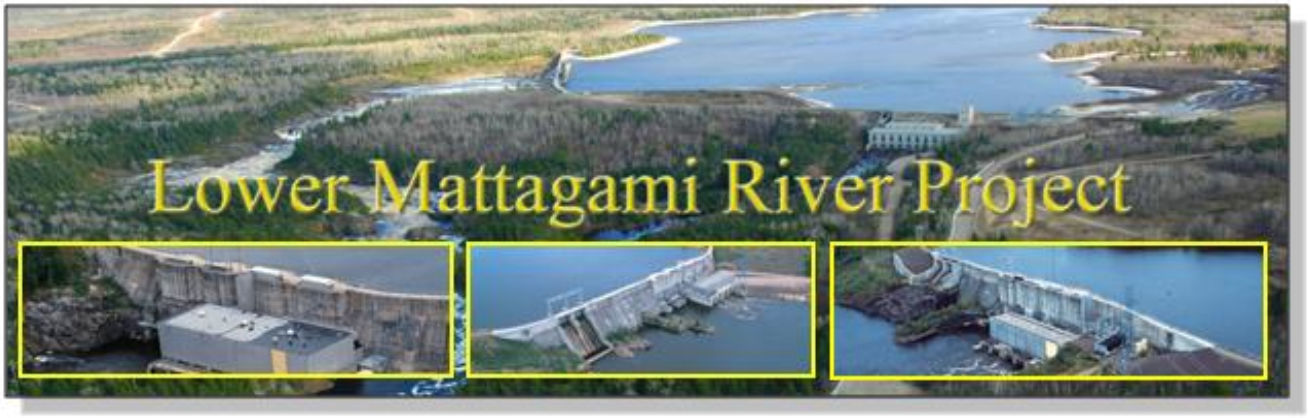


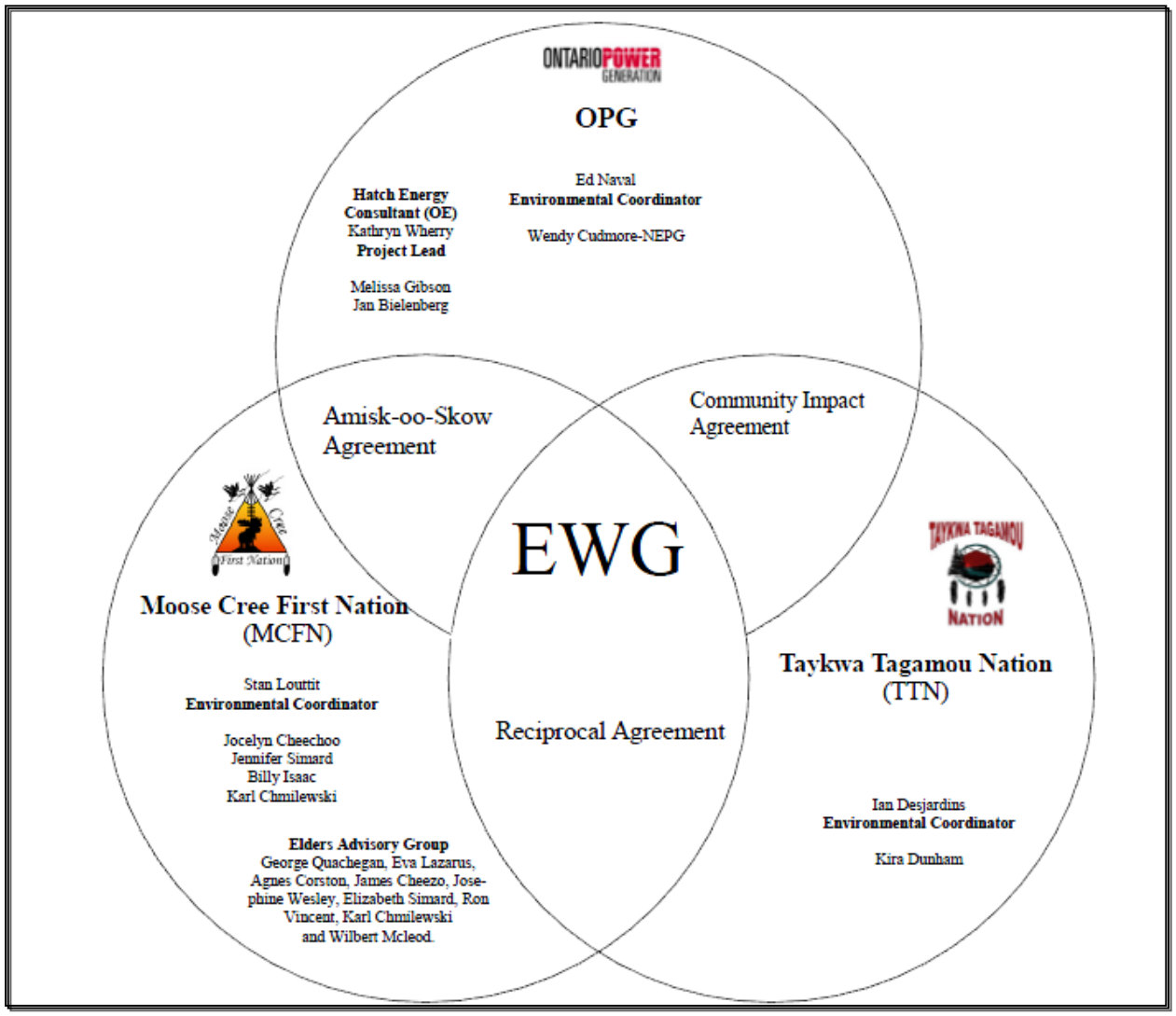
Environmental Working Group

Monthly Report

September 2013

ENVIRONMENTAL WORKING GROUP

Relationship Organizational Chart



- Weekly Environmental Working Group (EWG) and EWG/Kiewit – Alarie, a Partnership (KAP) meetings.
  - The EWG review its Action Items that include priority permit reviews, and deliverables to the Mattagami Extensions Coordinating Committee (MECC).
  - KAP gives EWG a construction up date every week and discusses any upcoming issues and/or urgent permit reviews.
  - Specific items that were discussed are below.
- EWG members attended the MECC meeting in Moose Factory on September 23. During the meeting the EWG presented updates on the Smoky Falls soil stockpile, the conceptual designs of the new extensions and new Smoky Falls GS, Term and Condition 20 regarding Contractors, and an update on when Hydro Seed can be planted.
- The First Nation members of the EWG also submitted the results their consultations with their Elders groups on the LMRP Site Rehabilitation Plan.
- The EWG has continued to finalize the results from the Environmental Due Diligence Audit on KAPs Environmental Management System conducted on the LMRP site in July.
- Inclusion of a First Nation perspective on the Cost Benefit Analysis of Mitigating and Reducing Spill in Adam Creek. TTN and MCFN have completed their interviews and continue to look at ways to incorporate the First Nation perspective within the report. MCFN and TTN are now working independently to develop their own community's perspectives for the report.
- MCFN and TTN of the EWG members continue to work on the development of a TEK Monitoring Program. The TEK Monitoring Program is intended to work with the OPG Environmental Effects Monitoring Plan to address term and condition 13 - Aboriginal Knowledge.
- Members of the EWG continued their work on the "Peoples of the Moose River Basin" historical text (EA Term and Condition 2c). Several members of the EWG have begun writing portions of the text. The MECC is now hosting the POMRB blog. A face to face meeting was held on September 18 to discuss the portions of writing that had been completed thus far and potential themes they fit it.
- The OPG and Hatch members of the EWG continue to work on collecting additional baseline information. The EWG members are also working on ways to implement the recommendations to incorporate TEK within the Baseline/monitoring EA Terms and Conditions.
- In an effort to improve the understanding of TEK, members of the EWG completed reading the "Wisdom of the Elders", by Peter Knudtson and David Suzuki.

ACTIONS TO BE COMPLETED in 2013

	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
EWG Environnemental Due Diligence Audit #3												
EWG Face to Face Meetings												
EWG present to the MECC the result of its review of the draft "Cost Benefit Analysis of Mitigating and Reducing Adam Creek Spill" (Condition 4(c) and (e) of EA T&Cs) by Hatch.												TBD
EWG present to the MECC "Environmental Effects Monitoring Plan, Lower Mattagami Development" (EA T&C 3, 4b, 5b, 6, 7 and 14).												
EWG present to the MECC the "Erosion Monitoring Plan" (EA T&C 6).												TBD
EWG present to the MECC the results and recommendations of periodic re-evaluations (Condition 10 of EA T&Cs).												TBD
TEK Workshop												
MCFN TEK Workshop												
EWG read TEK book 'Sacred Ecology'.												
EWG read TEK book 'Ellen Smallboy: Glimpses of a Cree Women's Life'.												
EWG read TEK book 'Wisdom of the Elders'.												

Completed: Pending: *Additional work still required to fulfill EA Term and Condition

Construction

Little Long

- The KAP grouting crew epoxy injected the pit liner and cracks in the concrete as a remedial measure for the leakage identified last month.
- KAP continued to adjust settings and alarms for various systems. They also focused their efforts on punch list and deficiency items.
- The focus in September was pre-operational and operational testing of components. A number of pre-operational tests were completed in the month.
- A number of components and systems were walked down.
- The Unit completed its first synchronization to the grid on September 11, 2013.
- Load rejection tests were performed at 25%, 50%, 75% and 100%. One test was performed at 110% which resulted in tripping the unit due to overspeed.
- Several head gate drop tests were performed. Following the last one, the unit was dewatered for inspection.
- As noted last month, during testing at Little Long, the runner made contact with the discharge ring, an issue that was identified following the head gate drop test and dewatering. A root cause investigation is under way. Andritz has made recommendations for corrective actions to implement in order to correct the issue. Tests performed to date will then be repeated. Inspections will occur before and after the repeated tests.
- During the outage for repairs, KAP completed connecting the 15 kV cables from the Unit 3 switchgear to the existing 13.8 kV switchgear, which will allow Unit 3 to energize the existing station service transformer TSS2.
- Corrective actions implemented to date include buffing the discharge ring in specific places to slightly increase the clearance between the runner blades and the discharge ring (Figure 1). The Unit is forecast to be watered up and operational testing will resume on October 4.
- Functional tests (including load testing) were completed for auxiliary hoists, with KAP, OPG, and Hatch representatives present as witnesses.

Figure 1: Little Long discharge ring grinding.

Harmon

- Blasting of tremie concrete occurred early in the month. Clamming of cofferdam materials continued for the first two weeks of the month. A bathymetric survey of the tailrace area was taken late in the month and RSW (the designer) is reviewing the results. The Liebherr crane used for clamming was relocated to Kipling to begin removal of the earth berm there.
- The tower crane was dismantled, demobilized and removed from the site (Figure 2).
- Andritz installed a number of components in the Unit, including the lower bracket, surface air coolers in the stator, the inner head cover sump pumps, the turbine pit walkway, pipes and instrumentation, rotor brakes, and hydraulic lines.
- Andritz continues to weld the rotor spider, and completed stacking the rotor. They have tested the rotor concentricity and are making adjustments.
- Preparations are under way to install the rotor in the Unit once concentricity adjustments are completed.
- AFI continues to work on the intake gate roller path. A Non-Conformance Report (NCR) was issued this month to identify that rework is required.
- The GSU transformer was delivered to site and set on its pad early in the month. KAP and CG Power electricians spend the remainder of the month installing the oil conservator, the neutral bus bar, lightning arrestors and lightning strike counters.
- CG Power filled the GSU transformer with oil.
- Rodan electricians finished installing revenue metering panels in the teleprotection room.
- KAP completed installing the Isolated Phase Bus (IPB). Hatch and NEPG project staff raised concerns through a Request for Information (RFI) around storage and handling of material prior to installation, installation quality, debris, and a number of failed tests. KAP has gone back to the supplier to get answers and to resolve the concerns that were raised.
- Cable tray installation and cable pulling continues throughout the powerhouse.

Figure 2: Harmon Cofferdam Template Removal

Kipling

- 1,069 m^3 of concrete was poured this month, bringing the total poured to date to 10,367 m^3 of 11,885 m^3 total.
- KAP poured the scroll case soffit concrete, which was the final pour required for water-up (Figure 3).
- The installation of the draft tube gates was completed and the tailrace was watered up near the end of the month.
- Prior to water-up, KAP removed the fill from Arc Cell 2-3 and the tremie concrete from the failed Cell 3. They also removed granular material from the inboard side of the earth berm.
- Andritz continued to weld and grind the lower and upper draft tube cone sections.
- AFI has started installing the lintel seal face overlay for the intake gates, and are welding the lateral seal face overlays. They have also started installing the stainless steel overlay on top of the original sill beam.
- Andritz has erected platforms and auxiliary structures in preparation for machining the stay ring flanges, and are installing the milling machine in the turbine pit.

Figure 3: Kipling – Watered up

Smoky Falls

- 7,449 m^3 of concrete was poured this month in the service bay, powerhouse, and intake areas, bringing the total poured to date to 133,253 m^3 of 155,084 m^3 total.
- At the end of the month, thirteen (13) concrete pours are in various stages of work (formwork started and / or rebar being installed) and progressing in the intake, powerhouse, East Service Bay, East Gravity Dam, West Gravity Dam, and Tailrace Zones 3 and 5. Sixty six (66) pours were completed during the month (a number of these were small pours).
- Global Precast completed installing precast panels on the north side of Units 1 and 2. They will return to site in early October to complete Unit 3 and the East Service Bay.
- Subcontractor Cyrheault continues to place concrete block walls throughout the powerhouse.

- Sucontractor CanAm continues to install the roof over the powerhouse, primarily over Units 1 and 2.
- Supermétal continues to erect the Unit 3 superstructure. They are also installing Q-decking on structural steel for the transformer and tailrace decks at Unit 3, in various areas in the mezzanines and the East Service Bay. Structural beams for the generator floor between Unit 1 and the West Service Bay and between Units 1 and 2 were installed.
- At Zone 5, the installation of additional rock anchors to improve the stability of the rock face continues, and several small concrete pours were completed.
- At Zone 3, anchor hole drilling and anchor installation has started. By the end of the month, 32 of an estimated 109 anchors were installed. KAP is reporting that work is progressing ahead of plan at this time due to better than anticipated rock conditions.
- Alstom continues to prepare Turbine/Generator components in the West Service Bay (WSB) and work inside the Units. They have completed the following tasks:
    - Unit 1, Alstom is performing repairs to the transition between the lower and upper draft tube cones (Figure 4). Alstom is making adjustments to the concentricity and circularity of the rotor as per the NCR identified. Rotor rim shrink was completed. The Unit 1 stator was also installed in the generator pit at month-end and winding activities will resume once it is leveled (Figure 5);
    - At Unit 2, Alstom has used the space formerly occupied by the Unit 1 stator to place and start assembling the sections of the Unit 2 stator. They have also started preparing the joint between the upper and lower draft tube cones for welding;
    - At Unit 3, KAP continued to work on powerhouse concrete pours.
- Installation of Isolated Phase Bus (IPB) ducts and Generator Circuit Breakers (GCBs) has started for Units 1 and 2.
- The Unit 1 transformer was delivered to site at month-end and is scheduled to be placed on its pad in early October.
- Sluiceway Gate 5 – Electricians from subcontractor EEC are currently clearing punch list items in the sluiceway gate 5 control building.

Figure 4: Smoky Falls: Unit 1 Repairs

Figure 5: Smoky Falls: Unit 1 Stator Lift

Monthly Summary – September 2013

<table>
<tr><td colspan="4">SPILLS</td></tr>
<tr><td colspan="2">No. of Spills:</td><td colspan="2">8; Spill Reports 390-394 (see Figure 6 for LMRP spills breakdown).</td></tr>
<tr><td colspan="2">Classification of Spills:</td><td colspan="2"><u>KAP Project Classification</u>
Minor – 4 Moderate – 1 Major –0 To Water - 0
<u>MOE Classification</u>
Non-reportable - 4
Reportable to MOE
- Class C – 1
- Class B – 0
- Class A – 0</td></tr>
<tr><td colspan="4">Reportable Spills</td></tr>
<tr><td>No.</td><td>Quantity /Product Spilled</td><td>Spill Site</td><td>Reason for being Reportable</td></tr>
<tr><td>1</td><td>95 L/ Form Oil</td><td>Kipling - Upper Laydown</td><td>Reportable spill on-land. One of the drums filled with form oil was tipped over and had spilled approximately half of its contents on the ground. The Kipling crew was asked to keep drums tightly sealed with the mechanisms off until it is required to prevent spills should drums be tipped over accidentally in the future.</td></tr>
<tr><td colspan="3">KAP Project Classification
Minor: ≤ 10L
Moderate: Between 10L and 100L
Major: ≥100L
To Water: Any amount is reportable to the MOE
(See Figure 7: KAP Spills Response Flowchart)</td><td>MOE Classification (see Reportable and Non-reportable Spills definition below)
Non-reportable: < 100L
Reportable to MOE
• Class C - Less Serious
• Class B – Serious
• Class A – Very Serious</td></tr>
<tr><td colspan="4">Sediment Pond Exceedance of Effluent Objective</td></tr>
<tr><td>No. of Exceedance days recorded</td><td colspan="2">Location</td><td>Mitigation Measures used</td></tr>
<tr><td>4 (Sept. 1-4)</td><td colspan="2">Kipling</td><td>The exceedence resulted from excavations required as part of the earthberm cofferdam removal at Kipling. Material was being removed close to one of the main seepage points of the cofferdam resulting in an increase of suspended material in the pond’s inflow. Alum was added to precipitate out the sediment and reduce TSS levels. To further mitigate the issue KAP started to pump the water through the bush to the river, this resulted in TSS levels lowering to the required turbidity objective.</td></tr>
<tr><td>5 (Sept. 5-7, 23 and 30)</td><td colspan="2">Smoky Falls</td><td>The cause of the exceedance was the heavy rainfall at site in the beginning and end of September as well as the excavation work that was ongoing at the Smoky Falls East Gravity Dam to expose the bedrock prior to backfilling. KAP added alum to the pond on both those weeks to help reduce turbidity levels.</td></tr>
</table>

Spills Response

When **any spill** occurs on site, KAPs spill response process is to be followed (Figure 7). This includes notification of the Supervisor and KAPs Environmental Department, and an assessment of the severity of the spill. Regardless of the quantity, clean-up measures are implemented for **every spill** using spill kits that are available throughout the site (materials used for clean-up and any contaminated soil are removed from the site). A spill report is then prepared for **each spill that occurs** which outlines the location, type, severity and quantity of the spill, in addition to details on how the spill occurred, how it was cleaned up and measures implemented on how the spill could be avoided for the future. This report is sent out to several OPG and Hatch representatives as well as all EWG members.

Reportable and Non-reportable Spills:

Section 92 of the *Environmental Protection Act* (EPA) requires that **a spill** be reported forthwith to the Ministry of the Environment. The definition of a spill in the EPA (subsection 91.1) is: a discharge,

(a) into the natural environment,
(b) from or out of a structure, vehicle or other container, and
(c) that is abnormal in quality (e.g. the product spilled) or quantity (e.g. the amount spilled) in light of all the circumstances of the discharge.

Spills that are exempt from reporting to the Ministry of the Environment (ie. non-reportable) are discharges that don't fall within the 'spill' definition or, are exempted under EPA Regulation 675/98, *Classification and Exemptions of Spills and Reporting of Discharges*. This includes (not limited to) Class VI – Motor Vehicle exemptions, which exempts reporting of spills that are less than 100 L of fluid from a motor vehicle.

Subsection 30 .2 of the *Ontario Water Resources Act*, requires that the discharge of any material of any kind into water that is not in the normal course of events (e.g. regardless of quantity or quality) be reported to the Ministry of the Environment.

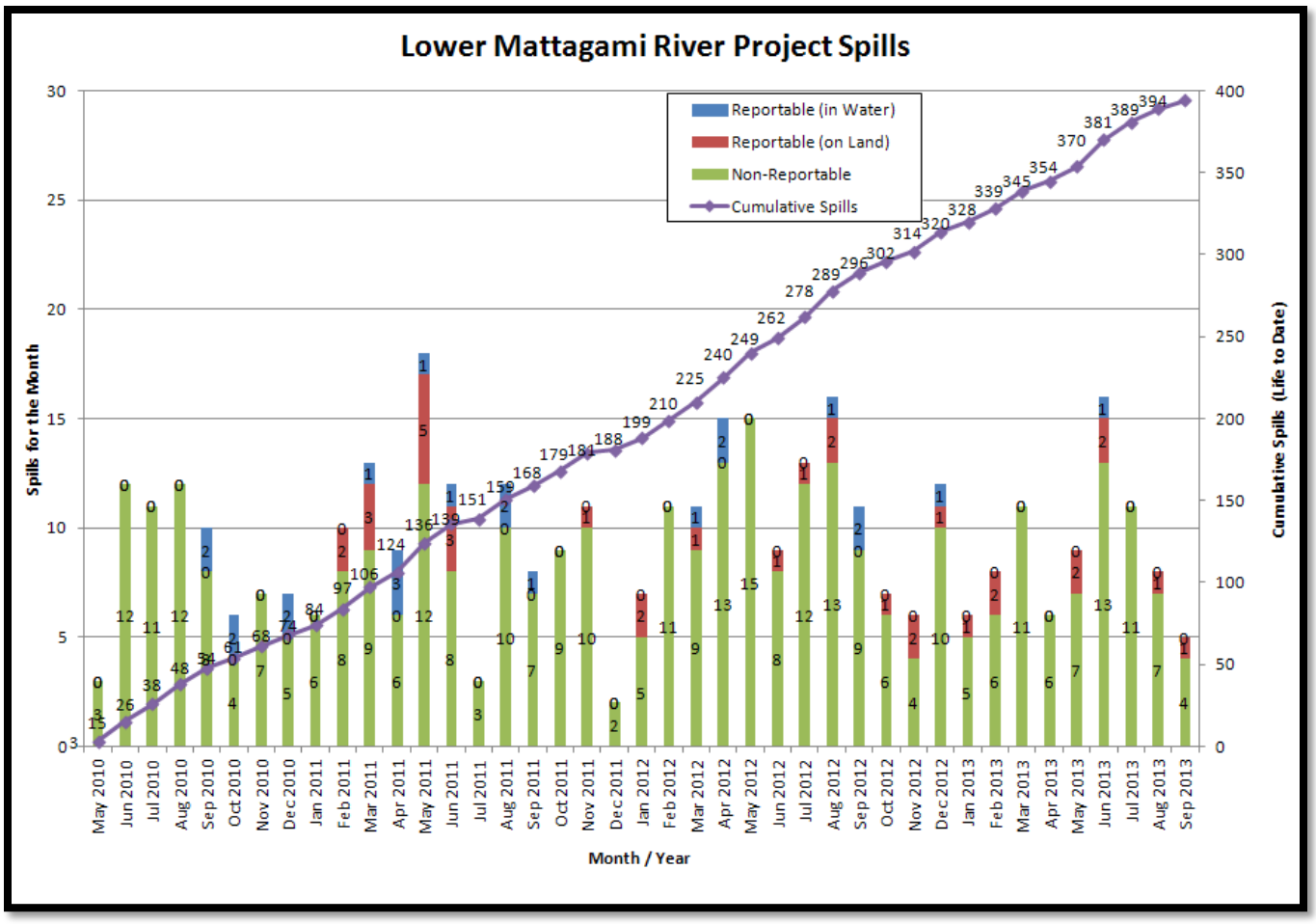


Figure 6: Lower Mattagami River Project spills

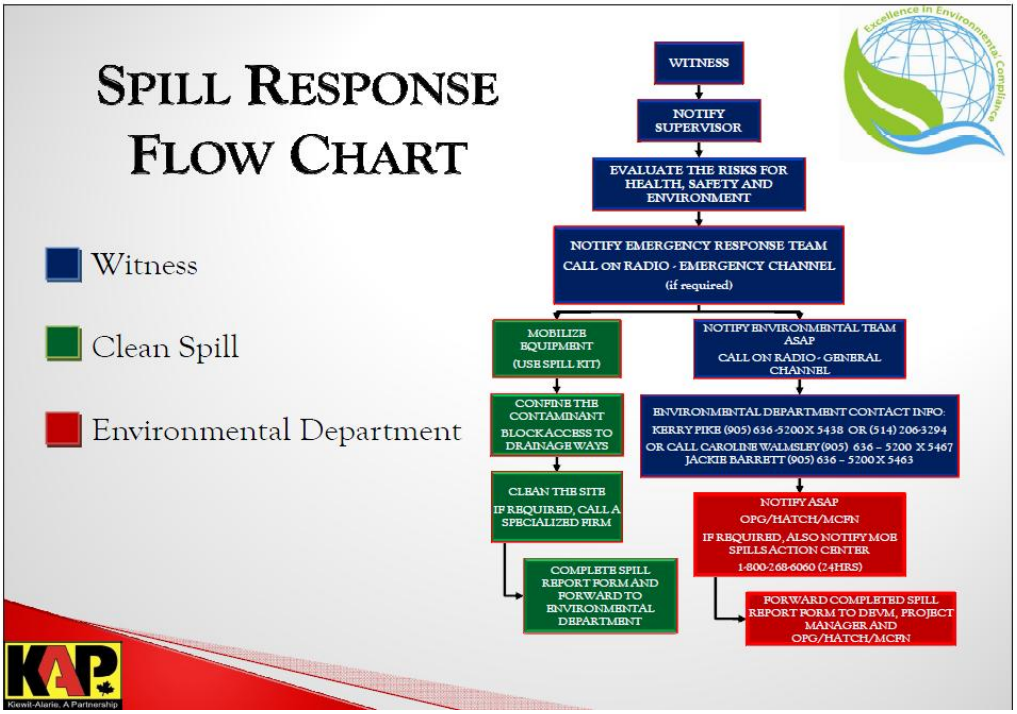
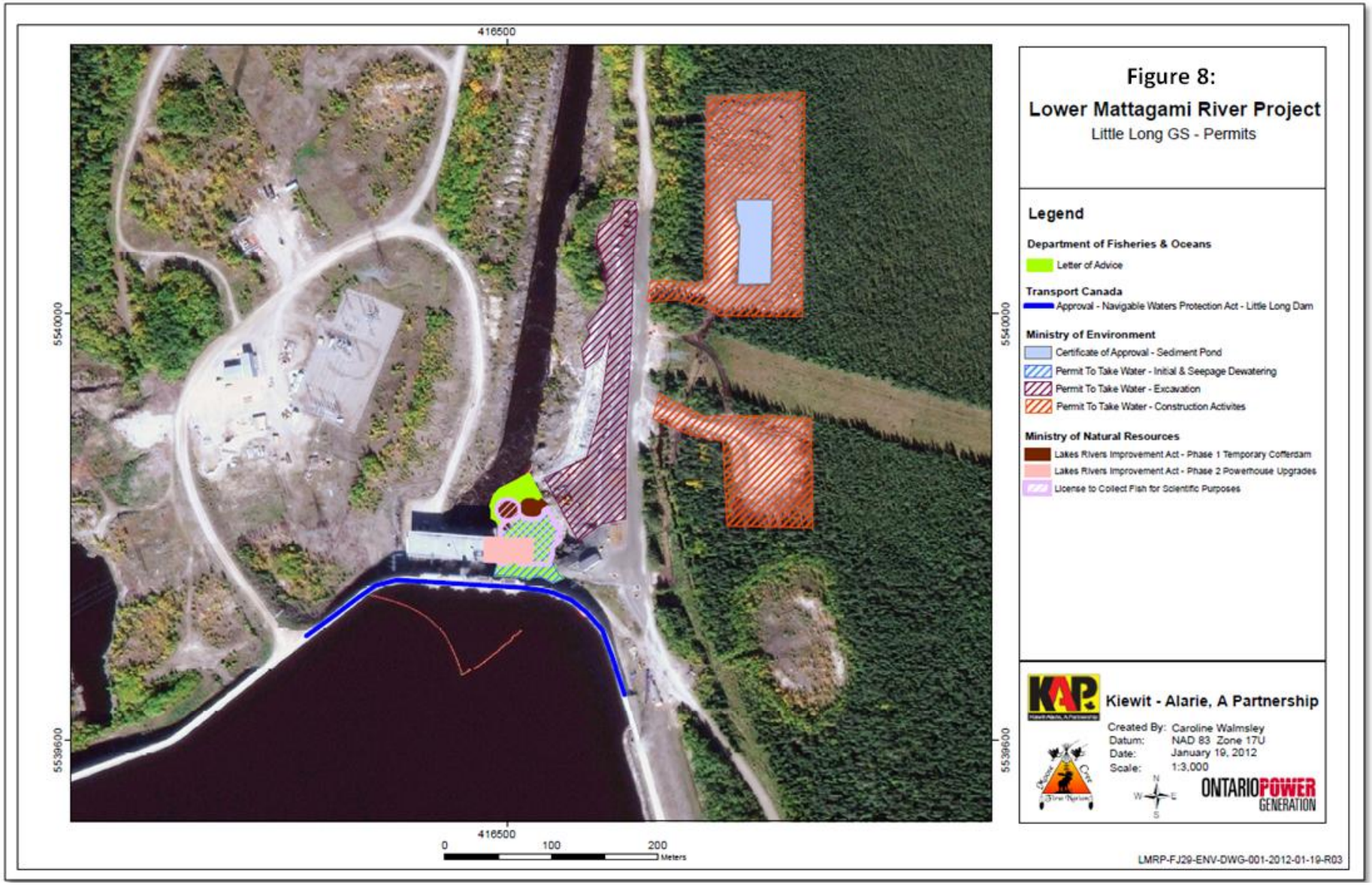


Figure 7: KAP Spills Response Flowchart

PERMIT AND APPROVAL REVIEW			
No. Reviewed:	0	List:	
No. Sent to KAP:	0	List:	
Reports Review			
No. Reviewed for KAP	0	List:	
No. Sent to KAP	0	List:	
No. Reviewed for MECC	5	List:	On-going: • Cost Benefit Analysis of Mitigating and Reducing Spill in Adam Creek • Mercury in Fish Flesh Summary Report • Fish Habitat Assessment Report • Terrestrial Habitat Restoration Downstream of Kipling GS • Draft Environmental Effects Monitoring Plan • KAP LMRP Site Rehabilitation Plan
No. Review Completed	4	List:	• Operation Overview Report • Waste Management Plan • Noise Control Plan • The Interim Measures Agreement as it relates to EA Term and Condition 14c (Permit Review and Compliance Monitoring Protocol)
REQUESTS FOR INFORMATION (RFIs)			
No. Reviewed:	0	List:	n/a
No. Sent to KAP:	0	List:	n/a
See figures 8 to 13 below for site location of the permits that have been or are pending approval.			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200
Meters
Figure 8:
Lower Mattagami River Project
Little Long GS - Permits
Legend
Department of Fisheries & Oceans
Letter of Advice
Transport Canada
Approval - Navigable Waters Protection Act - Little Long Dam
Ministry of Environment
Certificate of Approval - Sediment Pond
Permit To Take Water - Initial & Seepage Dewatering
Permit To Take Water - Excavation
Permit To Take Water - Construction Activites
Ministry of Natural Resources
Lakes Rivers Improvement Act - Phase 1 Temporary Cofferdam
Lakes Rivers Improvement Act - Phase 2 Powerhouse Upgrades
License to Collect Fish for Scientific Purposes
Kiewit - Alarie, A Partnership
Created By: Caroline Walmsley
Datum: NAD 83 Zone 17U
Date: January 19, 2012
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LMRP-FJ29-ENV-DWG-001-2012-01-19-R03

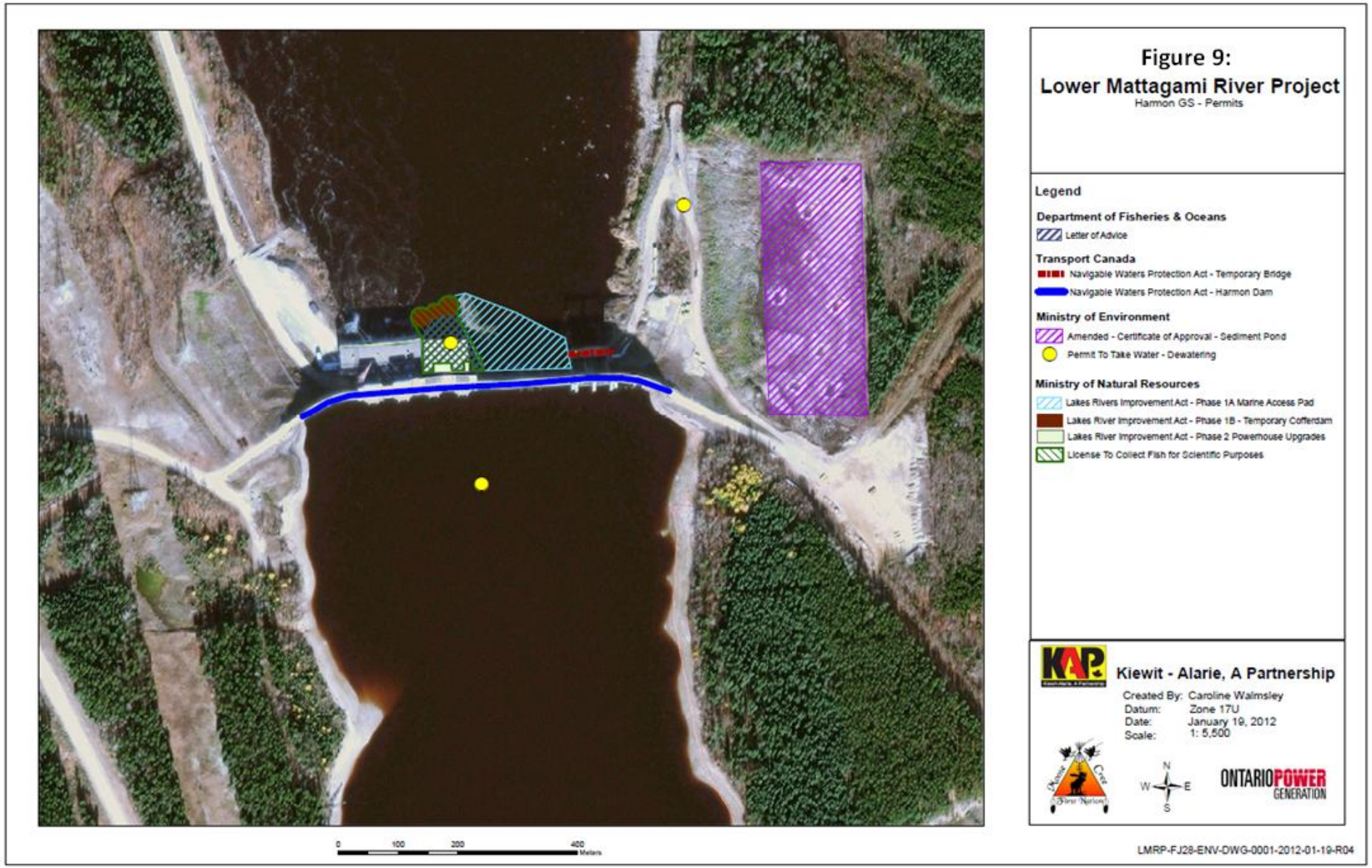
Figure 9:
Lower Mattagami River Project
Harmon GS - Permits
Legend
Department of Fisheries & Oceans
Letter of Advice
Transport Canada
Navigable Waters Protection Act - Temporary Bridge
Navigable Waters Protection Act - Harmon Dam
Ministry of Environment
Amended - Certificate of Approval - Sediment Pond
Permit To Take Water - Dewatering
Ministry of Natural Resources
Lakes Rivers Improvement Act - Phase 1A Marine Access Pad
Lakes River Improvement Act - Phase 1B - Temporary Cofferdam
Lakes River Improvement Act - Phase 2 Powerhouse Upgrades
License To Collect Fish for Scientific Purposes
Kiewit - Alarie, A Partnership
Created By: Caroline Walmsley
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LMRP-FJ28-ENV-DWG-0001-2012-01-19-R04

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Figure 10:
Lower Mattagami River Project
Kipling GS - Permits

Legend

Department of Fisheries & Oceans
- Letter of Advice

Transport Canada
- Approval - Navigable Waters Protection Act - Kipling Dam

Ministry of Environmental
- Amended Certificate of Approval - Sediment Pond
- Permit To Take Water - Dewatering

Ministry of Natural Resources
- Lakes River Improvement Act - Phase 1A - Marine Access Pad
- Lakes Rivers Improvement Act - Phase 1A -1 Deflector Wall
- Lakes Rivers Improvement Act - Phase 1A - 2 Spillway Location Revised
- Lakes Rivers Improvement Act - Phase 1B Temporary Cofferdam
- Lakes Rivers Improvement Act - Phase 2 Powerhouse Upgrades
- Licence to Collect Fish for Scientific Purposes

Kiewit - Alarie, A Partnership

Created By: Caroline Walmsley
Datum: Zone 17U
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ONTARIO POWER GENERATION

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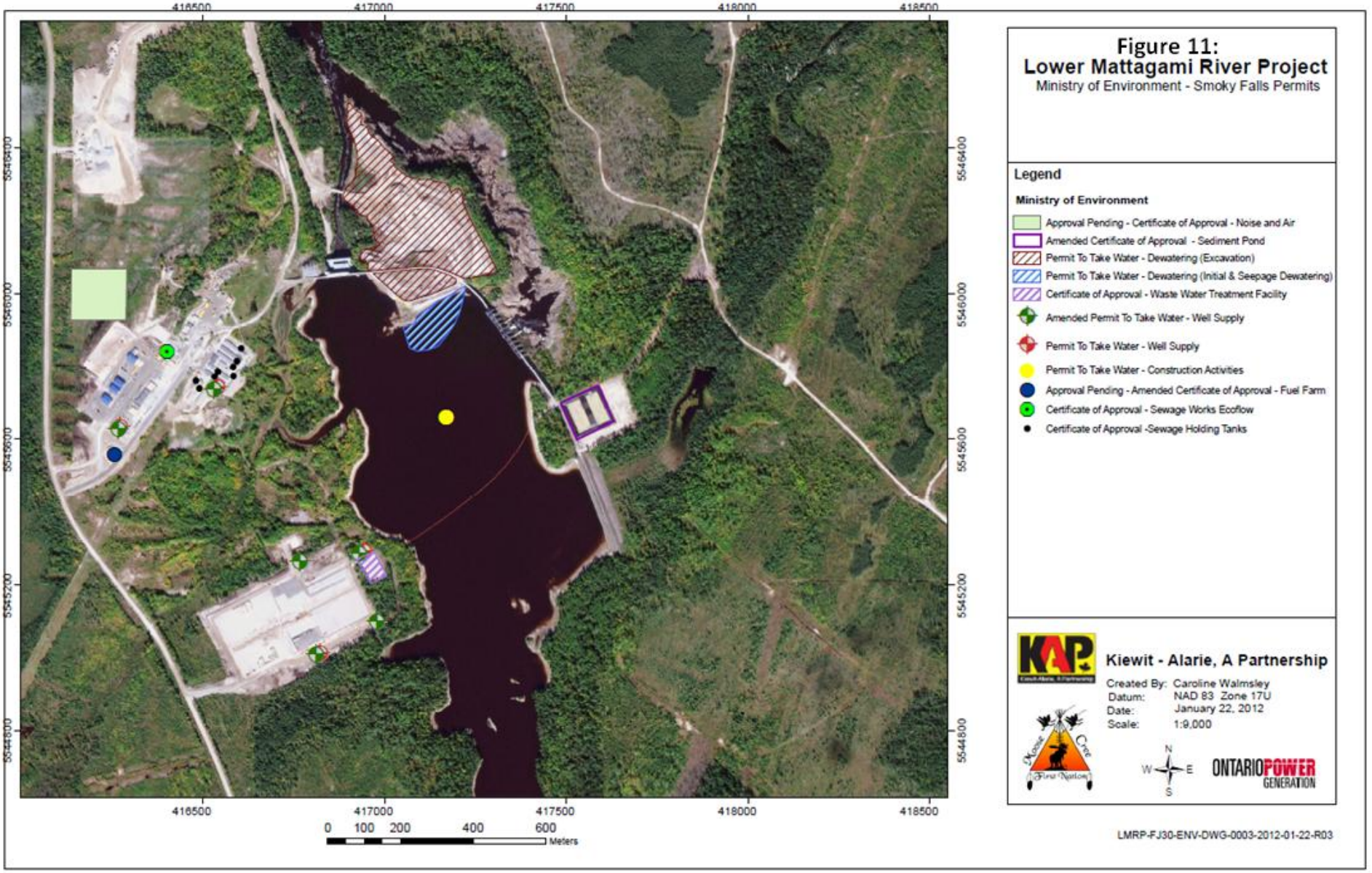
Figure 11:
Lower Mattagami River Project
Ministry of Environment - Smoky Falls Permits
Legend
Ministry of Environment
Approval Pending - Certificate of Approval - Noise and Air
Amended Certificate of Approval - Sediment Pond
Permit To Take Water - Dewatering (Excavation)
Permit To Take Water - Dewatering (Initial & Seepage Dewatering)
Certificate of Approval - Waste Water Treatment Facility
Amended Permit To Take Water - Well Supply
Permit To Take Water - Well Supply
Permit To Take Water - Construction Activities
Approval Pending - Amended Certificate of Approval - Fuel Farm
Certificate of Approval - Sewage Works Ecoflow
Certificate of Approval -Sewage Holding Tanks
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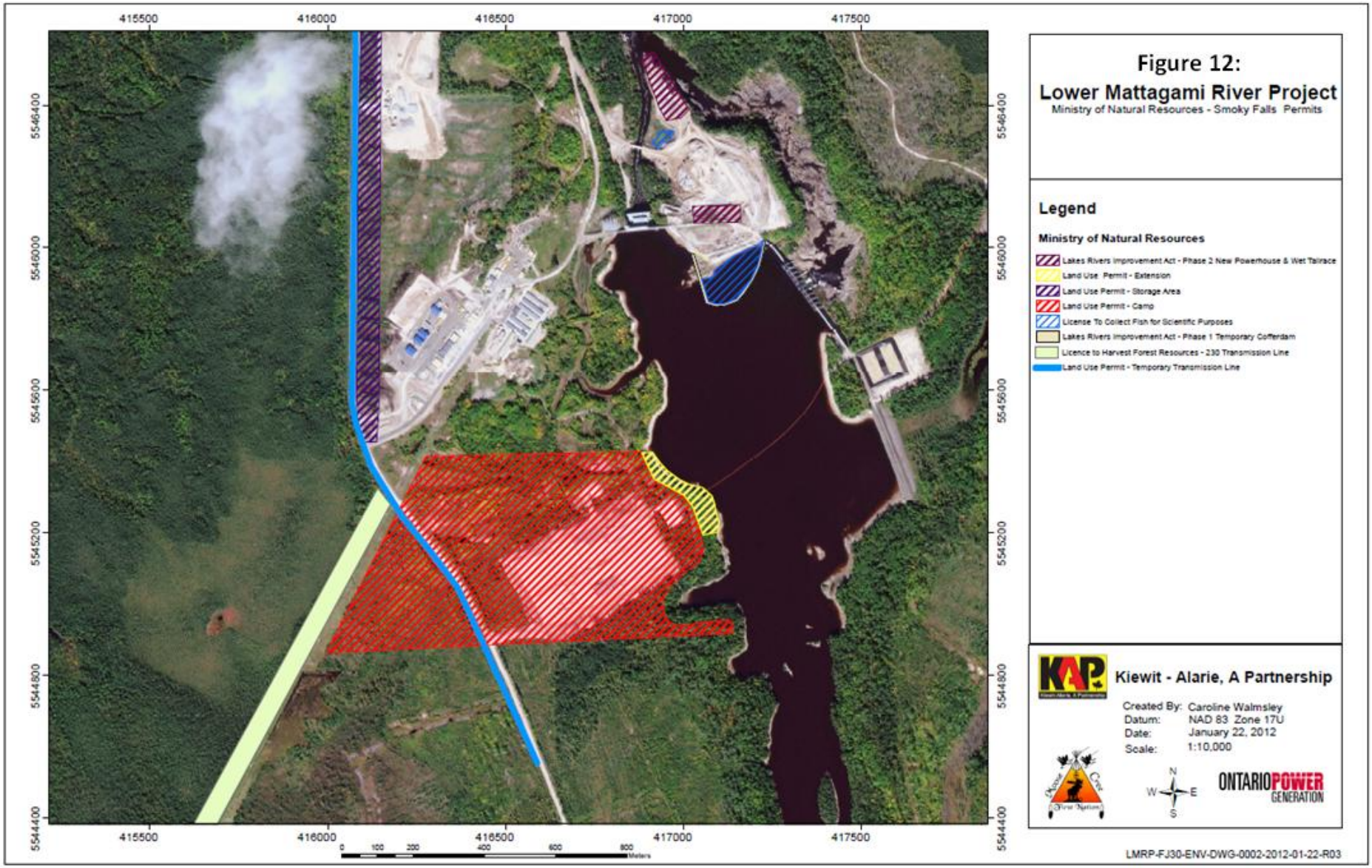
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Figure 12:
Lower Mattagami River Project
Ministry of Natural Resources - Smoky Falls Permits
Legend
Ministry of Natural Resources
Lakes Rivers Improvement Act - Phase 2 New Powerhouse & Wet Tailrace
Land Use Permit - Extension
Land Use Permit - Storage Area
Land Use Permit - Camp
License To Collect Fish for Scientific Purposes
Lakes Rivers Improvement Act - Phase 1 Temporary Cofferdam
Licence to Harvest Forest Resources - 230 Transmission Line
Land Use Permit - Temporary Transmission Line
Kiewit - Alarie, A Partnership
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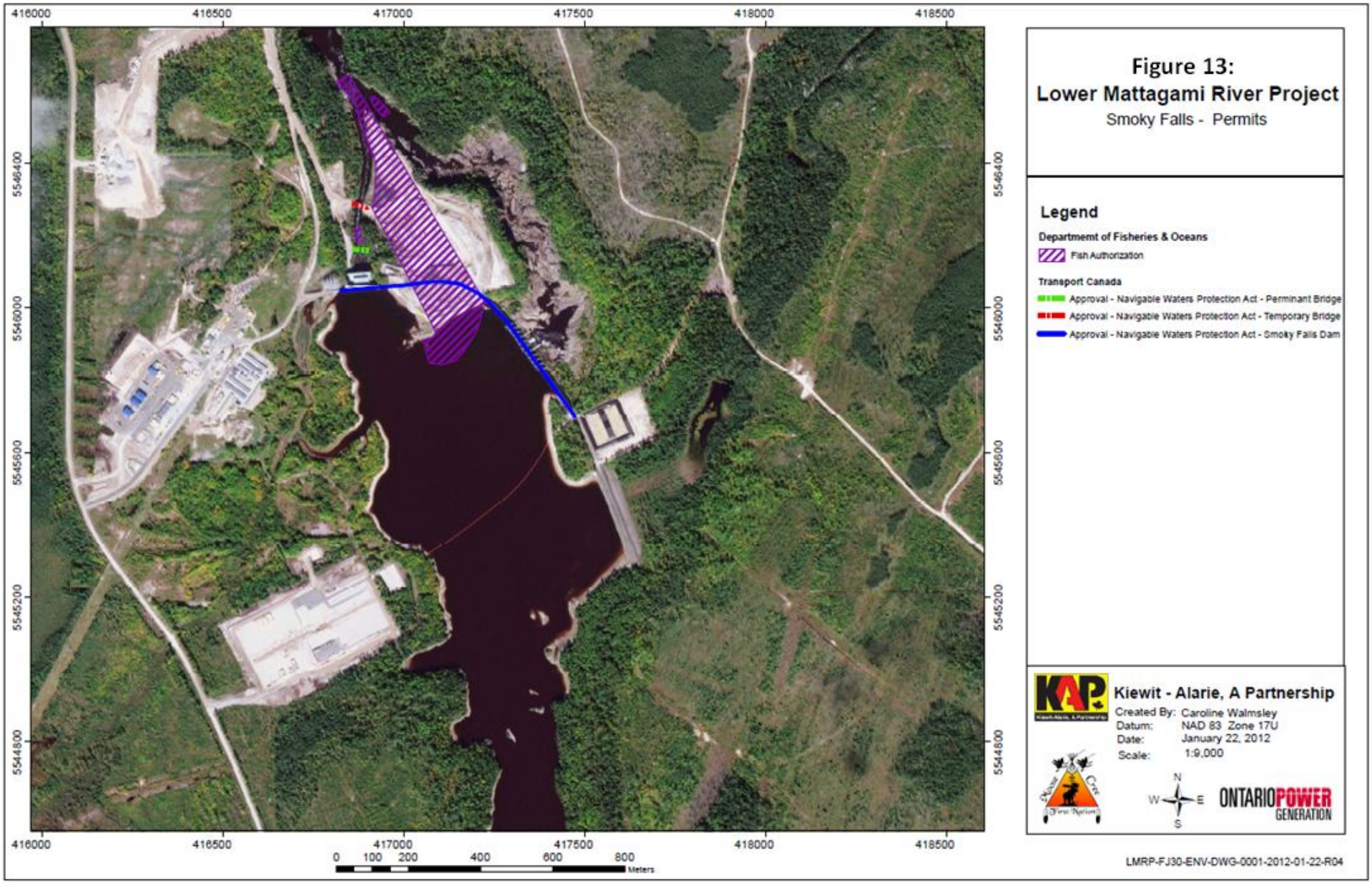
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Figure 13:
Lower Mattagami River Project
Smoky Falls - Permits
Legend
Department of Fisheries & Oceans
Fish Authorization
Transport Canada
Approval - Navigable Waters Protection Act - Perminant Bridge
Approval - Navigable Waters Protection Act - Temporary Bridge
Approval - Navigable Waters Protection Act - Smoky Falls Dam
KAP
Kiewit - Alarie, A Partnership
Created By: Caroline Walmsley
Datum: NAD 83 Zone 17U
Date: January 22, 2012
Scale: 1:9,000
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ONTARIO POWER GENERATION
LMRP-FJ30-ENV-DWG-0001-2012-01-22-R04

Issues and Concerns
No Issues this month.