

Informe Técnico realizado por Investigadores de la Red de Estudios Ambientales Bonaerense (CONICET) sobre la Modificación de la Resolución Presidencial ACUMAR N° 46/2017 y su Reglamentación a solicitud del Ministerio Público Fiscal.

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Comentarios respecto a los Anexos recientemente incorporados del proyecto de resolución “Modificación de la Resolución Presidencia ACUMAR N° 46/2017”

Parte general:

En el artículo 6° del texto de la modificación, se establece sustituir artículo 12 de la Resolución Presidencia ACUMAR N° 46/2017, con el siguiente texto: *“ARTÍCULO 12.- La presente entrará en vigencia al día siguiente de su publicación en el Boletín Oficial de la República Argentina, a excepción de las condiciones de vertido establecidas en el criterio 1 y en el criterio 2 -a los que refiere el artículo 2° de la presente- y la Tabla Consolidada de Control de Límites de Vertido de Efluentes Líquidos -aprobada por ANEXO I (IF xxx) de la presente-, las que entrarán en vigencia el 1 de enero de 2022, con posibilidad de establecer una prórroga como máximo de veinticuatro (24) meses contados a partir de dicha fecha, quedando derogada a partir de dicho momento la Resolución ACUMAR N° 1/2007”.*

Considerando que la recomposición ambiental (objetivo central de ACUMAR) es una necesidad inmediata, se considera que la dilación propuesta es excesiva, y que no hay elementos de peso que la justifiquen adecuadamente, más aun teniendo en cuenta la partición de la cuenca en subcuencas, y que éstas presentan calidades diferentes. Eventualmente puede proponerse un diagrama de aplicación diferenciado para cada una de éstas, pero nunca dilatar la aplicación tres años.

Más aún, consideramos importante volver a plantear nuestro cuestionamiento a las metas de calidad planteadas para la cuenca y en particular los plazos establecidas para su logro, que se establecen en el Artículo 8° de la original Resolución 46/17.

En primer lugar, respecto al Uso IV, “Apta para actividades recreativas pasivas”, no se define con claridad a qué tipo de actividades se refiere, ni es una categoría usada en las legislaciones de otros países. Además, su implementación en el modo que se plantea, permite el deterioro en el corto plazo de la calidad ambiental de la cuenca alta y media, que ya son aptas para este tipo de “uso” y algunos más estrictos. Más elementos se brindan más adelante con los comentarios al Anexo III.

Hay acuerdo con los otros usos, incluso con la mayoría de los valores que se establecen, y de los parámetros que se exigen, más aún con las recientes modificaciones, pero con una sola salvedad: que el cumplimiento de los parámetros deben pedirse en toda la cuenca, más aún con los generales (físicoquímicos y microbiológicos), pero respetando las particularidades de cada subcuenca. Sin embargo, destacamos nuestra discrepancia con los plazos estipulados. Ya se hizo referencia a la aplicación del presunto uso IV, señalándolo como excesiva dilación. Lo mismo ocurre con los otros plazos, resultan excesivamente laxos, más aún cuando por falta de modelización, no se conoce la dinámica de los contaminantes dentro de la cuenca, contando sólo con descripciones de sus concentraciones en agua, y a veces en sedimentos; pero careciendo de

relevamientos topográficos y batimétricos, además de otros datos de la dinámica hidrológica, incluyendo dinámica de sedimentos y especiación de los metales presentes y otras sustancias orgánicas. Desde el mandato de la recomposición ambiental es preferible manejar plazos más estrechos y eventualmente prorrogables, pero acompañando desde ACUMAR con los estudios necesarios para la modelización señalada. Se destaca que desde la red REPBA del CONICET se puede realizar los estudios referidos.

Finalmente, dadas las características de la CMR sostenemos que el grado de contaminación en la cuenca debe estar permanentemente asociado a las dimensiones sociales, por ejemplo tener siempre presente los aspectos asociados al ordenamiento territorial y la salud poblacional.

Respecto al Anexo I

El artículo 3 establece *“Los establecimientos que generen efluentes líquidos que pudieran contener residuos patogénicos, deberán satisfacer la Demanda de Cloro residual de sus efluentes, previo a su descarga”*.

En este caso, se destaca que resultaría de gran utilidad para un mejor contralor del cumplimiento categorizar los tipos de establecimientos, de modo de enfocar con particular atención los parámetros asociados con las características específicas de cada tipo productivo.

Los comentarios restantes, se refieren a la Tabla Consolidada de Control de Límites de Vertido de Efluentes Líquidos.

En primer lugar, y en conexión con el comentario anterior, se considera óptimo y de gran relevancia, establecer límites de vertidos específicos para cada tipo de actividad o industria, con el fin de alcanzar los límites más estrictos que pueden ser viables económicamente para cada una. Este criterio se aplica, por ejemplo, en las normativas de la Agencia Ambiental de los EEUU (US-EPA).

Respecto a límite del **Fósforo total**, se considera que 5 mgP/L para cuerpo de agua superficial es un valor muy elevado, atento a que el medio receptor es un ambiente sujeto a extrema eutrofización y a que se pretende recomponer el sistema. A fines comparativos, la Resolución N° 1089 de la Provincia de Santa Fe (Reglamento para el control del vertimiento de líquidos residuales) establece 2 mgP/L como máximo; mientras que la Resolución N° 336-03 (modificatoria de la N° 389/98) del ADA (Pcia de Bs As) establece $\leq 1,0$ mg/L de P para vertido a cuerpo de agua superficial. Asimismo, la Dirección General del Agua del Ministerio de Medio Ambiente de España establece 1 mgP/L como máximo para vertido a cuerpos superficiales sensibles.

Nuevamente para cuerpo de agua superficial como medio receptor, pero respecto al **Nitrógeno total Kjeldahl**, fijado en ≤ 35 mgN/L, se recomienda establecer límites más estrictos considerando la sensibilidad del ambiente receptor, su estado y la intención de sanearlo. Como comparación se señala que la Dirección General del Agua del Ministerio de Medio Ambiente de España establece 10 mgN/L como máximo para vertido a cuerpos superficiales sensibles. Del mismo modo, la

Resolución 1089 de la Provincia de Santa Fe ya citada, establece que no deben superarse los 15 mgN/L; mientras que el límite superior para la Resolución N° 336-03 (PBA) es de 25 mgN/L.

Finalmente, se recomienda modificar la exigencia de cumplimiento de los límites establecidos para los coliformes fecales (Ref. e), de manera de incluir en ella toda la cuenca y no solamente la cuenca alta, sin perder de vista las características de cada subcuenca. En efecto, si se quiere recomponer la calidad ambiental de la totalidad de la cuenca y alcanzar los niveles de USO 1, 2 o 3, los coliformes fecales deben regularse en la totalidad de la cuenca.

Respecto al Anexo III

Comienza con una afirmación muy extensa y poco precisa. Dice: *“En todos los cuerpos de agua superficial y para todos los Usos establecidos en la presente, deberá verificarse la ausencia de los siguientes componentes: materia flotante y espumas no naturales; aceites minerales, vegetales, y grasas; colorantes de fuentes antrópicas; y residuos sólidos de fuentes antrópicas.*

Entiéndase por el término “Ausencia” que los componentes indicados en el párrafo precedente no deben estar presentes en concentraciones que sean detectables a simple vista o por olor; o bien que puedan formar depósitos en las orillas de los arroyos o ríos; o bien afectar a los organismos acuáticos presentes.

Es poco preciso el término ausencia, y queda atado a la percepción de cada quien, en términos subjetivos y cualitativos. En todo caso, es necesario definir esta disposición en términos cuantitativos, una metodología para su detección y una escala de valores. Por ejemplo, en términos perceptivos, como se reconoce si es una espuma natural o no natural? Como se reconoce si un colorante es de fuente antrópica?.

Finalmente, la propuesta de incorporar los estudios ecotoxicológicos, es una forma concreta de dar respuesta cuantitativa al requisito *“... o bien afectar a los organismos acuáticos presentes”*.

Por otro lado, y respecto a los distintos Usos del agua, se considera que los parámetros de análisis deben contar con límites cuantificados para la totalidad de los usos (del I al IV), dado que se debe recomponer la calidad ambiental de la totalidad de la cuenca, sin perder de vista las características de cada subcuenca, como ya se señaló anteriormente para el parámetro coliformes totales, y como ocurre con el parámetros SSEE (aceites y grasas).

En particular, se cuestiona el uso IV *“Apta para actividades recreativas pasivas”* dado que no se define con claridad los alcances de las mencionadas *“actividades recreativas pasivas”*, y que no es una categoría usada en las legislaciones de otros países. Es más, es un objetivo muy poco ambicioso, que permite el deterioro, en el corto plazo, de la calidad ambiental de la cuenca alta y media, que ya son aptas para este tipo de "uso" y algunos más estrictos. Por otra parte, en la mayor parte de la cuenca baja se ha construido un camino de sirga donde se desarrollan actividades recreativas o productivas sin contacto directo con el río (Uso III) por lo que este artículo no tendría aplicación concreta.

Propuesta de incorporación de estudios ecotoxicológicos en el ANEXO 1:

Antecedentes y fundamento

El saneamiento de la cuenca del Rio Matanza-Riachuelo tiene como objetivo ecológico recuperar condiciones de vida compatibles con la integridad del ecosistema. Siendo la toxicidad en el agua y sedimentos uno de los condicionantes fundamentales que impiden la recuperación de la biota y el consiguiente saneamiento, es fundamental incorporar el Riesgo por Toxicidad como un criterio de gestión prioritario para alcanzar el objetivo de evitar el vuelco de efluentes y otros materiales en concentraciones tóxicas, incompatibles con el ecosistema acuático. Los estudios ecotoxicológicos abarcan un amplísimo rango de variables que incluyen, diferentes especies, diferentes condiciones, y numerosísimos objetivos específicos, etc. En América Latina y en Argentina en particular, ya en 1997 había suficientes grupos de científicos interesados en Toxicología y Química Ambiental como para formar parte de una sociedad internacional, SETAC, organizando cursos, simposios, congresos, etc. de tal manera que a la fecha hay centenares de contribuciones científicas en Ecotoxicología desde distintos Centros de Investigación en nuestro país, lo que implica una importante infraestructura de laboratorios y personal entrenado en esta disciplina (ANEXO A).

En 1991 la EPA ha publicado un documento denominado "Technical Support Document for Water Quality-based Toxics Control" que permite, en base a una **metodología claramente definida**, establecer límites de toxicidad admisible para los permisos de vuelco a fin que los mismos sean compatibles con el ecosistema (1). Expresado en Unidades de Toxicidad, el Riesgo por Toxicidad Aguda (96 hs. de exposición) no debe superar el valor de 0,3 y para crónica corta (7 días de exposición) el valor de 1. Aplicando dicho criterio, a partir de 1996 se han publicado trabajos desde la Argentina informando el Riesgo por Toxicidad en efluentes industriales, lixiviados aguas y sedimentos de cuencas hídricas de sitios considerados no impactados hasta localizaciones severamente afectadas por la actividad antrópica (Anexo A). La información es científicamente robusta, económica para obtener, reproducible, permite gestionar objetivos cada vez más ambiciosos en el espacio y el tiempo para alcanzar la sustentabilidad en toda la cuenca. Es fácil de entender para todas las partes interesadas, organismos de gestión y control, empresas con sus diferentes roles y la población asentada en la cuenca. No es menos relevante que los esfuerzos para alcanzar el saneamiento tenga definido uno de los objetivos centrales, que el riesgo por toxicidad sea compatible con la vida, orientando las acciones para alcanzar dicho objetivo. La recuperación de la biota es fundamental para todos los mecanismos de resiliencia que participaran activamente en el saneamiento de la cuenca. La incorporación de este criterio de gestión es complementaria con cualquier otro que se estuviera ejecutando o a incorporar.

1. Technical Support Document for Water Quality-based Toxics Control. EPA /505/2-90-001, 1991.

Texto a incorporar en el ANEXO 1 de la Res. ACUMAR 46/2017

Artículo 8. Incorpórese la realización de estudios Ecotoxicológicos en el agua, sedimentos, efluentes industriales y lixiviados que impactan la cuenca del Rio Matanza-Riachuelo. A fin de establecer la línea de base para integrar a la gestión de la cuenca el criterio de RIESGO por Toxicidad, se realizara durante un periodo de 2 años un monitoreo de la Toxicidad en las 14 subcuencas en el agua, sedimentos, efluentes industriales y lixiviados que impacten el ecosistema. La metodología y limites por toxicidad a ser implementada se basa en el "Technical Support Document for Water Quality-based Toxics Control" de la US EPA 1991. El Riesgo por Toxicidad aguda (96 hs de exposición), expresado en Unidades de Toxicidad ($UT_a=100/CL50$) tendría como valor máximo admisible 0,3 y para toxicidad crónica corta (7 días de exposición), expresado en Unidades de Toxicidad ($UT_c=100/NOEC$) 1. Los objetivos a futuro para agua y sedimentos podrán ser perfeccionados ampliando el tiempo de exposición a crónico (10 o más días de exposición) y a efectos subletales, v.g. teratogénesis/ otros biomarcadores de toxicidad.

ANEXO A

Bibliografía que respalda la experiencia en la Argentina sobre la evaluación de efectos biológicos de agentes físicos y químicos solos o en combinación, desarrollo e implementación de bioensayos en laboratorio y/o campo, su aplicación para la evaluación de calidad de agua, sedimentos, efluentes industriales, lixiviados, diagnóstico ambiental, etc. Las publicaciones marcadas con asterisco corresponden a contribuciones en las que se informó toxicidad aplicando los criterios del documento de la EPA "Technical Support Document for Water Quality-based Toxics Control (1991).

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