of Ministers of the Environment (CCME) environmental quality guidelines (CEQG) for the protection of freshwater aquatic life. This comparison will provide a useful metric for evaluating leachable metal concentrations.

Elemental concentrations which exceed the water quality guidelines by less than one order of magnitude are interpreted not to pose a specific risk to the receiving environment, however, may be considered for additional investigation. Elemental concentrations which exceed the water quality guideline by greater than one order of magnitude, are interpreted to have some potential for risk and should be considered for further investigation.

4. Waste Rock Water Management

The waste rock will be placed on a prepared and lined pad. The pad will be sloped to a sump for seepage collection and monitoring. The seepage from the 1st Decline waste rock pile had a good water quality, with total zinc concentrations in a range 0.25-0.61 mg/L (see Attachment 2, last page). The higher zinc concentrations, which occurred early in the 1st Decline development program, were likely a reflection of the limited amount of sulphides in the initial waste rock samples. Seepage from 2nd Decline waste rock is expected to be of better quality. Before this is proven, the seepage will be routed to the existing water treatment system and Polishing Pond. The quantity of seepage will be small in comparison to mine water flow.

CZN plans to initially sample rock pile seepage collecting in the sump weekly, at the same time as, and using the same methods (including QA/QC) as, sampling for the Water Licence Surveillance Network Program (SNP). Samples will be subjected to a 25 element ICP total metals scan. If scans during the first month confirm that all metal concentrations are less than the requirements listed in Part E, Condition 16 of the License, CZN will discharge the seepage directly to the existing Catchment Pond, and relax sampling to a monthly interval. If necessary, the contingency is to continue to route pad seepage to the treatment plant. If pad seepage has persistently elevated metals concentrations, which is highly unlikely, the waste rock on the pad can be capped after Decline completion to limit seepage production.

It should be noted that any unexpected seepage from the staging area hosting the waste rock pad would report to the Catchment Pond, and discharge from the Pond is monitored at SNP Station 3-5.

5. Decline Water Management

As noted in the project description in Attachment 1, drainage water from the new Decline will be pumped up to the 880 m level and delivered to the point of treatment of water leaving the 870 portal. Sumps will be created along the new Decline as it is developed to allow for multi-stage pumping with reduced ‘head’, and to settle out sediment.

The new Decline water is expected to have low metal concentrations, just as the previous Decline water did. The best indication of Decline water quality during development is provided by data obtained from sampling during a 2014-2015 pump test program. The results are provided in Attachment 4. The program involved dewatering of the flooded 1st Decline, opening of some existing boreholes to allow artesian flow, and pumping of the drainage while monitoring water levels in adjacent instrumented boreholes. Grab samples from the Decline describe an improvement of the already good water quality as dewatering and drainage progressed. This is because the water contributions from boreholes in drill stations DS-1 to DS-5 declined while contributions from DS-6 and DS-7 boreholes increased (see the figures in Attachment 1 for DS locations). DS-6 and DS-7 boreholes intersect the deeper ‘upstream’ parts of the vein with much less influence from oxidation. The 2nd Decline will host the drilling of boreholes from the deeper upstream parts of the vein, therefore Decline water quality is expected to resemble that encountered in the 1st Decline in February 2015. This water quality is not expected to require treatment to meet EQC, however if treatment is required, the demand for sulphide is expected to be less than previously. With treatment occur or not, the water would be sent to the existing Polishing Pond to settle out sediment.

CZN plans to sample Decline drainage weekly, at the same time as, and using the same methods (including QA/QC) as, sampling for the Water Licence SNP. The sampling location will depend on the location of drainage discharge. If the water is discharged into the 880 level adit, samples will be collected at the point of discharge prior to intermingling with drainage from the old workings. If the Decline water is carried by pipeline to the 870 portal, it will be sampled there. Samples will be tested for ICP dissolved metals. Note that total metals concentrations will be adversely skewed by suspended sediment, and that total metals concentrations would be determined on the discharge from the Polishing Pond (SNP Station 3-4).

Water with elevated metals concentrations in the Decline can only occur if mineralized water is emanating from boreholes connected to the vein. As explained above, this is highly unlikely since the planned boreholes will be intersecting the deeper, un-oxidized portions of the vein. As a contingency, these boreholes can be capped to prevent flow if necessary.

6. Conformity with Schedule C, Item 2

Requirement	Section
Criteria for defining PAG, non-PAG and Metal Leaching materials with supporting rationale	3
Criteria for defining high, moderate, and low risk Waste Rock with supporting rationale	3
Sampling and testing methods for the Geochemical Verification Program (including Waste Rock, Waste Rock Pile Seepage, and any new inflow to the mine workings) with supporting rationale	3, 4, 5
Sampling locations and collection methodology for follow-up verification testing with supporting rationale	3, 4, 5
Sampling	3, 4, 5
Timing and frequency of verification sampling	3, 4, 5
Quality assurance and quality control measures	3, 4, 5
A contingency plan in the event of increasing trends in Metal Leaching or acid generation potential	3, 4, 5

Attachment 1

Parent Company of Canadian Zinc

April 22, 2019

PROJECT DESCRIPTION

PRAIRIE CREEK MINE
2nd DECLINE UNDERGROUND DEVELOPMENT
AND EXPLORATION DRILLING

Type "A" Land Use Permit Application

Overview

Since acquiring the Prairie Creek Mine in 1991, Canadian Zinc Corporation (CZN) has conducted numerous diamond drill programs on the property. The Company's drilling focus up to 2006 was primarily on Zone 3 in the immediate mine site area, where 80% of the total exploratory work has been carried out.

In 1992, a stratabound form of mineralization was discovered underlying the vein-type deposits of Zone 3 while drilling to extend these vein resources at depth. Up to six mineralized stratabound lenses have been intersected varying in thickness from between less than one metre to several metres in thickness. Total thickness of the stratabound zone reaches up to 28 m. The stratabound deposits are located at around the 600 – 650 m elevation, 200 – 350 m below the existing underground workings and 400 m below the surface of the ground.

As a result of the exploration drilling undertaken by CZN up to 2007, the mineral resource was revised to 11.4 million tonnes grading 10.6% lead, 12.1% zinc, 0.4% copper and 187 g/tonne silver. Of this resource, approximately 80% is comprised of vein-type mineralization and only 12% is stratabound mineralization.

As part of the ongoing process of establishing, confirming and enhancing the known mineral resource at the Prairie Creek property, CZN developed an exploration decline in 2006-2007 to permit access for underground exploration drilling of the stratabound deposit underlying the Zone 3 quartz vein mineralization.

In 2012, CZN proposed to develop a second decline to allow underground exploration drilling of the stratabound mineralization further to the south, as well as vein mineralization in the deeper portions of the Zone 3 area. This would improve confidence in the existing resources. The proposed Decline would allow drilling to be conducted from underground about 200 m above the stratabound, as compared to drilling from surface which would require approximately 450 m long holes, resulting in a substantial saving in drilling costs. CZN obtained a LUP for this work, but did not use it. CZN now wishes to obtain a replacement LUP for the same work to retain the option of proceeding with the work in the event that mining operations do not commence in the near future as planned.

Location

The Decline development would take place within 1000 m of the existing mine site facilities and within the area of traditional mining activity at Prairie Creek and the boundaries of Mining Lease 2932 and Surface Lease 95F10/10-5-3.

Exploration work and drilling would be carried out entirely underground, with the only surface impact being the deposit of the development waste from the Decline and drill station excavations. No new portal will be required, similar to the previous program. The new Decline would be established to the north-west of the existing 870 Level (see plan view in Figure 1), and access to the new Decline would be gained underground from that level. There are a number of reasons for this proposed route and location:

- Development rock can be readily integrated with the existing pile from the previous decline program located on the 870 level staging area
- Drainage water can be readily pumped up to the 880 level and then delivered to the existing point of treatment of 870 portal water
- Development rock will be benign since the tunnel will be entirely in the footwall of, and distant from, the mineralization.

The location of the Decline is shown in long-section in Figure 1 in relation to the target zone of the proposed exploration. The underground exploration development would be of similar scope to the 2006/2007 work.

Geology and Development Rock

As noted above, the new Decline would be located north-west of the existing 870 Level adit. This is shown in cross-section in Figure 2. The intent is to keep the development sufficiently distant from the Vein to ensure the rock is benign. However, this would be confirmed with representative rock sampling and testing for ABA/metals, and leachate collection and analysis for metals, as was done for the existing Decline.

The rocks that the exploration decline would be driven in are very similar to those of the previous decline. Carbonate limestones and shales of the Whittaker and Lower Road River Formations are projected to occur in the area of the new tunnel. The occurrence of the specific rock units are verified through wide spaced surface diamond drilling and underground mapping. The new Decline would not crosscut the main vein mineralization, but lie wholly within the footwall of the vein mineralization. Therefore, no mineralized material would be excavated and brought to surface.

Development waste rock from the new Decline would be stored on the 870 Level portal staging area with the rock from the previous program. Figures 3 and 4 show in plan and section how the staging area and rock storage ‘pad’ look now and how they will look after the proposed program. The existing pad would be enlarged by placing compacted soil over an extension area. The height of the existing rock pile will then be reduced by spreading the rock over the enlarged pad, followed by compaction. The rock will then be capped with a synthetic liner, with liner protection. The liner will ‘cap’ the existing pile and also form the base of the new pile. The liner will be sloped to a leachate collection sump. Leachate will flow from the sump in a pipeline to the present point of treatment of 870 Level water, either by gravity or by pumping.

Geochemical data from the previous program confirmed that the rock formations distant from the Vein are essentially benign and not a significant source of leachable metals. The data in Table 1 confirms this. Geochemical data are provided for samples of rock from the existing Decline. Figure 5 shows the location of the rock in the Decline that the samples were derived from. The rock was from the Road River Formation, composed of shale and argillaceous dolostone. Rock from the new decline development would be a comparable distance from the Vein and would have similar geochemistry.

Drainage Water

Drainage water from the new Decline will be pumped up to the 880 m level and delivered to the present point of treatment of water leaving the 870 portal. Sumps may be created along the new Decline as it is developed to allow for multi-stage pumping with reduced ‘head’, and to settle out sediment. However, experience from the previous underground program indicates that it is preferable to have a turbid flow of water entering the water treatment culvert. This is because the existing sulphide treatment process, while efficient at removing dissolved metals, produces fine sediment that is difficult to settle. Turbid water in the influent stream provides nuclei for the fine sediment to coagulate and settle. Metal concentrations in treated water after sulphide treatment were consistently lower during the period of Decline development.

The demand for sulphide is not expected to be significantly different from the present because the new Decline water is expected to have low metal concentrations, just as the previous Decline did.

Treated water would be sent to the existing Polishing Pond for sediment to settle out. Construction of the pond was a requirement of the existing Water Licence.

Surface Facilities

No new surface facilities would be required to support the proposed underground exploration program. The existing camp, fuel storage and service facilities, presently in use for site ‘care and maintenance’ activities, are sufficient and adequate for the tasks required. Domestic water is supplied from an existing well, garbage is incinerated. The project would require a moderate increase in personnel on-site, as before. Sufficient accommodation is available. The existing equipment fleet at the site will be used, although one or two pieces of specialized underground equipment may be brought in.

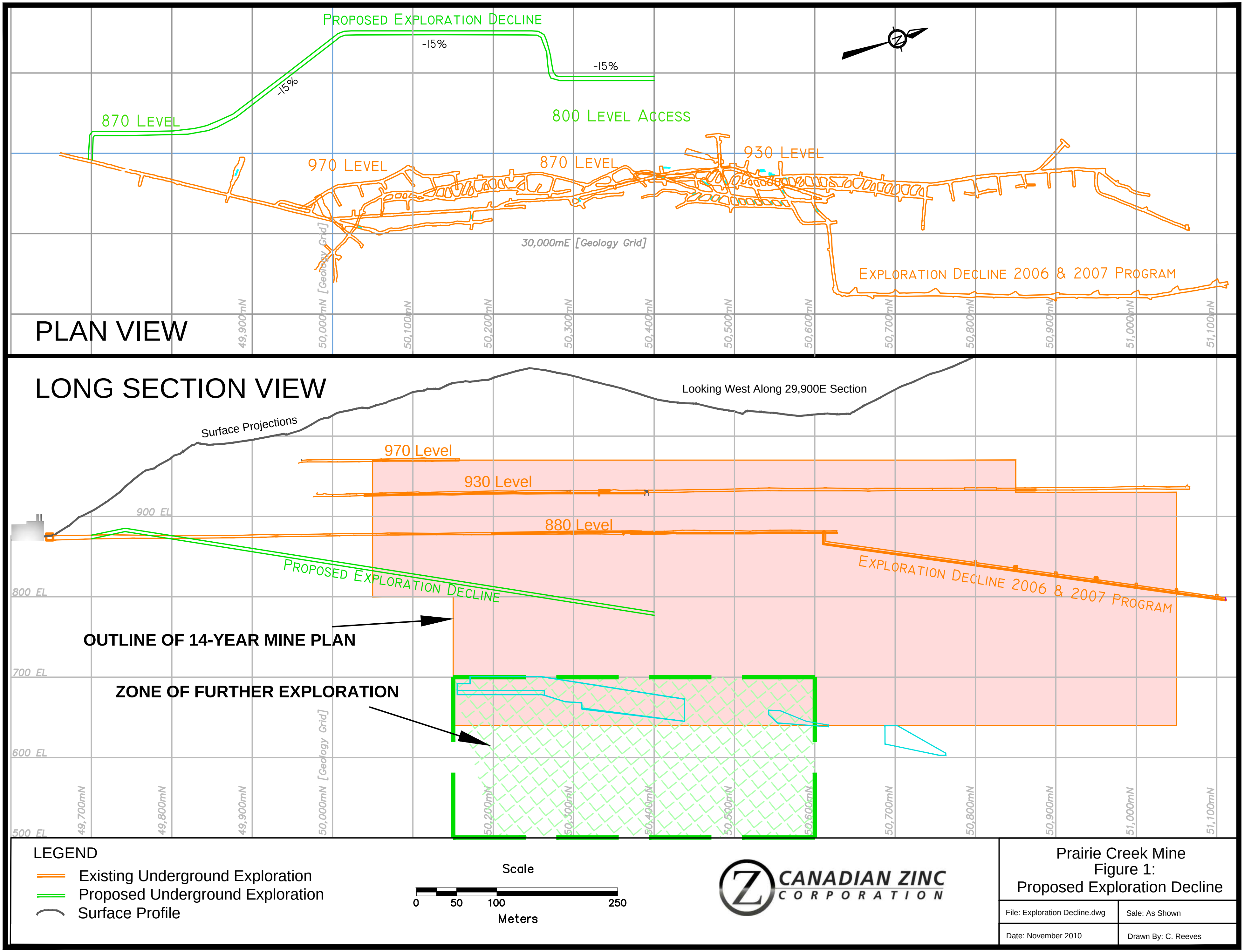
TABLE 1: EXISTING DECLINE ROCK GEOCHEMISTRY

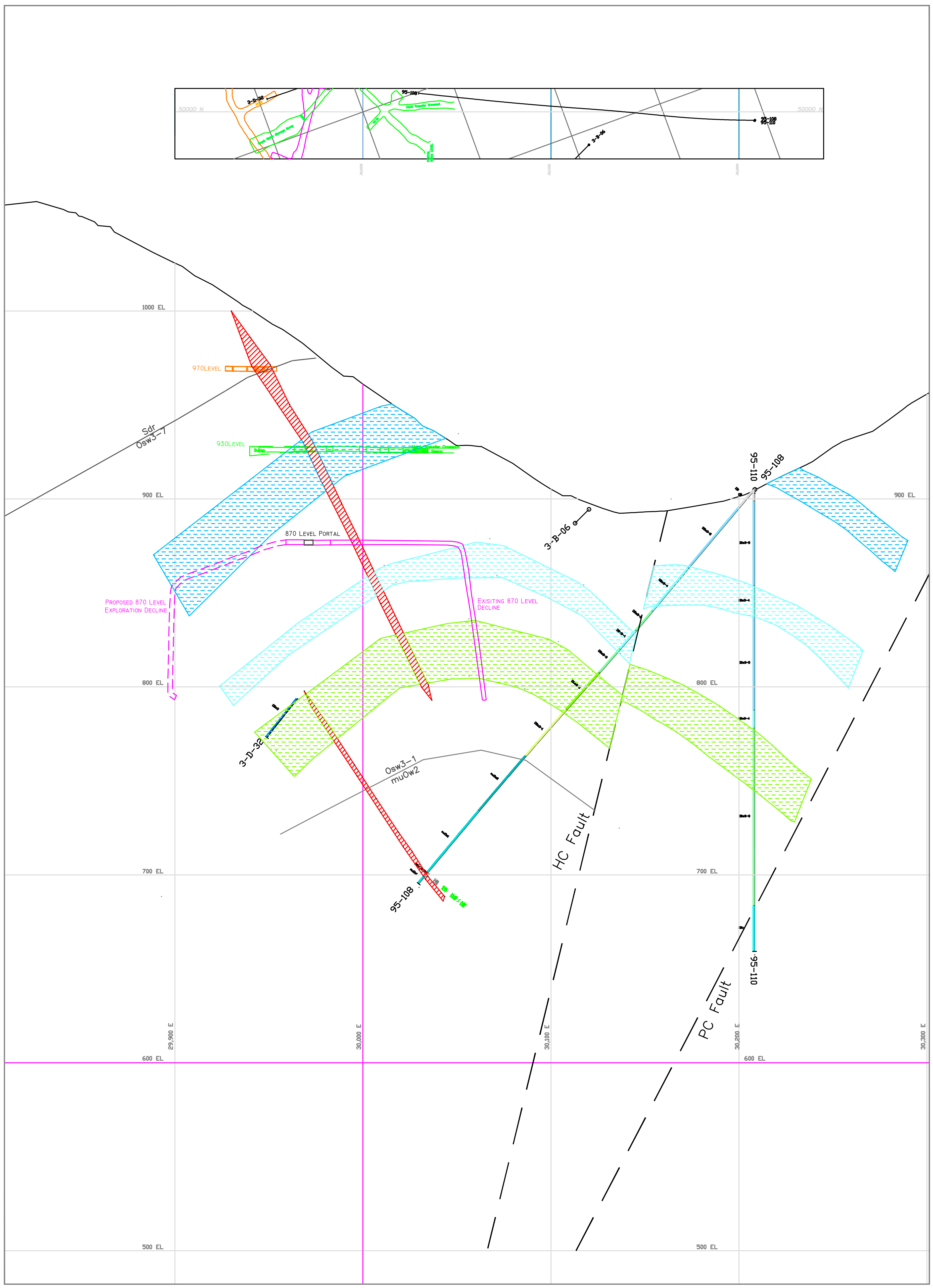
Sample ID	Cd ppm	Pb ppm	Zn ppm	Paste pH	Sulphur (T) %	AP	NP	Net NP
3-1	6	318	693	8.3	0.24	4.7	793.8	789.1
3-2	3	58	235	8.9	0.3	7.2	761.3	754.1
3-3	1	32	142	8.1	0.31	7.8	727.5	719.7
3-4	3	61	271	8.6	0.29	6.9	701.3	694.4
4-1	6	349	722	8.15	0.4	11.3	584.8	573.6
4-2	7	361	817	8.26	0.39	10.9	633.6	622.7
4-3	3	133	325	8.27	0.36	10.3	586.2	575.9
4-4	4	206	435	8.22	0.38	10.6	578.5	567.9
4-4A	3	189	391	8.25	0.39	11.3	573.5	562.3
5-1	2	92	186	8.16	0.28	8.1	776.9	768.8
5-2	2	143	209	8.30	0.19	5.0	781.3	776.3
5-3	4	106	276	7.86	0.26	7.2	757.5	750.3
5-5	5	262	521	8.22	0.25	7.2	750.0	742.8
6-1	1.3	73.5	136	8.31	0.3	9.4	836.5	827.1
6-2	1.9	86.3	186	8.45	0.29	9.1	849.5	840.4
6-3	2.5	137.9	282	8.46	0.32	10.0	848.8	838.8
6-4	6.9	309.7	781	8.27	0.35	10.9	669.4	658.5

AP = Acid potential in tonnes CaCO3 equivalent per 1000 tonnes of material.

NP = Neutralization potential in tonnes CaCO3 equivalent per 1000 tonnes of material.

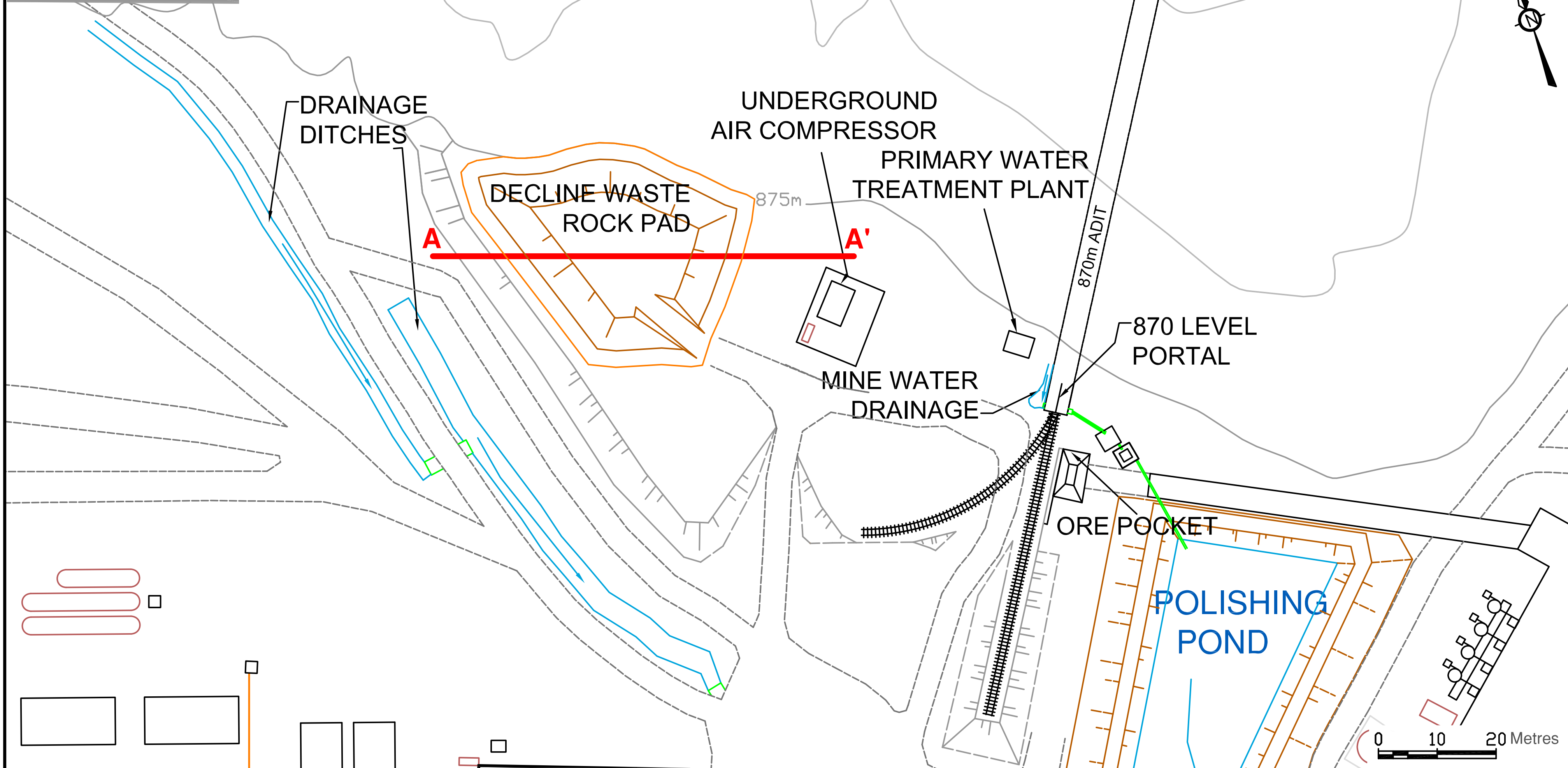
NET NP = NP - AP


PLAN VIEW
Proposed Exploration Decline
-15%
-15%
-15%
870 Level
800 Level Access
970 Level
870 Level
930 Level
30,000mE [Geology Grid]
Exploration Decline 2006 & 2007 Program
49,900mN
50,000mN [Geology Grid]
50,100mN
50,200mN
50,300mN
50,400mN
50,500mN
50,600mN
50,700mN
50,800mN
50,900mN
51,000mN
51,100mN
LONG SECTION VIEW
Looking West Along 29,900E Section
Surface Projections
970 Level
930 Level
880 Level
900 EL
800 EL
700 EL
600 EL
500 EL
Proposed Exploration Decline
Exploration Decline 2006 & 2007 Program
OUTLINE OF 14-YEAR MINE PLAN
ZONE OF FURTHER EXPLORATION
49,700mN
49,800mN
49,900mN
50,000mN [Geology Grid]
50,200mN
50,300mN
50,400mN
50,500mN
50,600mN
50,700mN
50,800mN
50,900mN
51,000mN
51,100mN
LEGEND
Existing Underground Exploration
Proposed Underground Exploration
Surface Profile
Scale
0
50
100
250
Meters
CANADIAN ZINC CORPORATION
Prairie Creek Mine
Figure 1:
Proposed Exploration Decline
File: Exploration Decline.dwg
Sale: As Shown
Date: November 2010
Drawn By: C. Reeves

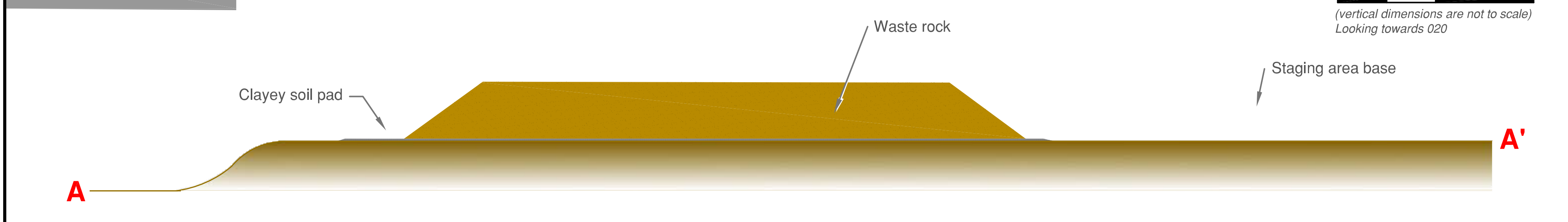


CANADIAN ZINC CORPORATION			PRAIRIE CREEK PROJECT SECTION 50000 NORTH
Date:	September, 2000	0 25 50 75 100 metres	Figure 2: Cross-Section Showing Proposed Decline
Drawn By:	C. Reeves		
Revised:	May, 2011		
Scale:	1:2000		
Drawing:	50000N.dwg		

Plan view



Section A-A'

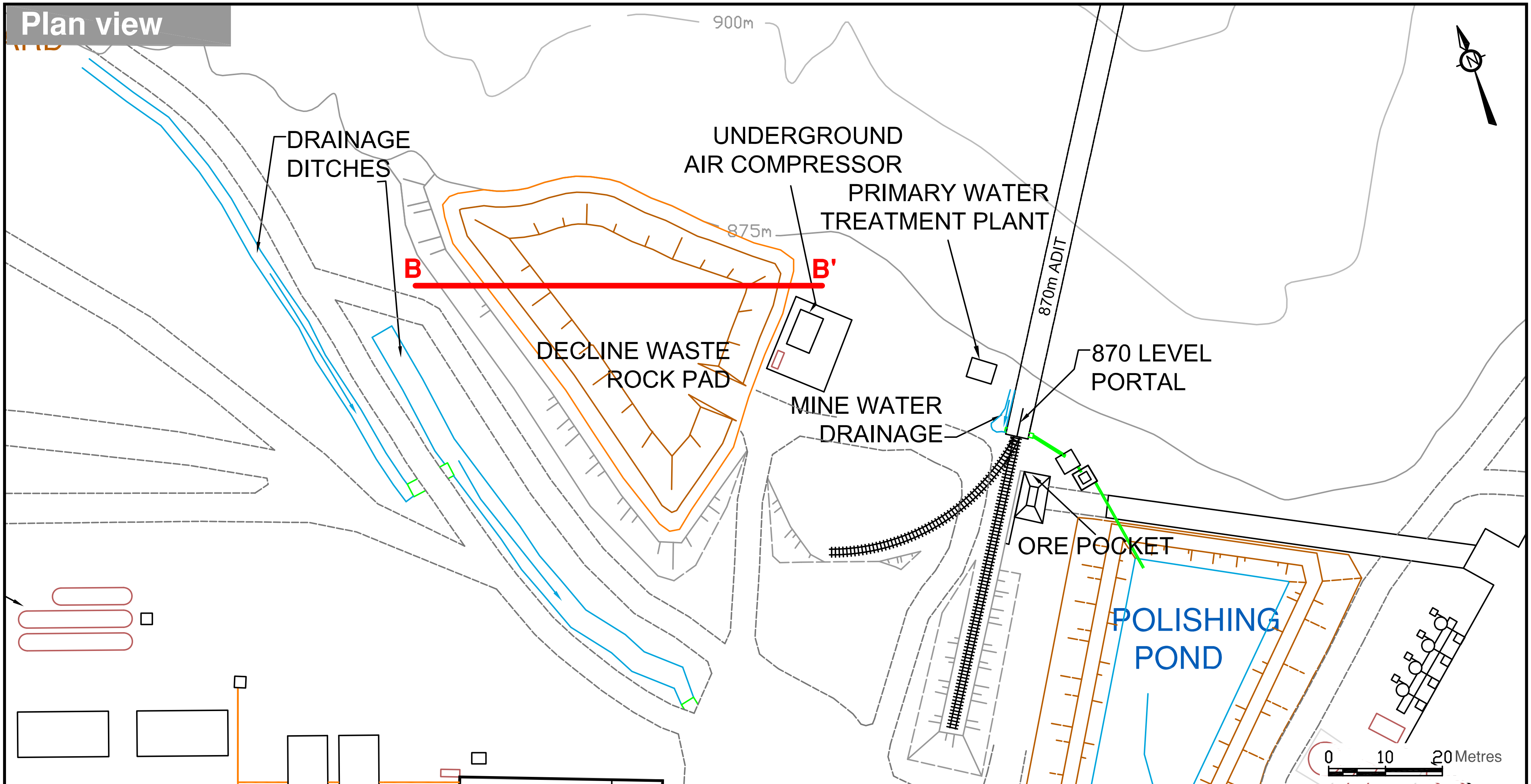


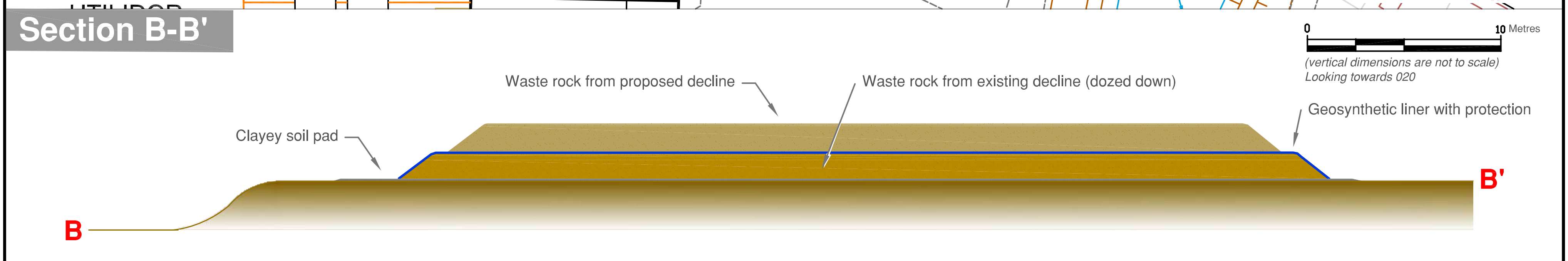
CANADIAN ZINC CORPORATION

Date:	April 2011
Drawn By:	K. Cupit
Scale:	As Shown
Drawing:	Existing decline waste rock pad 1-2.dwg

Prairie Creek Mine

Existing Decline Waste Rock Pad



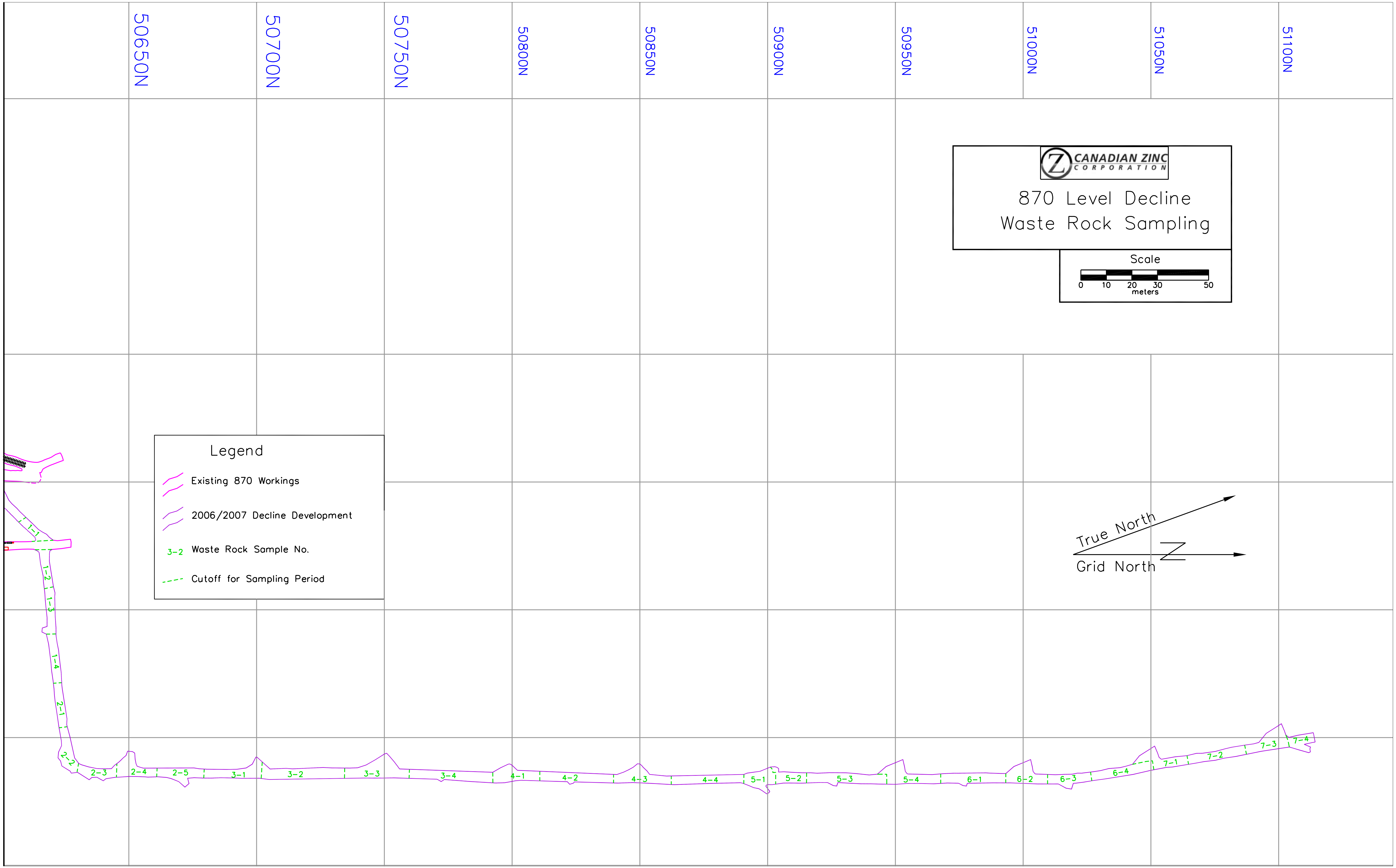


CANADIAN ZINC CORPORATION

Date:	April 2011
Drawn By:	K. Cupit
Scale:	As Shown
Drawing:	Proposed decline waste rock pad 1–2.dwg

Prairie Creek Mine

Proposed Decline Waste Rock Pad



50650N
50700N
50750N
50800N
50850N
50900N
50950N
51000N
51050N
51100N
CANADIAN ZINC CORPORATION
870 Level Decline
Waste Rock Sampling
Scale
0
10
20
30
50
meters
Legend
Existing 870 Workings
2006/2007 Decline Development
3-2 Waste Rock Sample No.
Cutoff for Sampling Period
True North
Grid North
1-1
1-2
1-3
1-4
2-1
2-2
2-3
2-4
2-5
3-1
3-2
3-3
3-4
4-1
4-2
4-3
4-4
5-1
5-2
5-3
5-4
6-1
6-2
6-3
6-4
7-1
7-2
7-3
7-4

Attachment 2

CANADIAN ZINC CORPORATION

November 6, 2006

Meg McKluskie
Regulatory Officer
Mackenzie Valley Land and Water Board
7th Floor-4910 50th Avenue,
Yellowknife, NT
X1A 2P6

Dear Ms. McKluskie:

Re: **<u>Report of Waste Rock Pile Monitoring Data, August and September, 2006</u>**
<u>Water License MV2001L2-0003</u>

This letter reports results for the Waste Rock Pile located on a lined pad near the 870 Level portal.

As you know, the rock pile is being created by the placement of rock from development of a new decline from the 870 Level adit. Rock from the development is being placed on a prepared pad. A representative sample of the rock is collected weekly for testing. The pad also has a collection sump for pad runoff. A water sample is also collected from the sump weekly.

The attached figure shows the new decline as it exists at present. The figure also shows the segments of the decline from which the weekly rock samples were created. A weekly rock pile is created on the surface pad prior to sampling. A sample is collected by taking grabs of the finer material from multiple locations around the weekly pile. Rock samples are sent monthly to Canadian Environmental and Metallurgical Inc. (CEMI) in Burnaby, BC. Water samples are sent weekly with SNP samples to Maxxam Analytics, also of Burnaby.

Results for August and September samples are given in the attached tables. There were four weekly rock samples plus a duplicate for August, but only one water sample. The sump was dry until the end of the month. There were five weekly rock samples plus a duplicate for September, and five weekly water samples. The tables also contain information on weekly pile rock type and occurrence of sulphides.

The results show that all weekly rock piles have an abundance of neutralisation capacity, and based on the ratio of neutralisation potentials to acid potentials (NP/AP) always being in excess

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of 40:1, all piles are non-acid generating. The first two samples (1-1 and 1-2) closest to the vein had slightly higher sulphur contents, and correspondingly higher metal concentrations, notably lead and zinc. The rock from which these piles were generated does not host significant mineralization, and the elevated metal concentrations are surprising to us. It is possible that the piles contain some 'contamination' from material in the vein area. Alternatively or as well, the method of pile sampling (collection of fines) may have contributed to the results. We are considering doing some channel sampling from the walls of the decline to correlate with the pile samples, and determine whether the pile samples are indeed representative.

Results for sump samples show no indication of significant metal-bearing leachate. This is perhaps not surprising since precipitation over the period was low, and there was no, or very little, runoff. This trend has continued up to and including the onset of freezing conditions.

All rock from the new decline remains on the pad near the 870 Level portal. Decline development is expected to be completed for this year in another 2 weeks.

If you have any questions, please do not hesitate to contact us.

Yours truly,

David P. Harpley, P. Geo.
Environmental Coordinator
Canadian Zinc Corp.

cc. Alan Taylor CZN
Troy Searson DIAND

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E-mail:alan@canadianzinc.com, Website: www.canadianzinc.com

PROJECT : Canadian Zinc, Prairie Creek **August**
CEMI Project : 0571

Modified Acid-Base Accounting

Sample ID	Paste pH	S(T) %	S(SO4) %	S(S-2) %	AP	NP	Net NP	NP/AP Ratio	Fizz Test	Rock Type	Visible Sulphides
1-1	9.6	0.51	0.02	0.49	15.3	814.9	799.6	53.2	Strong	Road River Fn*	Few %
1-2	9.3	0.66	0.02	0.64	20.0	864.7	844.7	43.2	Strong	Road River Fn*	Few %
1-3	9.7	0.14	<0.01	0.14	4.4	901.1	896.7	206.0	Strong	Road River Fn*	Trace
1-4	9.4	0.07	<0.01	0.07	2.2	890.2	888.0	406.9	Strong	Road River Fn*	Trace
Duplicates											
1-1	9.6	0.51	0.02			819.8			Strong		

Note:

* Shale and Argillaceous Dolostone

AP = Acid potential in tonnes CaCO3 equivalent per 1000 tonnes of material. AP is determined from calculated sulphide sulphur content: S(T) - S(SO4).

NP = Neutralization potential in tonnes CaCO3 equivalent per 1000 tonnes of material. NET NP = NP - AP

Metals by Aqua Regia Digestion with ICP Finish

Sample ID	Ag ppm	Al %	As ppm	Ba ppm	Be ppm	Bi ppm	Ca %	Cd ppm	Co ppm	Cr ppm	Cu ppm	Fe %
1-1	25.4	0.2	87	122	<0.5	<5	>15.0	153	1	35	517	0.54
1-2	16.6	0.16	81	65	<0.5	<5	>15.0	136	2	18	503	0.61
1-3	3.3	0.14	30	52	<0.5	<5	>15.0	32	2	12	78	0.64
1-4	0.5	0.14	17	36	<0.5	<5	>15.0	7	2	10	5	0.67

Sample ID	Hg ppm	K %	La ppm	Mg %	Mn ppm	Mo ppm	Na %	Ni ppm	P ppm	Pb ppm	S %	Sb ppm
1-1	97	0.11	<10	9.06	344	7	0.03	13	233	>10000	0.64	177
1-2	70	0.09	<10	9.48	189	8	0.02	14	205	6806	0.86	176
1-3	13	0.08	<10	9.66	276	11	0.02	12	209	2071	0.2	34
1-4	3	0.09	<10	10.22	320	11	0.02	13	164	402	0.1	9

Sample ID	Sc ppm	Sr ppm	Th ppm	Ti %	Tl ppm	U ppm	V ppm	W ppm	Zn ppm	Zr ppm
1-1	1	76	5	<0.01	<10	122	46	<10	>10000	6
1-2	1	70	<5	<0.01	<10	122	45	<10	>10000	6
1-3	1	76	5	<0.01	<10	133	36	<10	4223	6
1-4	1	72	9	<0.01	<10	139	39	<10	841	6

Collection Pond Water Sample

Al	Sb	As	Ba	Be	Bi	B	Cd	Ca	Cr	Co	Cu
0.07	<0.05	<0.05	0.037	<0.0002	<0.05	<0.008	<0.002	15.9	<0.005	<0.005	<0.005
Fe	**Pb**	**Mg**	**Mn**	**Mo**	**Ni**	**P**	**K**	**Se**	**Si**	**Ag**	**Na**
0.06	<0.03	3.17	0.004	<0.005	<0.008	<0.1	<1	<0.03	0.38	<0.01	0.67
Sr	**S**	**Tl**	**Sn**	**Ti**	**V**	**Zn**	**Zr**				
0.03	1.3	<0.03	<0.02	<0.003	<0.005	0.04	<0.005				

Modified Acid-Base Accounting

Sample ID	Paste pH	S(T) %	S(SO4) %	S(S-2) %	AP	NP	Net NP	NP/AP Ratio	Fizz Test	Rock Type	Visible Sulphides
# 2-1	9.0	0.14	0.01	0.13	4.1	834.8	830.7	205.5	Strong	Road River Fn*	Trace
# 2-3	9.1	0.24	<0.01	0.24	7.5	761.9	754.4	101.6	Strong	Road River Fn*	Trace
# 2-4	9.2	0.22	0.06	0.16	5.0	804.5	799.5	160.9	Strong	Road River Fn*	Trace
# 2-5	9.1	0.15	0.05	0.1	3.1	968.5	965.4	309.9	Strong	Road River Fn*	Trace
# 2-21	8.9	0.22	0.03	0.19	5.9	709.4	703.5	119.5	Strong	Road River Fn*	Trace
# 2-22	9.1	0.27	0.05	0.22	6.9	732.1	725.2	106.5	Strong	Road River Fn*	Trace
Duplicates											
# 2-1	-	0.13	0.03	-	-	-	-		-		
# 2-22	9.0	-	-	-	-	737.2	-		Strong		

Note:

* Shale and Argillaceous Dolostone

AP = Acid potential in tonnes CaCO3 equivalent per 1000 tonnes of material. AP is determined from calculated sulphide sulphur content: S(T) - S(SO4).

NP = Neutralization potential in tonnes CaCO3 equivalent per 1000 tonnes of material. NET NP = NP - AP

Metals by Aqua Regia Digestion with ICP Finish

Sample ID	Ag ppm	Al %	As ppm	Ba ppm	Be ppm	Bi ppm	Ca %	Cd ppm	Co ppm	Cr ppm	Cu ppm	Fe %
# 2-1	1.2	0.13	19	45	<0.5	<5	>15.0	11	2	11	50	0.62
# 2-3	3.2	0.16	24	54	<0.5	<5	>15.0	29	2	27	101	0.71
# 2-4	3.4	0.15	25	37	<0.5	<5	>15.0	18	3	18	82	0.68
# 2-5	<0.2	0.14	14	21	<0.5	<5	>15.0	3	2	21	19	0.54
# 2-21	2.3	0.16	15	45	<0.5	<5	>15.0	13	3	16	47	0.65
# 2-22	1.4	0.15	12	38	<0.5	<5	>15.0	9	2	13	43	0.61

Sample ID	Hg ppm	K %	La ppm	Mg %	Mn ppm	Mo ppm	Na %	Ni ppm	P ppm	Pb ppm	S %	Sb ppm
# 2-1	2	0.09	<10	5.04	202	10	0.01	12	221	741	0.2	14
# 2-3	9	0.1	10	5.6	170	9	0.02	19	577	1756	0.29	28
# 2-4	7	0.1	10	8.03	166	9	0.02	18	803	2198	0.29	28
# 2-5	<1	0.1	11	8.28	125	8	0.02	15	1048	132	0.21	<5
# 2-21	4	0.12	14	2.55	104	9	0.02	25	298	1490	0.29	9
# 2-22	1	0.11	14	2.61	98	10	0.01	14	613	1158	0.29	12

Sample ID	Sc ppm	Sr ppm	Th ppm	Ti %	Tl ppm	U ppm	V ppm	W ppm	Zn ppm	Zr ppm
# 2-1	1	269	8	<0.01	<10	132	23	<10	1347	5
# 2-3	2	209	9	<0.01	<10	118	20	<10	4032	6
# 2-4	2	125	9	<0.01	<10	118	18	<10	2371	7
# 2-5	1	117	7	<0.01	<10	112	9	<10	379	5
# 2-21	2	277	12	<0.01	<10	137	26	<10	1861	6
# 2-22	2	272	11	<0.01	<10	135	26	<10	1088	6

…

Collection Pond Water Samples **September**

	Al	Sb	As	Ba	Be	Bi	B	Cd	Ca	Cr	Co	Cu	Fe	Pb	Mg	Mn
Sep 4	0.2	<0.05	<0.05	0.024	<0.0002	<0.05	<0.008	<0.002	9.25	<0.005	<0.005	<0.005	0.228	<0.03	2.2	0.009
Sep 11	0.3	<0.05	<0.05	0.027	<0.0002	<0.05	<0.008	<0.002	12.6	<0.005	<0.005	<0.005	0.197	<0.03	2.42	0.004
Sep 20	0.15	<0.05	<0.05	0.023	<0.0002	<0.05	<0.008	<0.002	11.4	<0.005	<0.005	<0.005	0.086	<0.03	2.37	0.002
Sep 26	0.16	<0.05	<0.05	0.025	<0.0002	<0.05	<0.008	<0.002	13.6	<0.005	<0.005	0.008	0.196	0.03	2.77	0.005
Oct 2	0.21	<0.05	<0.05	0.029	<0.0002	<0.05	<0.008	<0.002	14.9	<0.005	<0.005	0.006	0.165	<0.03	2.92	0.004
	Mo	**Ni**	**P**	**K**	**Se**	**Si**	**Ag**	**Na**	**Sr**	**S**	**Tl**	**Sn**	**Ti**	**V**	**Zn**	**Zr**
Sep 4	<0.005	<0.008	<0.1	1	<0.03	0.44	<0.01	0.38	0.015	0.8	<0.03	<0.02	<0.003	<0.005	0.081	<0.005
Sep 11	<0.005	<0.008	<0.1	<1	<0.03	0.65	<0.01	0.25	0.019	1	<0.03	<0.02	<0.003	<0.005	0.05	<0.005
Sep 20	<0.005	<0.008	<0.1	<1	<0.03	0.39	<0.01	0.79	0.019	1	<0.03	<0.02	<0.003	<0.005	0.045	<0.005
Sep 26	<0.005	<0.008	<0.1	1	<0.03	0.4	<0.01	0.85	0.026	3.5	<0.03	<0.02	<0.003	<0.005	0.077	<0.005
Oct 2	<0.005	<0.008	<0.1	<1	<0.03	0.48	<0.01	1.82	0.025	3.3	<0.03	<0.02	<0.003	<0.005	0.077	<0.005

All results mg/L

April 20, 2006

Peter Lennie-Misgeld
Senior Regulatory Officer
Mackenzie Valley Land and Water Board
7th Floor-4910 50th Avenue,
Yellowknife, NT
X1A 2P6

Dear Mr. Lennie-Misgeld:

**Re: Report of Waste Rock Pile Monitoring Data, October and November, 2006
Water License MV2001L2-0003**

This letter reports results for October and November, 2006 for the Waste Rock Pile located on a lined pad near the 870 Level portal. Please note that the reporting of these results is later than we would prefer because there was a misunderstanding with the laboratory regarding the November samples, the samples were put aside and not tested immediately.

Background

As you know, the rock pile is being created by the placement of rock from development of a new decline from the 870 Level adit. Rock from the development is being placed on a prepared pad. A representative sample of the rock is collected weekly for testing. The pad also has a collection sump for pad runoff. The intention is to collect a water sample from the sump weekly.

The attached figure shows the new decline as it exists at present. The figure also shows the segments of the decline from which the weekly rock samples were created. A weekly rock pile is created on the surface pad prior to sampling. A sample is collected by taking grabs of the finer material from multiple locations around the weekly pile. Rock samples are sent monthly to Canadian Environmental and Metallurgical Inc. (CEMI) in Burnaby, BC. Water samples are sent weekly with SNP samples to Maxxam Analytics, also of Burnaby.

Results

Results for October and November samples are given in the attached table. There were four weekly rock samples for October, and five for November, plus a duplicate for each month. There was no water samples since freezing conditions prevailed throughout the period. The table also contains information on weekly pile rock type and occurrence of sulphides.

The results show that all weekly rock piles have an abundance of neutralisation capacity, and based on the ratio of neutralisation potentials to acid potentials (NP/AP) always being in excess of 50:1, all piles are non-acid generating. All sulphur contents are less than 0.4%.

All rock from the new decline remains on the pad near the 870 Level portal. Decline development ceased for the year on December 10. Development work will re-commence in approximately one months time.

If you have any questions, please do not hesitate to contact us.

Yours truly,

David P. Harpley, P. Geo.
Environmental Coordinator
Canadian Zinc Corp.

cc. Alan Taylor CZN
Troy Searson DIAND

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Vancouver, BC V6B 4N9
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CEMI Project # 0571: Canadian Zinc, Prairie Creek

October

Modified Acid-Base Accounting

Sample ID	Paste pH	S(T)%	S(SO4)%	S(S-2)%	AP	NP	Net NP	Fizz Test	Rock Type	Visible Sulphides
3-1	8.3	0.24	0.09	0.15	4.7	793.8	789.1	Moderate	Road River Fn*	Trace
3-2	8.9	0.3	0.07	0.23	7.2	761.3	754.1	Moderate	Road River Fn*	Trace
3-3	8.1	0.31	0.06	0.25	7.8	727.5	719.7	Strong	Road River Fn*	Trace
3-4	8.6	0.29	0.07	0.22	6.9	701.3	694.4	Moderate	Road River Fn*	Trace
3-1 duplicate	8.38	0.25	0.08			792.5		Moderate		

Notes:

* Shale and Argillaceous Dolostone

AP = Acid potential in tonnes (t) $CaCO_3$ equivalent per 1000 t of material. AP is determined from calculated sulphide sulphur content: S(T) - $S(SO_4)$

NP = Neutralization potential in tonnes (t) $CaCO_3$ equivalent per 1000 t of material

NET NP = NP - AP

Metals by Aqua Regia Digestion with ICP Finish

Sample ID	Ag ppm	Al %	As ppm	Ba ppm	Be ppm	Bi ppm	Ca %	Cd ppm	Co ppm	Cr ppm	Cu ppm	Fe %
3-1	0.6	0.14	15	131	<0.5	<5	>15.0	6	2	47	42	0.63
3-2	<0.2	0.16	20	35	0.5	<5	>15.0	3	2	58	34	0.48
3-3	<0.2	0.17	20	74	0.5	<5	14.4	1	2	79	25	0.5
3-4	<0.2	0.16	22	43	0.5	<5	14.91	3	2	64	29	0.48

Sample ID	Hg ppm	K %	La ppm	Mg %	Mn ppm	Mo ppm	Na %	Ni ppm	P ppm	Pb ppm	S %	Sb ppm
3-1	2	0.1	11	8.42	134	8	0.02	17	1299	318	0.3	8
3-2	1	0.1	13	8.93	78	7	0.02	30	2070	58	0.38	<5
3-3	<1	0.11	13	8.4	76	8	0.02	31	1986	32	0.37	<5
3-4	<1	0.1	12	8.68	74	7	0.02	30	2091	61	0.37	<5

Sample ID	Sc ppm	Sr ppm	Th ppm	Ti %	Tl ppm	U ppm	V ppm	W ppm	Zn ppm	Zr ppm
3-1	2	96	8	<0.01	<10	85	9	<10	693	6
3-2	1	101	7	<0.01	<10	78	9	<10	235	4
3-3	2	98	6	<0.01	<10	74	9	<10	142	4
3-4	2	100	6	<0.01	<10	75	9	<10	271	5

CEMI Project # 0571: Canadian Zinc, Prairie Creek

November

Modified Acid-Base Accounting

Sample ID	Paste pH	S(T) %	S(SO4) %	S(S-2) %	AP	NP	Net NP	Fizz Test	Rock Type	Visible Sulphides
4-1	8.15	0.4	0.04	0.36	11.3	584.8	573.6	Strong	Road River Fn*	Trace
4-2	8.26	0.39	0.04	0.35	10.9	633.6	622.7	Strong	Road River Fn*	Trace
4-3	8.27	0.36	0.03	0.33	10.3	586.2	575.9	Moderate	Road River Fn*	Trace
4-4	8.22	0.38	0.04	0.34	10.6	578.5	567.9	Moderate	Road River Fn*	Trace
4-4A	8.25	0.39	0.03	0.36	11.3	573.5	562.3	Strong	Road River Fn*	Trace
4-1 duplicate	8.16	0.39	0.04			584.8		Strong		

Notes:

* Shale and Argillaceous Dolostone

AP = Acid potential in tonnes (t) $CaCO_3$ equivalent per 1000 t of material. AP is determined from calculated sulphide sulphur content: S(T) - S(SO_4)

NP = Neutralization potential in tonnes (t) $CaCO_3$ equivalent per 1000 t of material

NET NP = NP - AP

Metals by Aqua Regia Digestion with ICP Finish

Sample ID	Ag ppm	Al %	As ppm	Ba ppm	Be ppm	Bi ppm	Ca %	Cd ppm	Co ppm	Cr ppm	Cu ppm	Fe %
4-1	0.6	0.18	<5	56	<0.5	<5	>15.0	6	1	45	32	0.8
4-2	0.8	0.19	<5	50	<0.5	<5	>15.0	7	1	41	33	0.79
4-3	0.4	0.15	<5	37	<0.5	<5	>15.0	3	<1	39	16	0.79
4-4	0.5	0.14	<5	47	<0.5	<5	>15.0	4	<1	36	19	0.75
4-4A	<0.2	0.15	<5	49	<0.5	<5	>15.0	3	<1	47	22	0.82

Sample ID	Hg ppm	K %	La ppm	Mg %	Mn ppm	Mo ppm	Na %	Ni ppm	P ppm	Pb ppm	S %	Sb ppm
4-1	4	0.13	13	2.59	86	4	0.02	19	765	349	0.54	12
4-2	2	0.14	13	2.6	90	4	0.02	20	683	361	0.54	14
4-3	<1	0.11	13	2.28	81	4	0.01	17	738	133	0.54	11
4-4	2	0.11	13	2.38	80	4	0.01	17	758	206	0.53	6
4-4A	2	0.11	13	2.56	86	4	0.02	18	694	189	0.56	10

Sample ID	Sc ppm	Sr ppm	Th ppm	Ti %	Tl ppm	U ppm	V ppm	W ppm	Zn ppm	Zr ppm
4-1	2	265	<5	<0.01	12	<10	29	<10	722	7
4-2	2	283	<5	<0.01	12	<10	31	<10	817	7
4-3	2	279	<5	<0.01	10	<10	28	<10	325	7
4-4	2	269	<5	<0.01	10	<10	26	<10	435	7
4-4A	2	275	<5	<0.01	<10	<10	27	<10	391	7

CANADIAN ZINC CORPORATION

November 14, 2007

Tyree Mullaney
Regulatory Officer
Mackenzie Valley Land and Water Board
7th Floor-4910 50th Avenue,
Yellowknife, NT
X1A 2P6

Dear Ms. Mullaney:

Re: **Report of Waste Rock Pile Monitoring Data, July 16 – September 11, 2007**
Water License MV2001L2-0003

This letter reports results for the period July 16 – September 11, 2007 for the Waste Rock Pile located on a lined pad near the 870 Level portal.

Background

As you know, the rock pile is being created by the placement of rock from development of a new decline from the 870 Level adit. Rock from the development is being placed on a prepared pad. A representative sample of the rock is collected weekly for testing. The pad also has a collection sump for pad runoff. The intention is to collect a water sample from the sump weekly.

The attached figure shows the new decline as it exists at present. The figure also shows the segments of the decline from which the weekly rock samples were created. A weekly rock pile is created on the surface pad prior to sampling. A sample is collected by taking grabs of the finer material from multiple locations around the weekly pile. Rock samples are sent monthly to Canadian Environmental and Metallurgical Inc. (CEMI) in Burnaby, BC. Water samples are sent weekly with SNP samples to Maxxam Analytics, also of Burnaby.

Results

Results are given in the attached tables. There were four weekly rock samples for the period July 16 – August 13, and four for the period August 16 – September 11, plus a duplicate for each month. Water sample collection was possible from Aug 6 onwards. The tables also contain information on weekly pile rock type and occurrence of sulphides.

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Vancouver, BC V6B 4N9
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The results show that all weekly rock piles have an abundance of neutralisation capacity, and based on the ratio of neutralisation potentials to acid potentials (NP/AP) always being in excess of 60:1, all piles are non-acid generating. All sulphur contents are less than 0.4%.

All rock from the new decline remains on the pad near the 870 Level portal.

If you have any questions, please do not hesitate to contact us.

Yours truly,

David P. Harpley, P. Geo.
Environmental Coordinator
Canadian Zinc Corp.

cc. Alan Taylor CZN
Troy Searson DIAND

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Vancouver, BC V6B 4N9
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CEMI Project # 0571: Canadian Zinc, Prairie Creek

July 16 - August 13 2007

Modified Acid-Base Accounting

Sample ID	Paste pH	S(T)%	S(SO4)%	S(S-2)%	AP	NP	Net NP	Fizz Test	Rock Type	Visible Sulphides
5-1	8.16	0.28	0.02	0.26	8.1	776.9	768.8	Moderate	Road River Fn*	Trace
5-2	8.30	0.19	0.03	0.16	5.0	781.3	776.3	Strong	Road River Fn*	Trace
5-3	7.86	0.26	0.03	0.23	7.2	757.5	750.3	Moderate	Road River Fn*	Trace
5-5	8.22	0.25	0.02	0.23	7.2	750.0	742.8	Strong	Road River Fn*	Trace
5-1 duplicate	8.15	0.27	0.02			777.0		Moderate		

Notes:

* Shale and Argillaceous Dolostone

AP = Acid potential in tonnes (t) $CaCO_3$ equivalent per 1000 t of material. AP is determined from calculated sulphide sulphur content: S(T) - S(SO_4)

NP = Neutralization potential in tonnes (t) $CaCO_3$ equivalent per 1000 t of material

NET NP = NP - AP

Metals by Aqua Regia Digestion with ICP Finish

Sample ID	Ag ppm	Al %	As ppm	Ba ppm	Be ppm	Bi ppm	Ca %	Cd ppm	Co ppm	Cr ppm	Cu ppm	Fe %
5-1	<0.2	0.07	14	59	<0.5	<5	>15	2	2	7	<1	0.61
5-2	0.2	0.07	13	165	<0.5	<5	>15	2	2	8	<1	0.57
5-3	0.2	0.06	14	88	<0.5	<5	>15	4	2	8	<1	0.54
5-5	0.7	0.07	13	60	<0.5	<5	>15	5	1	11	<1	0.56
Sample ID	**Hg ppm**	**K %**	**La ppm**	**Mg %**	**Mn ppm**	**Mo ppm**	**Na %**	**Ni ppm**	**P ppm**	**Pb ppm**	**S %**	**Sb ppm**
5-1	<1	0.06	17	1.85	87	2	0.01	13	211	92	0.29	<5
5-2	<1	0.05	17	1.76	83	2	0.01	21	189	143	0.23	<5
5-3	1	0.05	15	1.47	74	2	0.01	12	294	106	0.3	<5
5-5	1	0.05	16	2.36	82	2	0.01	13	327	262	0.29	5
Sample ID	**Sc ppm**	**Sr ppm**	**Th ppm**	**Ti %**	**Tl ppm**	**U ppm**	**V ppm**	**W ppm**	**Zn ppm**	**Zr ppm**		
5-1	2	396	7	<0.01	<10	69	19	<10	186	5		
5-2	1	405	7	<0.01	<10	69	20	<10	209	5		
5-3	1	381	5	<0.01	<10	71	19	<10	276	5		
5-5	2	315	6	<0.01	<10	64	20	<10	521	5		

CEMI Project # 0571: Canadian Zinc, Prairie Creek

August 16 - September 11 2007

Modified Acid-Base Accounting

Sample ID	Paste pH	S(T) %	S(SO4) %	S(S-2) %	AP	NP	Net NP	Fizz Test	Rock Type	Visible Sulphides
6-1	8.31	0.3	<0.01	0.3	9.4	836.5	827.1	Strong	Road River Fn*	Trace
6-2	8.45	0.29	<0.01	0.29	9.1	849.5	840.4	Strong	Road River Fn*	Trace
6-3	8.46	0.32	<0.01	0.32	10.0	848.8	838.8	Strong	Road River Fn*	Trace
6-4	8.27	0.35	<0.01	0.35	10.9	669.4	658.5	Strong	Road River Fn*	Trace
6-1 duplicate	8.28	0.29	<0.01			837.1		Strong		

Notes:

* Shale and Argillaceous Dolostone

AP = Acid potential in tonnes (t) $CaCO_3$ equivalent per 1000 t of material. AP is determined from calculated sulphide sulphur content: S(T) - $S(SO_4)$

NP = Neutralization potential in tonnes (t) $CaCO_3$ equivalent per 1000 t of material

NET NP = NP - AP

Metals by Aqua Regia Digestion with ICP Finish

Sample ID	Ag ppm	Al %	As ppm	Ba ppm	Be ppm	Bi ppm	Ca %	Cd ppm	Co ppm	Cr ppm	Cu ppm	Fe %
6-1	0.4	0.05	4.7	55	<1	<0.1	>10	1.3	2.7	7	9.3	0.44
6-2	0.5	0.07	5.1	44	<1	<0.1	>10	1.9	2.8	6	11.2	0.42
6-3	0.6	0.07	6.7	44	<1	0.1	>10	2.5	2.7	8	13.7	0.45
6-4	1.1	0.08	11	197	<1	0.1	>10	6.9	2.8	10	23.5	0.45
Sample ID	**Hg ppm**	**K %**	**La ppm**	**Mg %**	**Mn ppm**	**Mo ppm**	**Na %**	**Ni ppm**	**P ppm**	**Pb ppm**	**S %**	**Sb ppm**
6-1	0.4	0.04	11	2.12	104	3.9	0.01	23.4	0.02	73.5	0.49	1.4
6-2	0.7	0.05	11	3.35	119	3.7	0.01	22.3	0.03	86.3	0.52	2.3
6-3	0.9	0.05	10	4.93	151	4.1	0.01	20.4	0.01	137.9	0.49	3.3
6-4	2.9	0.06	12	3.43	106	3.6	0.01	21.8	0.02	309.7	0.45	6.5
Sample ID	**Sc ppm**	**Sr ppm**	**Th ppm**	**Ti %**	**Tl ppm**	**U ppm**	**V ppm**	**W ppm**	**Zn ppm**	**Zr ppm**		
6-1	1.8	406	1.9	0.022	<0.1	1.5	17	<0.1	136	5		
6-2	1.7	343	1.8	0.017	<0.1	1.6	23	0.1	186	5.6		
6-3	1.6	236	1.7	0.014	0.1	1.7	20	0.1	282	5.7		
6-4	1.7	277	2	0.016	<0.1	1.7	21	0.5	781	6		

Collection Pond Water Samples

	Al	Sb	As	Ba	Be	Bi	B	Cd	Ca	Cr	Co	Cu	Fe	Pb	Mg	Mn
Aug 6	0.05	<0.05	<0.05	0.032	<0.0002	<0.05	0.012	0.003	260	0.005	<0.005	<0.005	0.016	<0.03	53.6	0.016
Aug 14	0.03	<0.05	<0.05	0.022	<0.0002	<0.05	0.018	<0.002	267	<0.005	<0.005	<0.005	0.01	<0.03	58.8	0.016
Aug 23	<0.02	<0.05	<0.05	0.019	<0.0002	<0.05	<0.008	<0.002	196	<0.005	<0.005	<0.005	0.02	<0.03	40.9	0.01
Aug 30	<0.02	<0.05	<0.05	0.016	<0.0002	<0.05	<0.008	<0.002	172	<0.005	<0.005	<0.005	0.02	<0.03	38.2	0.009
Sep 4	0.03	<0.05	<0.05	0.015	<0.0002	<0.05	0.008	<0.002	140	<0.005	<0.005	<0.005	0.033	0.03	31.5	0.008
Sep 11	0.23	<0.05	<0.05	0.017	<0.0002	<0.05	0.012	<0.002	125	<0.005	<0.005	<0.005	0.111	<0.03	35.5	0.006
	Mo	**Ni**	**P**	**K**	**Se**	**Si**	**Ag**	**Na**	**Sr**	**S**	**Tl**	**Sn**	**Ti**	**V**	**Zn**	**Zr**
Aug 6	0.007	0.022	<0.1	7	0.04	1.07	<0.01	11.8	0.822	267	<0.03	<0.02	<0.003	<0.005	0.581	<0.005
Aug 14	0.014	0.018	<0.1	7	0.06	1.04	<0.01	9.29	0.991	283	<0.03	<0.02	<0.003	<0.005	0.613	<0.005
Aug 23	0.01	0.015	<0.1	4	<0.03	0.75	<0.01	4.68	0.722	198	<0.03	<0.02	<0.003	<0.005	0.498	<0.005
Aug 30	0.009	0.011	<0.1	3	0.03	0.62	<0.01	4.01	0.612	174	<0.03	<0.02	<0.003	<0.005	0.471	<0.005
Sep 4	0.007	0.012	<0.1	2	<0.03	0.55	<0.01	3.03	0.51	138	<0.03	<0.02	<0.003	<0.005	0.374	<0.005
Sep 11	0.021	0.012	<0.1	4	0.04	0.87	<0.01	6.42	0.481	135	<0.03	<0.02	<0.003	<0.005	0.253	<0.005

All results mg/L

Attachment 3

PRAIRIE CREEK WASTE ROCK SAMPLING RECORDING SHEET

Date	Day	Sample Label	Time Period of Rock Pile Sample	Sample Geology	Waste Rock Pad Sump Conditions

Attachment 4

DECLINE WATER QUALITY

Sample Location	Drill Station	Sample Date	EC (uS/cm)	Hard	pH	TDS	Total Alk.	Cl	SO4	Sb_d	As_d	Cd_D	Cu_D	Fe_D	Pb_D	Hg_D	Zn_D
Grab samples from Decline																	
Decline	-	31-DEC-14	1450	810	8.22	1140	457	8.8	486								-
Decline	-	03-JAN-15	1390	869	8.09	1120	451	8.2	476								0.279
Decline	-	08-JAN-15	1450	954	7.61	1140	454	3.4	483	0.0214	0.0597	0.000075	-	0.09	-	-	0.714
Decline	-	15-JAN-15	1410	897	7.82	1050	428	3.9	442	0.0275	0.076	0.000054	-	-	-	-	0.556
Decline	-	29-JAN-15	1300	923	8.07	1030	428	< 2.5	470	0.0516	0.0265	-	-	-	-	-	0.139
End of Decline	-	05-FEB-15	1330	879	8.03	1030	376	< 5	452	0.0303	0.0265	-	-	-	-	-	0.0355
End of Decline	-	12-FEB-15	1330	913	8.06	1040	347	< 2.5	446	0.0291	0.0268	-	-	-	-	-	0.0162
End of Decline	-	19-FEB-15	1270	886	8.05	966	378	< 2.5	437	0.0406	0.0435	-	-	-	-	-	0.29
Decline	-	26-FEB-15	1250	843	8.12	971	359	< 2.5	415	0.037	0.0379	-	-	-	-	-	0.119
Grab samples from drill stations																	
-	DS-1	03-JAN-15	1340	910	8.17	1100	471	< 5	465								0.987
-	DS-1	08-JAN-15	1340	959	7.61	921	465	3	451	0.027	0.0966	0.000303	-	3.14	0.004	-	0.644
-	DS-1	15-JAN-15	1440	933	7.81	1100	457	2.8	441	0.0371	0.107	0.000567	-	2.35	0.0098	-	0.876
-	DS-2	03-JAN-15	1740	1130	8.07	1400	498	< 5	688								2.04
-	DS-2	08-JAN-15	1640	1160	7.47	1400	487	< 5	650	0.0121	0.0126	0.0035	0.0035	0.253	0.0134	-	2.07
-	DS-2	15-JAN-15	1590	1040	7.79	1230	462	< 5	542	0.0465	0.091	0.00256	0.0025	0.648	0.0135	0.0003	1.12
PCU-07-16	DS-2	29-JAN-15	1410	925	7.63	1120	454	< 2.5	450	0.0915	0.188	0.000954	-	1.41	0.036	-	0.917
PCU-07-16	DS-2	05-FEB-15	1430	941	7.67	1070	468	< 5	444	0.0827	0.179	0.000934	-	1.51	0.0382	-	0.915
PCU-07-16	DS-2	12-FEB-15	1460	928	7.61	1080	471	< 5	439	0.0903	0.178	0.000837	-	1.61	0.0359	-	0.898
PCU-07-16	DS-2	19-FEB-15	1380	926	7.68	1080	450	< 2.5	451	0.0889	0.171	0.000851	-	1.45	0.0069	-	0.887
PCU-07-16	DS-2	26-FEB-15	1400	931	7.78	1060	444	< 2.5	450	0.0893	0.177	0.00093	-	1.47	0.0304	-	0.911
	DS-3	15-JAN-15	1490	956	7.84	1130	392	2.6	517	0.0247	0.098	0.000632	-	0.484	0.0071	-	1.44
PCU-07-20	DS-3	29-JAN-15	1500	1010	7.99	1160	403	< 2.5	533	0.0327	0.135	0.000726	-	0.611	0.0106	-	1.69
PCU-07-20	DS-3	31-JAN-15	1480	995	7.56	1230	406	< 5	552	0.0299	0.134	0.000677	-	0.604	0.0092	-	1.63
PCU-07-20	DS-3	01-FEB-15	1530	994	7.82	1250	362	< 5	551	0.0258	0.119	0.000665	-	0.548	0.0088	-	1.45
PCU-07-20	DS-3	05-FEB-15	1490	998	7.67	1130	419	< 5	539	0.0295	0.134	0.000655	-	0.631	0.0098	-	1.64
PCU-07-20	DS-3	12-FEB-15	1530	977	7.82	1200	379	< 5	539	0.0316	0.131	0.000635	-	0.626	0.0088	-	1.59
PCU-07-20	DS-3	19-FEB-15	1480	992	7.56	1180	402	< 2.5	556	0.0318	0.124	0.000662	0.0024	0.518	0.0012	-	1.64
PCU-07-20	DS-3	26-FEB-15	1500	1010	7.7	1190	411	< 2.5	570	0.0313	0.145	0.000638	-	0.649	0.0078	-	1.71
	DS-4	15-JAN-15	1340	829	7.8	984	406	3.1	433	0.0683	0.185	0.000685	-	0.643	0.0078	-	1.07
PCU-07-36	DS-4	29-JAN-15	1400	942	7.56	1100	392	< 2.5	496	0.0655	0.179	0.000825	-	0.728	0.017	-	1.14
PCU-07-36	DS-4	05-FEB-15	1400	914	7.68	1080	412	< 2.5	430	0.0572	0.183	0.00053	-	0.728	0.0145	-	1.09
PCU-07-36	DS-4	12-FEB-15	1460	944	7.78	1130	396	< 5	498	0.061	0.176	0.000573	-	0.865	0.0073	-	1.1
PCU-07-36	DS-4	19-FEB-15	1310	862	7.67	1000	384	< 2.5	452	0.0463	0.163	0.000336	0.0018	0.629	0.0025	-	0.969
PCU-07-36	DS-4	26-FEB-15	1410	929	7.68	1100	411	< 2.5	496	0.0497	0.159	0.000564	-	0.73	0.0091	-	1.12
PCU-07-29	DS-5	27-APR-15	1430		7.95	1050	325	< 2.5	479	0.0463	0.153	0.000443	-	0.672	0.0014	-	0.985
PCU-07-31	DS-5	29-JAN-15	1400	911	7.57	1100	438	< 2.5	452	0.0571	0.127	0.000136	-	0.928	0.0058	-	1.03
PCU-07-31	DS-5	05-FEB-15	1320	859	7.71	975	419	< 5	721	0.0654	0.124	0.000066	-	0.879	0.0043	-	0.941
PCU-07-31	DS-5	12-FEB-15	1360	879	8.03	1060	438	< 5	406	0.0713	0.113	0.000078	-	0.525	-	-	0.963
PCU-07-31	DS-5	19-FEB-15	1340	860	7.57	999	421	< 2.5	425	0.0656	0.121	0.000094	-	0.862	0.0039	-	0.947
PCU-07-31	DS-5	26-FEB-15	1310	878	7.89	1030	423	< 2.5	430	0.0684	0.113	0.000068	-	0.709	-	-	0.961
PCU-07-49	DS-6	27-APR-15	1530		7.76	1140	389	< 2.5	478	0.0345	0.0868	-	-	0.68	0.0018	-	0.699
PCU-07-50	DS-6	05-FEB-15	1640	1080	7.68	1270	520	< 5	539	0.028	0.0932	-	-	0.518	-	-	0.475
PCU-07-50	DS-6	08-FEB-15	1640	1090	7.82	1300	486	< 5	538	0.0309	0.1	-	-	0.519	0.0044	-	0.51
PCU-07-50	DS-6	09-FEB-15	1600	1060	7.66	1260	477	< 5	533	0.0357	0.0982	-	-	0.549	0.0021	-	0.544
PCU-07-50	DS-6	12-FEB-15	1610	1080	7.83	1260	506	< 5	522	0.0338	0.0912	-	-	0.404	-	-	0.517
PCU-07-50	DS-6	19-FEB-15	1590	1070	7.78	1260	503	< 5	547	0.0321	0.0895	-	-	0.386	-	-	0.506
PCU-07-50	DS-6	26-FEB-15	1590	1040	7.82	1210	497	< 5	541	0.0311	0.0913	-	-	0.478	-	-	0.505
PCU-07-42	DS-7	27-APR-15	1300		7.91	951	389	< 2.5	394	0.0128	0.0303	0.000125	-	0.285	0.0018	-	0.408
PCU-07-43	DS-7	27-APR-15	1260		8.02	877	398	< 2.5	385	0.0226	0.0469	0.00011	-	0.233	-	-	0.494
PCU-07-45	DS-7	27-APR-15	1270		7.99	920	383	< 2.5	369	0.0307	0.0776	-	-	0.262	-	-	0.356
PCU-07-46	DS-7	19-FEB-15	1280	835	7.85	976	413	< 2.5	395	0.0669	0.106	-	-	0.421	-	-	0.428
PCU-07-46	DS-7	26-FEB-15	1300	825	7.89	973	420	< 2.5	408	0.0674	0.108	-	-	0.394	-	-	0.446
PCU-07-47	DS-7	05-FEB-15	1280	829	7.81	957	398	< 2.5	376	0.0657	0.109	-	-	0.473	-	-	0.424
PCU-07-47	DS-7	12-FEB-15	1300	847	7.96	968	444	< 2.5	381	0.0696	0.108	-	-	0.372	-	-	0.432
PCU-07-47	DS-7	27-APR-15	1380		8.02	1020	431	< 2.5	432	0.0649	0.106	-	-	0.232	-	-	0.497