

Timeline and overview of the Alunorte situation

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Introduction

The purpose of this memo is to give a brief, yet extensive overview of what happened immediately before, during and after the extreme rainfall and subsequent flooding of Barcarena in the state of Pará in Northern Brazil, in mid-February. This includes the direct consequences to the alumina refinery Alunorte, the aluminium plant Albras, and the bauxite mine Paragominas, but also related consequences for employees and local communities.

The memo also includes some related topics of interest as well as relevant terms and definitions.

Increasing local dissatisfaction	
2017	<ul style="list-style-type: none"> In 2017, there were several demonstrations near our operations in Barcarena, mainly targeting local and federal authorities. Of these, a few targeted also Hydro directly. In April, about 300 illegal dwellings were removed from Hydro industrial land by the authorities. Hydro hired the local NGO Instituto Peabiru to act as a third-party observer to report any human rights violations. The operation was described as peaceful with the vast majority of people removing their belongings voluntarily. Hydro assisted the settlers in transporting their belongings to a location of their choice. <p>In one of the affected areas, there were no dwellings, but illegal logging took place, and an illegal sawmill was identified. This is an area that later has been claimed by the Tauá community.</p>
February 13, 2018	<ul style="list-style-type: none"> Several days before the extreme rainfall and subsequent flooding of Barcarena and Alunorte, there were social media reports of ruptures from the bauxite residue deposits at Alunorte: “We call on the environmental authorities to take immediate action to prevent a tragedy,” said Maria do Socorro Silva, leader of the Burajuba community. (Link : http://www.ver-o-fato.com.br/2018/02/moradores-de-barcarena-alertam-para.html)
Flooding and shutdown	
February 17-18, 2018	<ul style="list-style-type: none"> On February 17-18, heavy rainfall led to flooding in the Barcarena region and resulted also in flooding at Alunorte. The 1-meter freeboard limit in the containment basins of the bauxite residue deposit DRS1 was exceeded and remained above the limit until February 27. In addition, there were three other non-compliances: <ul style="list-style-type: none"> discharge of rainwater through the Canal Velho into the Pará river (see also March 11) rainwater leak from the plant area and into the environment through a crack in an abandoned pipe (see February 26) discharge of rainwater from the roof of the coal storage shed into the Pará river (see March 19) There were no leaks or overflow from the bauxite residue deposit areas. This was confirmed on site by all relevant inspecting authorities, and later confirmed by relevant authorities in public hearings, including in a congressional hearing in Brasilia on 15 March. More than 50 external inspections were made in the coming days by among others Ibama, Semas, Semade, the local fire brigade and IEC. Surveillance authorities identified a small leak of rainwater through crack in the concrete seal from a pipe without direct connection to the deposit areas of Alunorte. The pipe in question was originally used during the construction of that

	<p>area in Alunorte and has not been in use since then. Hydro immediately resealed the pipe, when the inspection pointed this out. Hydro estimates that the rain water entered this pipe during February 16 and 17, and that the total amount that escaped the area through the pipe was very limited. Inspections revealed four more pipes. These were inspected and found to be adequately sealed. This was confirmed by the SGW report 9 April.</p> <ul style="list-style-type: none"> In respect of the overall rainfall situation, Hydro and Alunorte recognize that we did not adequately inform the local communities about the situation, not giving them reassurance that they were not directly affected.
February 19, 2018	<ul style="list-style-type: none"> Information related to the situation at Alunorte published on Hydro's Brazilian website Source: https://www.hydro.com/pt-BR/imprensa/noticias/2018/apos-chuvas-fortes-em-barcarena-areas-dos-depositos-de-residuos-operam-normalmente/
February 20, 2018	<ul style="list-style-type: none"> External committee of the House of Representatives established to investigate a possible disruption of mining residues in Barcarena. The request was raised by Congressman Edmilson Rodrigues.
February 22, 2018	<ul style="list-style-type: none"> First report from Instituto Evandro Chagas published, claiming that Hydro has polluted drinking water in local communities nearby.
February 23, 2018	<ul style="list-style-type: none"> In cooperation with local authorities, Hydro starts to distribute drinking water to affected communities of Vila Nova, Burajuba and Bom Futuro to aid the situation. Dialogue meetings with community leaders are initiated and held on a weekly basis. <ul style="list-style-type: none"> Source: https://www.hydro.com/pt-BR/imprensa/noticias/2018/hydro-fornecera-agua-potavel-para-comunidades-locais/ External committee of the House of Representatives visits Alunorte.
February 24, 2018	<ul style="list-style-type: none"> Semas requires Alunorte to comply with the requirement of 1-meter freeboard by Monday February 26. This was published on Semas' website and Hydro was not notified by Semas. In the statement: <ul style="list-style-type: none"> Semas noticed that there had already been a decrease in the basins. Semas's geologist also reported that the company received another notification on the Saturday requesting some items: guaranteeing the distribution of water to neighboring communities; appoint representatives to accompany the surveys that were to be carried out daily; photos from the day of the incident to know what happened; and an environmental diagnosis of the area (soil and water - surface and underground). If these conditions were not met by Monday, February 26, the State would take other measures, which were already being studied by the State Attorney General (PGE). Source : https://www.semas.pa.gov.br/2018/02/25/governo-do-estado-notifica-empresa-para-atender-prazo/
February 24, 2018	<ul style="list-style-type: none"> Hydro forms an internal expert task force to establish and verify the facts and circumstances related to the rainfall on February 16-17. The task force is reporting directly to President and CEO Svein Richard Brandtzæg.

	<ul style="list-style-type: none"> Source: https://www.hydro.com/en/media/news/2018/hydro-forms-expert-task-force-to-review-barcarena-situation/
<p>February 26, 2018</p>	<ul style="list-style-type: none"> Brazil's Minister of Environment, José Sarney Filho state the possibility of putting an embargo on Alunorte, as a measure against the company. (Link: https://www.hydro.com/pt-BR/imprensa/noticias/2018/hydro-analisa-declaracoes-do-ministro-do-meio-ambiente-sobre-a-refinaria-de-alumina-hydro-alunorte/) Provision of drinking water to nearby communities in cooperation with the Civil Defense, water reservoirs distributed from March 2. Instituto Evandro Chagas reports that Alunorte has done unlicensed emissions through a hidden pipe. https://www.hydro.com/en/media/news/2018/third-party-consultancy-analysis-of-water-and-soil-outside-alunorte/
Political and regulatory action	
<p>February 27, 2018</p>	<ul style="list-style-type: none"> Semas orders Alunorte to cut production by 50 percent by March 1 due to non-compliance with a resolution to achieve a freeboard of 1 meter in DRS1 within the deadline, February 26. The 1-meter freeboard requirement was met on February 27. Semas introduces daily fines of ca BRL 1M until the freeboard limit is reached. Semas introduces a daily fine of BRL 0.5M if deadline of production cut is not met. Semas also requires Hydro to stop using one of two tailing dams at its Paragominas bauxite mine, located around 240 km west of Alunorte. <ul style="list-style-type: none"> Source: https://www.semas.pa.gov.br/2018/02/27/estado-triplica-multa-contrahydro-e-determina-reducao-da-producao-pela-metade/ Source: https://www.hydro.com/en/media/news/2018/para-authorities-to-order-50-production-cut-at-alunorte/ Source: https://www.hydro.com/en/media/news/2018/hydro-prepares-to-reduce-alunorte-production-by-50/ The second Instituto Evandro Chagas (IEC) report (technical report 002/2018) alleges that there has been overflow of bauxite residue from Alunorte. In a later press conference, IEC claimed that they had found high levels of heavy metals in the drinking water. <p>According to Hydro research, the referenced heavy metal values are within drinking water quality according to World Health Organization (WHO) and Brazilian CONAMA standards.</p>
<p>February 28, 2018</p>	<ul style="list-style-type: none"> Ibama issues notification ordering Alunorte to discontinue test and commissioning at DRS2, the new bauxite residue deposit. The press filters are licensed under DRS2 and are thus also discontinued. Ibama fines Hydro a total of BRL 20 million, split between two fines of BRL 10 million each. The fines relate to conducting potentially polluting activity without a valid license at DRS2, and a drainage pipe at the Alunorte industrial area. The drainage pipe referred to relates to a disused sealed pipe from the construction of Alunorte refinery, discovered during inspections following the heavy rainfall in February (see February 16-17). Source : https://www.ibama.gov.br/noticias/422-2017/1375-ibama-aplica-multas-de-r-20-milhoes-e-embarga-instalacoes-da-hydro-alunorte-no-pa

	<ul style="list-style-type: none"> Source: https://www.hydro.com/en/media/news/2018/court-orders-alunorte-to-cut-production-by-50-and-halt-operations-at-drs2-bauxite-residue-disposal/
February 28, 2018	<ul style="list-style-type: none"> Demonstrations in Barcarena in front of Alunorte, protesting against Hydro's and Alunorte's operations. Source: https://www.diarioonline.com.br/noticias/para/noticia-490132-comunidade-de-barcarena-acampa-na-frente-da-hydro.html
March 1, 2018	<ul style="list-style-type: none"> On March 1, a regional court, based on a request from the public prosecutor in state of Pará, orders Alunorte to cut production by 50 percent and halt operations at DRS2. The order was due to concerns that extreme rainfall and subsequent flooding had led to leakages from Alunorte into the nearby river and causing contamination. The court further ruled that Alunorte should halt operations at the DRS2, and that a new license could not be issued until the integrity of DRS2 has been fully verified. Source: https://www.hydro.com/en/media/news/2018/court-orders-alunorte-to-cut-production-by-50-and-halt-operations-at-drs2-bauxite-residue-disposal/
Aiming to restore normal operations	
Primo March 2018	<ul style="list-style-type: none"> Hydro's CEO travels to Brazil to meet local communities and local management. He is informed about the event and the use of Canal Velho. Source : https://www.hydro.com/en/media/news/2018/brandtzaeg-visits-alunorte-and-surrounding-communities/
March 2, 2018	<ul style="list-style-type: none"> Health services provided in collaboration with the Municipality from March 2 to March 13, and again from March 19. This includes diagnosis, treatment and door to door mapping, as well as water and soil sampling, by the national Red Cross. In addition, Alunorte provided doctors/specialists for the state-run hospital. Source: https://hydro.com/contentassets/36fb535dde8d400bafa3c7f026ee51a7/press-briefing---alunorte-situation---15march2018---final.pdf see slide 11
March 5, 2018	<ul style="list-style-type: none"> CFO Eivind Kallevik is appointed interim head of Bauxite & Alumina with immediate effect, replacing Silvio Porto. Kallevik remains in his position as CFO. Hydro also communicates about collaboration with local institutions on humanitarian relief to assist communities in Barcarena within health and water. For neighboring communities Vila Nova, Burajuba and Bom Futuro, Hydro commits to working with local partners and investing in proper water supply. Hydro further commits to work with community, civil society and government to clarify the sources of water pollution and other water-related issues in the Barcarena region. Hydro also commits to review and consider further strengthening of Alunorte's water treatment system as a proactive response to possible future climate and weather changes. The project will be led by Silvio Porto, reporting to Kallevik. Source: https://www.hydro.com/en/media/news/2018/hydro-takes-new-initiatives-to-resolve-alunorte-situation/

<p>March 7, 2018</p>	<ul style="list-style-type: none"> Hydro commissions Brazilian environmental consultancy SGW Services to conduct an independent environmental review of Alunorte. Source: https://www.hydro.com/en/media/nyheter/2018/hydro-commissions-sgw-to-conduct-independent-environmental-review-of-alunorte/ First meeting with Ministério Público, attended by among others Hydro's EVP and CFO, EVP and head of Bauxite & Alumina, EVP and head of CSR, Legal and Compliance, and EVP and head of People & HSE. <ul style="list-style-type: none"> Source: https://www.hydro.com/globalassets/07-media/brasil-situation/documents/press-briefing-alunorte-situation-15march2018-final.pdf
<p>March 11, 2018</p>	<ul style="list-style-type: none"> <i>First public communication of use of Canal Velho:</i> In order to release excess rainwater from the factory area, Alunorte released rainwater through the Canal Velho water canal. There was no indication of negative environmental impact from the release. The release of partly treated rainwater through this canal was done to relieve the water treatment system during the heavy rain. The discharges of treated rainwater on February 17 and periodically between February 20-25 were not covered by the current license. Alunorte notifies environmental authorities of Pará, Semas, twice during the situation. Local communities were not informed as the rainwater was discharged into the Pará river. The canal had also been used before to discharge rainwater in extreme rainfall events, last time in in May 2017. Semas was also notified after this event and Alunorte had applied for a license to use the canal during extreme rainfalls. The application had neither been approved nor rejected, despite reminders from Alunorte. Source : https://www.hydro.com/en/media/news/2018/about-rainwater-release-from-canal-velho/ Source : https://www.hydro.com/en/media/news/2018/canal-velho/
<p>March 12, 2018</p>	<ul style="list-style-type: none"> Paulo Sérgio Almeida Nascimento, one of the community leaders of the Association of Caboclos, Indígenas e Quilombolas da Amazônia (Cainquiama), was shot dead by an unknwn person. Nascimento was, according to media, one of the most vocal protestors of Alunorte. Prior to the incident, members of the association said they were harassed by the police and filed for protection. Protection was denied. The harassment was related to a supposed invasion of Cainquiama headquarters (Maria do Socorro's home). The lawyer of Cainquiama, Ismael Moraes made several claims: <ul style="list-style-type: none"> "The same police officers who do private security for Hydro were the ones who invaded the headquarters of the association, and we believe that the relations are evident. Pablo Sergio had no enemy or disaffection." "These threats were coming and going after the Hydro embargo. There are witnesses who report that the vehicle in which the occupants who murdered Paulo Sergio were covered by one of the Military Police" Ismael Moraes is also the lawyer involved in the case claiming Hydro has built DRS2 in an ecological reserve area. Several international media outlets (including The Guradian, Frankfurter Allgemeine Zeitung and Aftenposten) made a more direct link between Hydro and the murder. Third party sources confirm in public and/or to Hydro that there is no reason to believe that neither Hydro nor Alunorte have been involved in such criminal activities. Sources : <ul style="list-style-type: none"> https://g1.globo.com/para/noticia/lider-comunitario-que-denunciava-crimes-ambientais-em-barcarena-e-morto-a-tiros.ghtml

	<ul style="list-style-type: none"> • https://g1.globo.com/pa/para/noticia/policia-ouve-testemunhas-do-assassinato-de-lider-comunitario-em-barcarena.ghtml • http://www.diarioonline.com.br/noticias/para/noticia-392784-.html
March 13, 2018	<p>Preliminary findings from the internal task force were published. It revealed that Hydro did not have the full overview of the situation and the course of events, but also that there were no indications of leaks or overflow from the bauxite residue deposit areas.</p> <ul style="list-style-type: none"> • The public prosecutor recommended Hydro to block the entrance to Canal Velho. • Source: https://www.hydro.com/en/media/news/2018/norsk-hydro-preliminary-findings-from-internal-task-force/
March 13, 2018	<ul style="list-style-type: none"> • External committee of the House of Representatives – public hearing with Hydro representatives.
March 14, 2018	<ul style="list-style-type: none"> • Workers from Alunorte protest against the embargo. Source : https://g1.globo.com/pa/para/noticia/trabalhadores-realizam-protesto-em-barcarena-contra-embargo-da-hydro.ghtml
Adapting to embargo and identifying society's needs	
March 15, 2018	<ul style="list-style-type: none"> • Relevant authorities including Ibama reconfirm in a congressional hearing in Brasilia the integrity of the bauxite residue deposits and that there has been no spill or overflow.
March 15 and 16, 2018	<ul style="list-style-type: none"> • Hydro takes measures to preserve jobs at Paragominas and Alunorte, and in total 1,000 employees were on collective vacations from end of March/early April. • Source: https://www.hydro.com/en/media/news/2018/hydro-takes-measures-to-preserve-jobs-in-paragominas/ • Source: https://www.hydro.com/en/media/news/2018/hydro-takes-measures-to-preserve-jobs-at-alunorte/
March 16, 2018	<ul style="list-style-type: none"> • Hydro's CEO apologizes for not informing local communities. "The local communities have not received the information they deserve, and they have not found us trustworthy. For that, I apologize." • Hydro announces upgrade of water treatment system at Alunorte for NOK 500 million. This increases the water treatment capacity by 50 percent and the reservoir capacity by 150 percent and improves the robustness of the plant to withstand future extreme weather conditions. • Source : https://www.hydro.com/en/media/news/2018/hydro-to-upgrade-water-treatment-system-at-alunorte/

<p>March 16, 2018</p>	<ul style="list-style-type: none"> Workers in Paragominas demonstrate against the embargo. Source : https://g1.globo.com/pa/para/noticia/funcionarios-da-hydro-alunorte-protestam-na-frente-da-mineradora-em-paragominas.ghtml
<p>March 19, 2018</p>	<ul style="list-style-type: none"> Unlicensed discharge of rainwater from the roof of the coal storage shed is discovered during a Semas inspection. The notice relates to an unlicensed connection between the Alunorte refinery and a licensed drainage canal from the adjacent Albras aluminium plant, leading to discharge of rainwater from the roof of the coal storage shed at Alunorte into the Pará River through this internal canal (Canal 412). Subsequently, Hydro discovers an additional inflow of water to the canal from the former hydrate storage area. Hydro's CEO apologized for the second time: "We have discharged untreated rain and surface water into the Pará River. This is completely unacceptable and in breach with what Hydro stands for. On behalf of the company, I personally apologize to the communities, authorities and the society." In relation to this, Hydro expands the scope of the ongoing independent review of Alunorte by Brazilian environmental consultancy SGW Services to include all interfaces with areas adjacent to the refinery operation. Hydro's Internal Audit is conducting a full review of all licenses, complementing SGW's review of Alunorte's permits and relevant legislation Source : https://www.hydro.com/en/media/news/2018/hydro-expands-review-and-launches-audit-following-more-untreated-rainwater-discharges-from-alunorte/
<p>Dialogue and efforts to resolve deadlock</p>	
<p>March 20, 2018</p>	<ul style="list-style-type: none"> Alunorte arranges another open community meeting in Barcarena. While previous meetings had been with one community at a time, this meeting includes all neighboring communities as well as local associations and workers unions. A new CSR strategy, developed over the past year, means that Hydro is stepping up the effort to become a trusted partner in Barcarena. The aim is to create engagement and partnerships with local communities, authorities, universities and civil society. Several new initiatives are communicated: <ul style="list-style-type: none"> Commitment to work with local partners such as the water utility company, Águas de São Francisco, to find a permanent solution for water provision. Local NGO hired as a third-party observer to follow all meetings and initiatives Local NGO to survey agricultural soil quality, starting April 9 Hydro to establish new waste sorting facility as part of the new Municipality landfill in Bom Futuro. The project was initiated in 2016, technical engineering is finalized, and March 19 there was a kick off meeting with partners implementing an interlinked environmental awareness program in Barcarena Source : https://www.hydro.com/en/media/news/2018/hydro-stepping-up-its-efforts-to-be-a-trustworthy-partner-in-barcarena/
<p>March 20, 2018</p>	<ul style="list-style-type: none"> Federal Committee (appointed by President Temer) established to manage and evaluate an environmental contamination in Barcarena. The objective is relief and assistance, reestablishment of affected essential services, monitoring and recovery and reconstruction. Duration: 6 months. Final report published August 10.

<p>March 20, 2018</p>	<ul style="list-style-type: none"> • Alepa CPI: During a session in Alepa, a Parliamentary Inquiry Commission (CPI) is set up to investigate environmental and social impacts of Alunorte and other industries in Barcarena. • Source : https://www.hydro.com/pt-BR/imprensa/noticias/2018/alepa-vai-investigar-eventos-em-barcarena/
<p>March 22, 2018</p>	<ul style="list-style-type: none"> • A delegation with representatives from the Communities of Bom Futuro, Burajuba and Vila Nova, in addition to the Civil Defense of the State and the Peabiru Institute, visit Alunorte.
<p>March 26, 2018</p>	<ul style="list-style-type: none"> • External committee of the House of Representatives requests a creation of CPI – Parliamentary Commission of Inquiry <ul style="list-style-type: none"> ○ The CPI is a temporary collegiate committee formed to investigate irregularities or indications of any problem involving a company or government in Brazil. ○ Duration: 120 days with potential renewable for additional 60 days ○ This CPI was created on 21 June but has not yet been installed as nomination of members to the CPI is has not been completed. The CPIe request expires 31 December 2018, unless there is a new approval.
<p>March 27, 2018</p>	<ul style="list-style-type: none"> • Alunorte is in dialogue with the environmental authorities of Pará to resume normal operations. In addition, Alunorte is seeking an agreement with the public prosecutor, Ministério Público. Ministério Público has on 26 March 2018 published their counterproposal for an agreement. • Source : https://www.hydro.com/en/media/news/2018/alunorte-pursues-agreements-with-brazilian-authorities-to-normalize-operation/ • Source : http://www.mpf.mp.br/pa/sala-de-imprensa/noticias-pa/ministerio-publico-apresenta-a-hydro-condicoes-para-termo-de-ajuste-de-conduta-da-empresa-para-medidas-emergenciais
<p>March 28, 2018</p>	<ul style="list-style-type: none"> • The third Evandro Chagas report, Relatório técnico 003/2018 includes measurements also in communities several kilometres away from Alunorte. All heavy metal measurements in the vicinity of Alunorte are within drinking water quality.
<p>April 2, 2018</p>	<ul style="list-style-type: none"> • Alepa CPI – Visit to Alunorte
<p>April 4, 2018</p>	<ul style="list-style-type: none"> • Federal Management Committee– Meeting at Casa Civil (the President’s Office) in Brasilia
<p>April 6, 2018</p>	<ul style="list-style-type: none"> • Hydro initiates lawsuit against Ministério Público (MP) in Brazil in order to appoint independent expert to evaluate the IEC’s reports. A desired outcome is to resume negotiations with MP based on a balanced factual understanding after MP announced termination of negotiations on March 26.

<p>April 9, 2018</p>	<ul style="list-style-type: none"> Hydro receives results from the external (SGW) and the internal review which both confirm there has been no leaks from the bauxite residue deposit areas and no harmful spills to the local communities. Hydro holds press conference in Oslo, Norway, and Belem, Brazil. SGW and the internal task force present their main findings. Hydro presents main actions taken. The Sustainable Barcarena Initiative is launched. Hydro commits BRL 100M in support over ten years. Source : https://www.hydro.com/en/media/news/2018/reviews-confirm-no-indications-of-contamination-from-alunorte-on-local-communities-after-rainfall/
<p>April 10, 2018</p>	<ul style="list-style-type: none"> Albras, which normally receives all its alumina from Alunorte, cuts production by 50 percent. Source : https://www.hydro.com/en/media/news/2018/albras-initiates-50-percent-curtaiment-of-aluminium-production/
<p>April 18, 2018</p>	<ul style="list-style-type: none"> Second group at Paragominas starts collective vacations Source : https://www.hydro.com/en/media/news/2018/second-group-of-employees-in-paragominas-start-collective-vacations/
<p>April 21, 2018</p>	<ul style="list-style-type: none"> Meeting between Ministério Público and Alunorte based on allegations that water trucks are contaminated. Water distribution stopped, and reassumed May 4. Source : https://www.hydro.com/pt-BR/imprensa/noticias/2018/alunorte-atende-notificacao-do-ministerio-publico/
<p>April 25, 2018</p>	<ul style="list-style-type: none"> The judge of the court in Barcarena, who ordered Alunorte to cut production by 50 percent and halt operations at DRS2, declares himself incompetent and refers the case to a federal environmental court.
<p>April 27, 2018</p>	<ul style="list-style-type: none"> Federal Committee visits Alunorte
<p>April 30, 2018</p>	<ul style="list-style-type: none"> The Federal court that the case was referred to on April 25, in a decision relative to another case filed by Ministério Público, reinstates the 50 percent production cut and the halts of operations at DRS2.
<p>May 5, 2018</p>	<ul style="list-style-type: none"> Alepa CPI – hearing of SGW
<p>May 14, 2018</p>	<ul style="list-style-type: none"> Hydro appoints John Thuestad as EVP for Bauxite & Alumina, effective June 1. Source : https://www.hydro.com/en/media/news/2018/hydro-appoints-thuestad-as-new-head-of-bauxite--alumina/

May 15, 2018	<ul style="list-style-type: none"> • Alepa CPI – hearing of Hydro • CAINQUIAMA requested an injunction for the suspension of the environmental licenses of Paragominas, Albras and Alunorte. The injunction was denied by the Federal Court of Paragominas. • Source : https://g1.globo.com/pa/para/noticia/acao-coletiva-pede-a-paralisacao-da-exploracao-de-bauxita-pela-hydro-em-paragominas.ghtml
May 17, 2018	<ul style="list-style-type: none"> • The report from the Federal Committees visit to Alunorte is made public.
June 5, 2018	<ul style="list-style-type: none"> • External committee of the House of Representatives – public hearing “100 days after” event.
June 13, 2018	<ul style="list-style-type: none"> • Federal Committee – Alunorte submits requested information
June 19, 2018	<ul style="list-style-type: none"> • Alepa CPI – Extension of deadline of the final report. The deadline is extended by 30-90 days.
June 21, 2018	<ul style="list-style-type: none"> • External committee of the House of Representatives – Governing board of the House of Representatives authorizes the constitution of the CPI to function within 120 days. The CPI has not been installed due to insufficient nomination of members to the CPI.
June 15, 2018	<ul style="list-style-type: none"> • Following a community complaint related to runoff from soil set aside for the rehabilitation of DRS1, there was no evidence of surface water runoff to the river Agua Verde Igarapé. • Technical inspections are made by: Secretaria Municipal de Meio Ambiente de Barcarena, Secretaria Estadual de Meio Ambiente, Delegacia Especializada de Meio Ambiente, Ministério Público and Instituto Evandro Chagas • Source : https://www.hydro.com/pt-BR/imprensa/noticias/2018/alunorte-esclarece-nova-denuncia-da-comunidade/
June 28, 2018	<ul style="list-style-type: none"> • Alepa CPI - Confrontation SGW / UFPA (Universidade Federal do Pará) / Renato Chaves / Instituto Evandro Chagas
July 18, 2018	<ul style="list-style-type: none"> • Paragominas temporarily suspends work contracts for 80 employees, and ends 175 contractor positions • Source : https://www.hydro.com/en/media/news/2018/paragominas-temporarily-suspends-work-contracts-for-80-employees-terminates-175-contractors/

<p>August 10, 2018</p>	<ul style="list-style-type: none"> • Federal Committee – final report published. <ul style="list-style-type: none"> ○ The report says that Alunorte reveals a good practice in compliance with the UN Guiding Principles on Business and human rights including medical care provided by the company, recognition of technical failures, opening of a channel of communication specific for this with access for complaints and receiving information, as well as the completion of internal audit. ○ Main recommendations to Alunorte relate to measures to prevent human rights breaches, secure mechanisms for effective participation, transparency and grievance, maintain emergency supply of drinking water to neighboring communities in cooperation with the authorities, share the results of the hypothetical dam break of DRS1 and DRS2 with the relevant authority and prepare corresponding emergency plans, and initiate an external health risk assessment.
<p>Technical and social agreements signed</p>	
<p>August 22, 2018</p>	<ul style="list-style-type: none"> • Semas allows Alunorte to do maintenance and some environmental governance measurers at the DRS2. • Link : https://www.hydro.com/pt-BR/imprensa/noticias/2018/alunorte-inicia-atividades-de-melhoria-e-manutencao-no-deposito-de-residuos-solidos-2/
<p>September 5, 2018</p>	<ul style="list-style-type: none"> • Alunorte signs two agreements, with Government of Pará and Ministério Público, representing a milestone to resume normal operations at the alumina refinery in Pará, Brazil. There is still no timeline to resume production. • The TAC regulates certain technical studies and improvements, audits, fines and payments for food cards to families living in the hydrographic area of the Murucupi River. • The TC addresses additional efforts and investments related to the social development of communities in Barcarena. • The combined investments, costs and fines are estimated at BRL 319 million (around NOK 640 million), of which about NOK 65 million relates to fines. • Source : https://www.hydro.com/en/media/news/2018/alunorte-signs-agreements-with-government-of-para-and-ministerio-publico/
<p>Ultimo September</p>	<ul style="list-style-type: none"> • Regular community meetings and volunteer actions are well established, and there is growing support from the local communities. • The establishment of the Sustainable Barcarena Initiative is progressing, yet the local communities still do not perceive it as concrete and ask for immediate solutions.
<p>September 29, 2018</p>	<ul style="list-style-type: none"> • Alunorte receives a report from its long-term consultant, saying that DRS1 is still safe to use and will be so for many months forward.

Old deposit area filling up	
October 3, 2018	<ul style="list-style-type: none"> Alunorte receives new advice from the engineering and design consultant that the current part of DRS1 under operation is no longer safe to use with drum filter technology. The more secure, efficient and environmentally-friendly DRS2, nor its press filters, cannot be used, as it was embargoed in March while in commissioning phase. Alunorte management makes the decision to shut down production. Source : https://www.hydro.com/en/media/news/2018/norsk-hydro-alunorte-announces-full-curtailment-of-its-operations/
October 5, 2018	<ul style="list-style-type: none"> Thousands of Hydro employees take to the streets in Barcarena in a peaceful demonstration in favor of Alunorte and to support the process to resume normal operations, securing value and jobs, and Hydro's continued contribution to sustainable growth in Pará.
October 6, 2018	<ul style="list-style-type: none"> Alunorte receives exceptional authorization from Ibama to use the modern press filters to process bauxite residue for DRS1. Source : https://www.hydro.com/en/media/news/2018/alunorte-receives-authorization-to-utilize-press-filter-as-first-step-to-resume-operations/
Continuing efforts to resume full production	
October 9, 2018	<ul style="list-style-type: none"> Semas supports Ibama's decision and Alunorte resumes 50 percent production. Still uncertain when the embargo on production and DRS2 will be lifted. Source: https://hydro.com/en/press-room/Archive/2018/alunorte-situations-news/alunorte-to-resume-production-at-half-capacity/
October 24, 2018	<ul style="list-style-type: none"> In connection with its Q3 results, Hydro informs that the water retainment basins capacity at Alunorte will be increased by 350 percent by end 2018. Total investments and expenses related to regulatory, social and operational improvements have a total worth of about 1.1 BBRL
October 25, 2018	<ul style="list-style-type: none"> Ibama lifts embargo on DRS2. Embargo on DRS2 from the federal court system remains in place. Source : https://www.hydro.com/en/media/news/2018/ibama-lifts-embargo-on-new-alunorte-bauxite-residue-deposit-area/
October 28, 2018	<ul style="list-style-type: none"> Jair Bolsonaro is elected new president, replacing President Temer 1 January 2019 Helder Barbalho is elected new governor of Pará, replacing Governor Jatene 1 January 2019
October 31, 2018	<ul style="list-style-type: none"> CAINQUIAMA filed a new lawsuit requesting an injunction for the suspension of the environmental licenses of Paragominas, Albras and Alunorte (see May 15) in the state court in Belem.

<p>November 8, 2018</p>	<ul style="list-style-type: none"> The federal court in Belém, Pará, declared its competence and ratified the previous decision from the State Court, Pará, about the embargo in order to further preside and decide on the case. Source: https://www.hydro.com/en/media/news/2018/alunorte-continues-to-work-with-the-authorities-to-lift-remaining-embargoes/
<p>November 12, 2018</p>	<ul style="list-style-type: none"> The report of the External Committee of the House of Representatives is presented and validated in a session. Edmilson Rodrigues, coordinator of the commission, claimed irregularities in environmental licensing, ineffectiveness in detecting risks, and delay in attendance to the local population. It also claims that the deposits are in an environmental protection area, and suspects fraud in Pará's database for ecological reserves. Source : http://www2.camara.leg.br/camaranoticias/noticias/MEIO-AMBIENTE/565436-FALHAS-E-POSSIVEIS-CRIMES-FORAM-CAUSA-DE-VAZAMENTO-DE-REJEITOS-MINERAIS-EM-BARCARENA-(PA)-CONCLUI-COMISSAO.html
<p>November 13, 2018</p>	<ul style="list-style-type: none"> About a thousand of Hydro employees take to the street in front of the Federal Court in Belém in a peaceful demonstration in favor of Alunorte and Albras to support the process to resume normal operations, securing value and jobs, and Hydro's contribution to sustainable growth in Pará. Source : https://www.romanews.com.br/cidade/trabalhadores-pressionam-a-justica-federal-pelo-fim-do-embargo-a/19468/
<p>November 29, 2018</p>	<ul style="list-style-type: none"> Brazil update as part of Hydro Capital Markets Day in London. Read more on Hydro press release: https://www.hydro.com/en-NO/media/news/2018/capital-markets-day-2018-navigating-challenging-times-maintaining-long-term-focus/ All presentations from Hydro's Capital Markets Day can be found here: https://www.hydro.com/en-NO/investors/reports-and-presentations/capital-markets-day/capital-markets-day-2018/
<p>December 13, 2018</p>	<ul style="list-style-type: none"> Brazilian expert study shows no overflow from Alunorte's residue deposit areas during the rainfall in February 2018 Computer simulations carried out by professors from the Federal University of Campina Grande show that there was no overflow from Alunorte's residue deposit areas in February 2018. The independent study also concludes that Alunorte, from a water management perspective, can produce safely at 100% capacity. Source: https://www.hydro.com/en/media/news/2018/brazilian-expert-study-shows-no-overflow-from-alunortes-residue-deposits-during-february-rainfall/
<p>December 18, 2018</p>	<ul style="list-style-type: none"> Alunorte completes delivery of food cards in Barcarena: Alunorte finalizes the delivery of food cards to residents of the area of the Murucupi river basin in Barcarena. The delivery of the benefit is accorded in the Term of Adjustment of Conduct (TAC) signed between the company, Hydro, the State and Federal Public Ministry and the Government of the State of Pará. The distribution was completed one day before the initial forecast.

	<ul style="list-style-type: none"> The Legislative Assembly of the state of Pará concludes investigation: The Legislative Assembly of the state of Pará concluded its investigation into Alunorte and the February 2018 rainfall event and published its report on the issue.
December 27, 2018	<ul style="list-style-type: none"> Alunorte progresses in implementation of operational improvements: The refinery is investing in expanding rainwater storage capacity and in the Industrial Wastewater Treatment Plant with construction of new basins, new pumping systems and water pipes, new instruments for automation and control, new cameras for monitoring the basins and a new water treatment facility. Alunorte has also acquired new vehicles, such as ambulance, fire truck and pickups with gyro flex and speakers. The Refinery's Emergency Response Plan was also reviewed and has included the creation of the Community Environmental Emergency Brigade, with participation of representatives of local communities. Se video: https://www.youtube.com/watch?v=V-PFGTsFz5Y
January 15, 2019	<ul style="list-style-type: none"> SEMAS lifts Alunorte's production embargo: The environmental agency in the state of Pará, SEMAS, has issued a technical note attesting that Hydro Alunorte can safely resume normal operations and has on this basis lifted the production embargo. The lifting of the production embargo from SEMAS does not allow for immediate resumption of full operation at Alunorte, as the embargo of the Federal Court remains in force. Source: https://www.hydro.com/en/media/news/2019/semas-lifts-alunortes-production-embargo/
March 26, 2019	<ul style="list-style-type: none"> Alunorte signs agreement with Ministério Público on third-party verification of technical reports, parties agree on amendment of TAC and Federal Court schedules hearing: Alunorte has agreed with Ministério Público to have third-party technical assistance to assess whether reports from SEMAS and the University of Campina Grande, both concluding that Alunorte can safely resume normal operations, comply with technical parameters and relevant applicable rules. If the third-party assessment supports the conclusions, Ministério Público will file a petition in the Federal Court in Belém confirming it would not oppose lifting Alunorte's production embargo. The agreement schedules a timeline for the assessment to be concluded in April. It does not include a timeline for the decision to be made by the court. Source: https://www.hydro.com/en/media/news/2019/norsk-hydro-update-on-alunorte-situation/
April 4, 2019	<ul style="list-style-type: none"> Federal Court holds a conciliatory hearing between Ministério Público, Hydro and Alunorte regarding the refinery embargo: During the hearing, Ministério Público and Alunorte provided an updated to the judge regarding the assessment being carried out by expert technicians on the reports from SEMAS/FADESP and ATECEL/University of Campina Grande (UFCEG), which concluded that Alunorte can resume operations. Judge Arthur Pinheiro Chaves, from the 9th Federal Court, scheduled a new conciliation hearing for April 12, when he will have the opportunity to listen to the technical experts. However, the time for a court decision remains unclear.

<p>April 12, 2019</p>	<ul style="list-style-type: none"> Ministério Público and Alunorte provide Federal Court with joint petition to lift production embargos: The Federal Court in Belém held a conciliatory hearing between Ministério Público and Alunorte to discuss the production embargos for Hydro's Alunorte alumina refinery. At the hearing, Ministério Público and Alunorte provided the court with a joint petition to lift the production embargos. The Government of Pará was represented by the State Attorney. Source: https://www.hydro.com/en/media/news/2019/ministerio-publico-and-alunorte-provide-federal-court-with-joint-petition-to-lift-production-embargos/
<p>May 1, 2019</p>	<ul style="list-style-type: none"> Alunorte starts second phase in benefits program for people identified to receive food card The action is aimed at people who prove their residence in the region of the Murucupi basin in Barcarena in February 2018. The proof will enable the residents previously identified to receive the temporary social benefit, as established in the Term of Adjusted Conduct (TAC) signed by Hydro, Alunorte, Government in the State of Pará and Ministério Público.
<p>May 15, 2019</p>	<ul style="list-style-type: none"> Federal Court lifts one of two production embargos on Alunorte: The Federal Court in Belém, Brazil, lifted the production embargo on Alunorte under the civil lawsuit. The refinery is still subject to a production embargo imposed by the same court in a parallel criminal lawsuit. No decision has been taken on the embargos on the new bauxite residue disposal area (DRS2). Source: https://www.hydro.com/en/media/news/2019/federal-court-lifts-one-of-two-production-embargos-on-alunorte/
<p>May 20, 2019</p>	<ul style="list-style-type: none"> Federal court lifts remaining production embargo at Alunorte: The federal court in Belem, Brazil, lifted the production embargo on the Alunorte alumina refinery under the criminal lawsuit on Monday, May 20, allowing Alunorte to ramp up towards normal production after running at half capacity for more than a year. No decision has been taken on the embargos on the new bauxite residue disposal area (DRS2). Source: https://www.hydro.com/en/media/news/2019/federal-court-lifts-remaining-production-embargo-at-alunorte/
<p>May 21, 2019</p>	<ul style="list-style-type: none"> Albras resumes normal aluminium production: Albras' Board of Directors decided to restart aluminium production at the Albras aluminium plant in Brazil. Albras curtailed 50% of its production in April 2018. The decision to restart Albras came after the decisions by the federal court in Belem, Brazil, to lift the production embargoes on Alunorte on May 15 and May 20, allowing Alunorte to ramp up towards normal production. Source: https://www.hydro.com/en/media/news/2019/albras-resumes-normal-aluminium-production/
<p>August 30, 2019</p>	<ul style="list-style-type: none"> Ministerio Publico Federal, Hydro and Alunorte provide Federal Court with joint petition to lift DRS2 embargoes: Alunorte, Hydro and Ministerio Publico Federal filed a joint petition to the Federal Court in Belem to lift the embargoes on the new bauxite residue deposit area – DRS2. The activities were suspended on March 1, 2018, following a court ordered embargo.

	<ul style="list-style-type: none">• Source: https://www.hydro.com/en/media/news/2019/norsk-hydro-ministerio-publico-federal-hydro-and-alunorte-provide-federal-court-with-joint-petition-to-lift-drs2-embargoes/
September 20, 2019	<ul style="list-style-type: none">• Federal Court lifts one of two embargos on Alunorte's deposit area DRS2: The Federal Court of Pará lifted the embargo on Alunorte's new bauxite residue disposal (DRS2) under the civil lawsuit. The decision to lift the DRS2 embargo in the civil case against Alunorte came after Ministério Público and Alunorte submitted a joint petition to the federal court on August 30, requesting the embargoes to be lifted.• Source: https://www.hydro.com/en/media/news/2019/federal-court-lifts-one-of-two-embargos-on-alunortes-deposit-area-drs2/
September 26, 2019	<ul style="list-style-type: none">• Federal court lifts final embargo on Alunorte deposit area: The Brazilian federal court lifted the final embargo on Alunorte's new bauxite residue disposal (DRS2) under a criminal lawsuit, allowing the alumina refinery to resume activities of installation and commissioning at DRS2 and ending a 19-month embargo period which has restricted activities at the plant.• Source: https://www.hydro.com/en/media/news/2019/federal-court-lifts-final-embargo-on-alunorte-deposit-area/

Terms & definitions

Alepa – Assembleia Legislativa do Pará is the legislature of the state of Pará

CAINQUIAMA - Associação dos Caboclos, Indígenas e Quilombolas da Amazônia is an organization for traditional and indigenous peoples in the Amazon basin in Brazil

CAP Project – A potential new alumina refinery to be located in Barcarena, close to Alunorte, has been under evaluation for development in a joint venture between Hydro and Dubal Holding LLC (Hydro's share, 81 percent) with a potential maximum capacity of 7.4 million mt.

CPI – Parliamentary Committee of Inquiry was established by Alepa to investigate environmental and social impacts of Alunorte and other industries in Barcarena.

DRS1 – The largest and older bauxite residue deposits area at Alunorte. DRS1 is using dry stacking technology and was, until the construction of DRS2, regarded as state of the art technology. By using the old drum filters, water content was 36 percent in the solid bauxite residue. Following the exceptional authorization of Ibama October 9, Alunorte now uses the DRS2 press filters.

DRS2 – Alunorte's newest and most modern bauxite residue deposits using new state of the art dry stacking technology. The attached press filters reduce the water content in the bauxite residue to 22 percent. DRS2 was

under commissioning when a regional court, based on a request from the public prosecutor in state of Pará, ordered Alunorte to cut production by 50 percent and halt operations at DRS2.

Federal Committee – A committee established by President Temer to manage and evaluate an environmental contamination in Barcarena. The objective is relief and assistance, reestablishment of affected essential services, monitoring and recovery and reconstruction.

Ibama – Instituto Brasileiro do Meio Ambiente e dos Recursos Natureis Renováveis is the Brazilian federal environmental agency.

Instituto Evandro Chagas (IEC) – A non-profit organization, based in Belem in Pará, which promotes public health in Brazil.

Ministério Público (MP) – often translated as public prosecutor, is a Brazilian institution that exists at federal and state level. In addition to its role as a prosecutor in certain cases, it also fulfils a role similar to an ombudsman, to defend the public interest.

Semade – Secretaria Municipal de Meio Ambiente e Desenvolvimento Econômico is the environmental agency of the municipality of Barcarena.

Semas – Secretaria de Meio Ambiente e Sustentabilidade is the environmental agency of the state of Pará, under the Governor of Pará.

SGW – SGW Services is a Brazilian environmental consultancy specialized in licensing, audit, engineering, assessment, remediation and recovery of degraded areas. SGW was commissioned by Hydro to conduct an independent environmental review of Alunorte following the flooding incident.

Sustainable Barcarena Initiative (SBI) – aims at supporting social change in the municipality of Barcarena. While it is established on the initiative of Alunorte, it will be a legal independent entity of Hydro and Alunorte. Alunorte will invest BRL 100 million over 10 years in social actions in the communities through SBI.

TAC – Term of Adjusted Conduct is a technical agreement between Alunorte, Hydro, Ministério Público (federal and state) and the State Government of Pará represented by Semas, signed on September 5, 2018.

TC – Term of Commitment is a social agreement between Alunorte and the State Government of Pará, signed on September 5, 2018.