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Alternatives North: Kevin O'Reilly				
ID	**Topic**	**Reviewer Comment/Recommendation**	**Proponent Response**	**Board Staff Response**
10	General File	**Comment** See General File **Recommendation**		
1	Cover Letter dated February 26, 2014	**Comment** There is no explanation of the long delay in submitting the application. The issue of excess storage bags from the Roaster Deconstruction should have been known as early as September 2014. Presumably the tarping of the excess bags has already taken place, well before the application was even submitted to the MVLWB. **Recommendation** AANDC should provide a timeline on the need for tarping of excess waste including when it was known, public engagement, when the tarping took place, timing of any consultations with the inspector or the MVLWB staff and if the containers have all now arrived at site. AANDC should outline how it will avoid such delays in the future to avoid retroactive regulatory approvals after actions have already been taken. The MVLWB should consider amending the water licence and/or schedules to clearly require approval of management plan amendments before the licencee can act on the requests.	<u>Sources of Waste Resulting in an Increase Demand in Containers</u> • Additional quantities of waste were discovered in previously hidden or inaccessible locations, such as the large sump discovered under the kiln in the Calcine Plant and the Dorrco reactors containing much more brick than expected (up to 4.5' thick in some sections) - brick from the reactors and the kiln alone filled 350 TDG-compliant bags. • The arsenic encrusted deconstruction waste from the Dorrco flues and cyclones, Cottrell and Baghouse could only effectively use about half of a container space in the end because of weight restrictions. • The wood waste stream from the entire AC Roaster structure resulted in a greater requirement of shipping containers than planned. <u>Timeline</u> 15 OCT 2014 – forecasted surplus of containers. 03 NOV 2014 – potential shortage of containers; 12 pairs of containers ordered. 12 NOV 2014 – confirmed shortage of containers (50); 13 additional pairs of containers ordered. 9 DEC 2014 - initial package was emailed to parties regarding the proposed amendments.	

			11 DEC 2014 - The amendments were discussed at the Giant Mine Working Group meeting. 23 NOV 2014 – finished covering the TDG-compliant bags (placed on pallets and/or geofabric) with a geomembrane. <u>Status of Containers</u> • All 50 containers have been delivered to site. <u>Avoiding Retroactive Regulatory Approvals in the Future</u> • Unforeseen conditions and events requiring changes in plans, schedules, approaches, procedures, etc. are inherent to project delivery. The regulatory context that frames the Roaster work includes a water license that was issued under emergency conditions and that excluded the standard clause that would enable the AANDC inspectors to approve changes to the license. This sometimes prevents the GMRP to reconcile the need to implement a change quickly and the need to amend the water license before doing so. • The decision to proceed with the tarping of the waste bags was not made lightly. It was done after having weighed the advantages and disadvantages of the available options; after having discussed it with the AANDC's inspector; and with the recognition that worker health and safety is the most important consideration.	
2	Appendix 1, item 9, Lack of site inspections	**Comment** Following devolutionon April 1, 2104 when all the former AANDC land and water inspectors moved over to GNWT, there appear to have been only two inspections of the site on August 1, 2014 and on November 2, 2014. In the August 1 report the inspector noted "Further instances of leaking from seacans must	No comment. The Giant Mine Project Team and the AANDC Inspectors are separate and distinct. Please refer any questions to Lands Manager, at 867.669.2440. Please see Response to Comment 9 for further information on the monitoring routine for the MSA.	

		be recorded during regular monitoring of the TWSA but need not be reported to the NWT Spill Line." Inspections do not appear to be happening on a regular basis and it is not clear whether AANDC has hired inspection staff following devolution. It is not clear how AANDC, as the Giant Mine Remediation Project manager, is recording its monitoring of the Materials Storage Area (MSA) and whether any leaks or spills are being recorded or reported. **Recommendation** AANDC should indicate whether it has hired land and water inspection staff based in Yellowknife that are capable of inspecting Giant and what the inspection regime is for the site given the infrequency of inspections. AANDC, as the Giant Mine Remediation Project manager, should also clearly spell out what its monitoring routine is for the MSA, and how and when it reports any leaks or spills in that area.		
3	Appendix 1, item 11, Testing of leaks and spills from the MSA	**Comment** Concerns have been raised several times at the Giant Mine Working Group meetings regarding the spills and leaks in the MSA. AANDC provided a copy of a report prepared by its contractor on a June 6, 2014 spill (see attached). Although the spill was reported to the Spill Line on that date, the contractor took until July 29 to investigate, the report was not completed until October 2 and was finally distributed to the Working Group on November 12. AANDC also continues to report publicly (see Appendix 3, item 6) that there has only been one leak in the MSA when its own contractor reports there have been four noted up to July 29, 2014. It is not clear if	<u>Leaks Recorded Up to July 29, 2014</u> • We agree that the terminology used to date may have led to some confusion. For clarity, the June 6, 2014 spill report described one spill from shipping container 41-4052978 (40' container) and bag RS0026. The spill consisted of asbestos and arsenic containing wastes >5L or 5kg of and was a reportable spill as per the *AANDC Spill Contingency Guidelines, 2007 Appendix B-3 Immediately Reportable Spill Quantities*. The subsequent investigation noted 3 visible leaks from containers 35-5917525, 54-325558 and 45-7661788 (all upper	

		there have been any further leaks or spills since July 29, or whether the lower containers are actually inspected in any way. There does not appear to be an overall management plan for the MSA and given that highly contaminated arsenic materials are going to be stored there for at least 6-8 years, there is a need for such a plan. **Recommendation** AANDC should correct its reporting of leaks within the storage containers in the MSA. AANDC should clarify whether any leaks or spills have been detected in any of the containers or bags in the MSA after July 29, 2014, and whether lower containers are inspected in any way. The MVLWB should direct AANDC to prepare a Materials Storage Area management plan that contains specific details on regular and timely monitoring of the area, spill and leak detection measures, investigations of leaks and spills including analysis of samples, clean-up protocols and public reporting. The management plan should also contain details on how AANDC intends to properly identify and mitigate the cause of any leaks to date including opening of the containers for a detailed inspection, venting of any condensation, or other actions. Specific mitigation measures following investigation, should require MVLWB approval.	level containers) and meter bag(s) RF0142, RS001, RS0143 and/or BH0104 respectively. All leaks were < 5L or 5kg and were non-reportable. We propose to use the following to describe the June 6, 2014 spill as a “spill event” that consisted of one reportable spill and three leaks. <u>Leaks Recorded Since July 29, 2014</u> • Regular MSA inspections have been conducted by Parsons since September 2014. The frequency of the inspections has generally been weekly. No other leaks/spills have been noted. Inspections have been completed on the following dates: - 1, 8, 15, 22 & 29 SEP 2014 - 6, 13, 20 & 27 OCT 2014 - 3, 10, 17 & 21 NOV 2014 - 1 & 9 DEC 2014 - 10 JAN 2015 - 12, 20 & 27 FEB 2015 - 6, 13, 21 & 28 MAR 2015 <u>Monitoring/Detection, Investigation, Clean-up and Reporting of Leaks and Spills</u> • These requirements are consistent with the Spill Contingency Guidelines and include: - the monitoring of the MSA; - inspection for leaks and spills; - the provision and maintenance of sufficient spill and emergency response equipment; - the reporting of spills.	
4	Appendix 1, additional information on the	**Comment** While the information provided by AANDC is useful, it does not deal with the potential for weakening	The meter bags for the Roaster Program are ASTM certificated. A product that is certified by ASTM is tested	

	performance of the waste bags	of the bags through prolonged storage (6-8 years) inside containers that are subjected to huge temperature variations, including extreme summer heat. The additional information appears to be prepared by AECOM and some professional opinions are expressed but are not stamped or certified in any way. **Recommendation** AANDC should provide information on the extreme temperature ranges that occur inside the containers and whether the waste bags can sustain such stress over a 6-8 or more year period. The additional information should be in the form of a letter from AECOM that is signed and stamped by a professional engineer.	by a third-party laboratory to determine the product's ability to conform to one or more of ASTM standards. The meter bags specifications, provided below, conform to the ASTM D-4355 standards (for measuring UV resistance) also providing exposure to heat and moisture. *Property* / *Test Method* / *Imperial* / *Metric* **Grab Tensile Strength** — ASTM D-4632 — 400 lbs — 2089N **Elongation** — ASTM D-4632 — 18% — 18% **Puncture** — ASTM D-4833 — 185 lbs — 815 N **Mullen Burst** — ASTM D-3786 — 800 psi — 5500 kpa **Trapezoidal Tear** — ASTM D-4533 — 185 lbs — 815 N **UV Resistance retained after 1800 hrs** — ASTM D-4355 — 70% — 70% **Apparent Opening Size** — ASTM D-4751 — n/a — n/a **Permittivity** — ASTM D-4491 — n/a — n/a **Flow Rate** — ASTM D-4491 — n/a — n/a	
5	Appendix 2, s. 2.4.7.3 Temporary Waste Transport Staging Area location	**Comment** AANDC Figure 10 does not clearly indicate in a geographical context where the Temporary Waste Transport Staging Area is located. **Recommendation** AANDC should provide an amended map to show where the non-hazardous wastes are	As Figure 10 is a photo intended to show the general area. For clarity an amended map will be included (submitted as a separate document) to replace *Figure 5 - Waste Laydown Areas*, and section 2.4.7.3 will be amended to read: *Non-hazardous materials will be sorted and stored in the*	

		currently placed on site including the Temporary Waste Transport Staging Area.	*Temporary Waste Transport Staging Area. Refer to section 2.2 for further details on the Temporary Waste Transport Staging Area; refer to Figure 5 - Waste Laydown Areas, and Figure 10 – Temporary Waste Transport Staging Area.*	
6	Appendix 2, s. 2.4.7.3 non-hazardous waste recycling	**Comment** AANDC indicated in October 2014 Appendix 1, Table 1 that it is investigating options for recycling some of the non-hazardous waste but there does not appear to be any progress in this regard. **Recommendation** AANDC should provide the current status of its efforts to recycle the non-hazardous waste from the Roaster Deconstruction and when and how it expects to make decisions on this matter. Communications with the public on this topic would be helpful and should be reported in the semi-annual report at a minimum.	Decisions on the fate of the non-hazardous waste will conform to applicable regulatory requirements. Recycling of this material, especially the steel is being contemplated. This has not been pursued further since October 2014 as other sources of non-hazardous wastes may eventually be generated on the site. If and when we generate a sufficient quantity of non-hazardous waste (i.e. clean steel) to attract buyers, we will inform the MVLWB and working group. In the meantime, the steel is being stored for eventual disposal.	
7	Appendix 3, comparison of storage options	**Comment** This table is not a proper comparison of options for the storage of the waste from the Roaster Deconstruction. The two options that should have been compared consist of storage of the waste in bags under tarps against storage in containers. **Recommendation** AANDC should revise the table in Appendix 3 to compare storage of arsenic waste in bags under tarps against storage in containers.	The intent of Table 3 Roaster Complex Stabilization *Material Storage Area Arsenic Containerization Options Comparison* was to compare the placement of the bags under winter conditions with the alternative of waiting until spring/summer 2015. The difference between the options presented was the timing of the placement of the meter bags in the containers and was not intended as a comparison of tarping vs. storage inside the containers. The primary consideration for the timing was ensuring worker health and safety. As noted in the table, experience indicates that workers' exposure to arsenic increases significantly during winter work conditions.	

8	Appendix 3, arrival of storage containers	**Comment** It is not clear whether the storage containers have all arrived at the site. **Recommendation** AANDC should clarify whether all of the storage containers required have actually arrived at the site.	Two orders of shipping containers were made and all containers are now on site. Delivery of the first 12 pairs (24 containers) was completed on 20 JAN 2015. Delivery of the last 13 pairs (26 containers) was completed on 31 MAR 2015.	
9	Appendix 4, 2.4.7.2 internal inspection frequency and written inspection reports	**Comment** AANDC appear to commit to monthly inspections of the MSA, yet the May 1, 2013 approved Spill Contingency Plan (s. 3.6.1, page 18) indicates that AANDC will monitor waste storage areas on a weekly basis. It is unclear what AANDC will do with the "written inspection reports" covering the MSA and whether this information will be provided to the inspector and/or filed with the MVLWB. **Recommendation** The MVLWB should direct AANDC to change the MSA internal inspection frequency to weekly, consistent with the approved Spill Contingency Plan. The MVLWB should direct AANDC to report any spills or leaks in the MSA in monthly reports to be filed on the public registry. The monthly reports should also require reports of any investigations of any spills or leaks and track implementaion of any mitigation or preventative measures. Procedures for this process should also be included in the overall management plan for the MSA as discussed above.	The current method of storage of the waste and the completion of regular inspections is consistent with the requirements listed in the Guidelines for the General Management of Hazardous Waste in the NWT and is of greater frequency for the completion of inspections on other hazardous materials storage facilities (e.g. PCB Regulations). The frequency of the inspections will be adjusted if there is a change in conditions and if deemed appropriate for the safe operation of the site (i.e. in the event of the change of site conditions or due to storm events). In addition to routine inspections, site security conducts regular patrols over the entire site, which includes the area of the MSA. This practice is consistent with the NWT Guidelines for Spill Contingency Planning, 2007. The frequency of the MSA inspections has generally been weekly, aside from a few exceptions in December 2014, January 2015 and February 2015. Any reportable spills will be reported through the 24-hour spill line. As alluded to in our Response to Comment 3, these responsibilities will be transferred to the Mine Manager after the completion of Parsons' contract.	

Environnent Canada: Sarah-Lacey McMillan				
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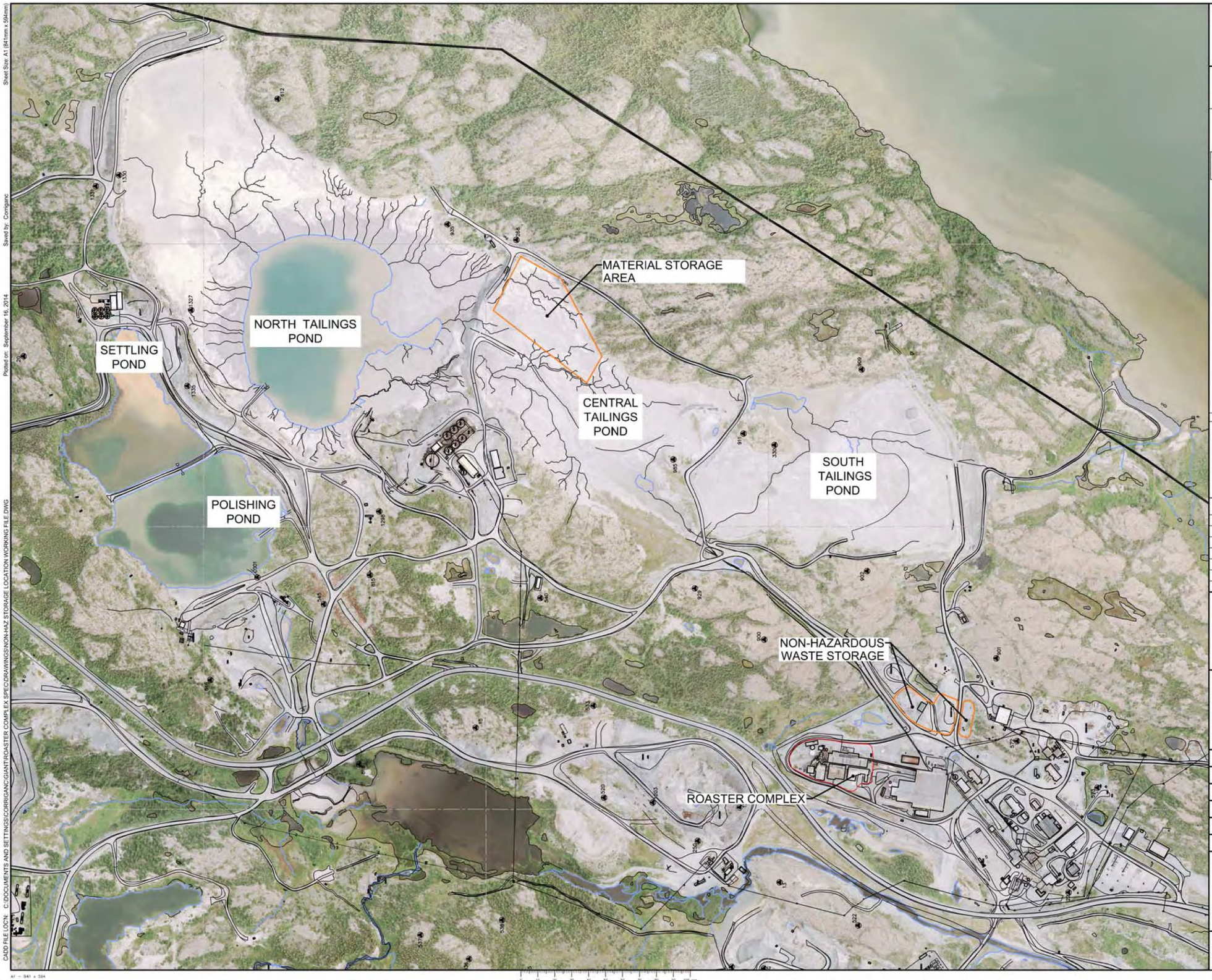
1	General File	**Comment** EC no comment letter **Recommendation**	No comment.	



Public Works and Government Services Canada / Travaux publics et Services gouvernementaux Canada

REAL PROPERTY SERVICES
Western Region
SERVICES IMMOBILIERS
Région de l'ouest

PRELIMINARY
NOT FOR CONSTRUCTION

AECOM

LEGEND:

WASTE STORAGE AREAS

NOTE:
ALL COORDINATES ARE IN THE LOCAL GMRP COORDINATE SYSTEM

Professional Seals / Sceaux

DO NOT SCALE DRAWINGS

Revision/ Revision	Description/Description	Date/Date
A		
A	ISSUED FOR INFORMATION	2014/09/16

Client/client

PUBLIC WORKS GOVERNMENT SERVICES CANADA

Project title/Titre du projet

GIANT MINE REMEDIATION PROJECT

ROASTER COMPLEX DECONSTRUCTION

Approved by/Approuvé par
G. WOOLLETT

Designed by/Concept par
C. CORRIGAN

Drawn by/Dessiné par
C. CORRIGAN

PWGSC Project Manager/Administrateur de Projets TPSGC
D. HANGO

PWGSC, Architectural and Engineering Resources Manager/ Ressources Architectural et de Directeur d'Ingénierie, TPSGC

Client/client
PWGSC

Drawing title/Titre du dessin

WASTE STORAGE LOCATIONS

Project No./ No. du projet	Sheet/Feuille	Revision no./ La Révision no.
R.014204.325	C01 OF 1	A

Non-Haz storage location working file.dwg

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Saved by: Corriganc
Plotted on: September 16, 2014
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A1 – 841 x 594