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BEFORE THE WATER QUALITY APPEALS BOARD
DEPARTMENT OF ADMINISTRATION
IN AND FOR THE STATE OF ARIZONA

Arizona Mining Reform Coalition; Concerned Citizens and Retired Miners Coalition; Save Tonto National Forest, Appellants, vs. State of Arizona, Arizona Department of Environmental Quality, Respondent.	Docket Nos. 17-001-WQAB; 17-002-WQAB **NOTICE TO THE WATER QUAITY APPEALS BOARD OF ADEQ'S NEW SOURCE ANALYSIS PURSUANT TO 40 CFR 122.29(b) AS ORDERED**
San Carlos Apache Tribe, Appellant, vs. State of Arizona, Arizona Department of Environmental Quality, Respondent.	
RESOLUTION COPPER MINING, LLC, Intervenor.	

The Arizona Department of Environmental Quality ("ADEQ") hereby submits

its New Source Analysis pursuant to 40 CFR 122.29(b) as ordered by the Water Quality Appeals Board ("Board") on November 8, 2018. (*See* Attachment A). ADEQ respectfully requests the Board issue a decision clarifying its approval of AzPDES Permit AQZ0020389 issued by ADEQ to Resolution Copper, L.L.C. on January 23, 2017.

Respectfully Submitted, this 15th day of February, 2019.

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ORIGINAL filed this 15th day of February, 2019 with:

Water Quality Appeals Board
1110 W. Washington Street
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Attachment A

ADEQ Arizona Department of Environmental Quality

Memorandum

Date: February 15, 2019
To: Arizona Water Quality Appeals Board
From: Arizona Department of Environmental Quality
Subject: New Source Analysis – Resolution Copper Mine – AZ0020389

Overview

On November 19th, 2018, the Water Quality Appeals Board remanded AZPDES permit AZ0020389 for the Resolution Copper Mining, LLC back to ADEQ for the purpose of conducting a new source analysis under 40 CFR 122.29(b) and to submit the written analysis to the board upon completion. It was further clarified in the order, that when conducting the analysis, ADEQ was permitted to disregard the Findings of Fact and the Conclusions of Law related to new source that were reflected in the Administrative Law Judge's decision filed on October 15, 2018. (WQAB - Case No. 17-001)

The following Memorandum is the new source analysis as ordered by the Water Quality Appeals Board. This document is organized into the following sections with corresponding subsections: (1) Background of Clean Water Act performance standards, (2) Description of the Ore Mining and Dressing Point Source Category, and (3) Analysis of the New Source definition in 40 CFR 122.2 and 122.29(b) as applicable to the Resolution Copper Mine. Related to what is a new source, ADEQ also attached a decision tree document that helps clarify what constitutes a new source as defined in both 40 CFR 122.2 and 40 CFR 122.29.

ADEQ concludes in the final analysis sections that the Resolution Copper Mine, LLC is an existing source and thus not subject to the New Source Performance Standards. This conclusion is consistent with ADEQ's original permit decision issued to the Resolution Copper Mine on January 23, 2017 and thus no changes or modifications to AZPDES permit AZ0020389 are necessary as a result of this analysis.

Background of Clean Water Act Performance Standards

EPA has promulgated regulations under the Clean Water Act (CWA) that establish effluent limitations guidelines for existing sources and standards of performance for new sources. EPA has codified these regulations in Title 40 of the Code of Federal Regulations (CFR) Subchapter N, which are incorporated by reference in Arizona Administrative Code (A.A.C) R18-9-A905(A)(9). EPA published effluent guidelines for 56 major industrial categories (over 450 subcategories) since the passage of the 1972 CWA. Those regulations limit the discharge of pollutants to surface waters from point source dischargers. The CWA and EPA regulations define when a source is a new source.

The classification of a facility as a new or existing source is important because under the CWA existing sources are subject to best available technology (BAT) and best conventional technology (BCT) requirements, while new sources are subject to the generally more stringent new source performance standards (NSPS).

To perform a new source analysis it is first important to understand definitions applicable to sources, which are defined below.

Source - 40 CFR 122.29(a)(2): means any building, structure, facility, or installation from which there is or may be a discharge of pollutants."

New Source - 40 CFR 122.2 and 122.29 (a)(1): means any building, structure, facility, or installation from which there is or may be a discharge of pollutants, the construction of which commenced:
(a) After promulgation of standards of performance under section 306 of CWA[1] which are applicable to such source, or
(b) After proposal of standards of performance in accordance with section 306 of CWA which are applicable to such source, but only if the standards are promulgated in accordance with section 306 within 120 days of their proposal.

Existing Source – 40 CFR 122.29(a)(3): means any source which is not a new source or a new discharger.

New Discharger – 40 CFR 122.2: New discharger means any building, structure, facility, or installation:
(a) From which there is or may be a "discharge of pollutants;"
(b) That did not commence the "discharge of pollutants" at a particular "site" prior to August 13, 1979;
(c) Which is not a "new source;" and
(d) Which has never received a finally effective NDPES permit for discharges at that "site."

Ore Mining and Dressing Point Source Category

The applicable effluent limitation guidelines for a copper mine are listed in the Ore Mining and Dressing major industrial category (40 CFR 440), with the sub category defined in Subpart J - Copper, Lead, Zinc, Gold, Silver, and Molybdenum Ores Subcategory.

The existing source effluent limitation guidelines for copper mines were originally promulgated in 1978 under the Base and Precious Metals Subcategory *(see 43 Federal Register 29771).* In 1982, the EPA reorganized and renamed some subcategories and added BAT and NSPS requirements *(see 47 Federal Register 54602).* There have been no subsequent promulgation of NSPS specific to copper mines in subpart J, thus December 1982 constitutes the new construction threshold date as it relates to the new source analysis for copper mines. In other words, if a source with a performance standard was constructed after December 1982, the applicable effluent limitation guidelines would be the NSPS. On the contrary, a source with a performance standard constructed before December 1982, the applicable effluent limitation guidelines would be those for existing sources.

[1] The standards of performance promulgated under Section 306 of the Clean Water Act are found in 40 CFR Subchapter N.

Copper Mine Sources

The sources that have applicable performance standards (meaning the only sources that could be considered new sources) for a copper mine discharge are included in the applicability section of 40 CFR 440.100, detailed below:

*(a) The provisions of this subpart J are **applicable to discharges from** -*
*(1) **Mines** that produce copper, lead, zinc, gold, silver, or molybdenum bearing ores, or any combination of these ores from open-pit or underground operations other than placer deposits;*
*(2) **Mills** that use the froth-flotation process alone or in conjunction with other processes, for the beneficiation of copper, lead, zinc, gold, silver, or molybdenum ores, or any combination of these ores;*
*(3) **Mines and mills** that use dump, heap, in-situ leach, or vat-leach processes to extract copper from ores or ore waste materials.* (Emphasis added.)

The applicability rules detail what sources ADEQ needs to consider when performing a new source analysis at a copper mine. To do so, ADEQ must first determine what a "mine" is. A mine is defined in 40 CFR 440.132(g) as an *"active mining **area**, including **all land and property** placed under, or above the surface of such land, used in or resulting from the work of **extracting metal ore or minerals** from their natural deposits by **any means or method**, including secondary recovery of metal ore from refuse or other storage piles, wastes, or rock dumps and mill tailings derived from the mining, cleaning, or concentration of metal ores."* (Emphasis added.)

It is clear in the definition that a "mine" is ultimately defined as an **area** in the regulations. This is an important distinction when performing a new source analysis at a mine site.

New Source Analysis – 40 CFR 122.2

A new source analysis starts with consideration of 40 CFR 122.2. ADEQ determines the applicable sources at the Resolution Mine for which a new source analysis needs to be conducted to be either a mine or a mill. A breakdown of the new source analysis as defined by 40 CFR 122.2 can be found in the table below. ADEQ has also attached a flow chart which graphically represents the new source analysis process.

Applicable Definition Subpart	Analysis
40 CFR 122.2 - New source means any building, structure, facility, or installation from which there is or may be a "discharge of pollutants," the construction of which commenced: (a) After promulgation of standards of performance under section 306 of CWA which are applicable to such source.	The analysis of this definition starts at the end. What is the applicable source containing a performance standard as prescribed in section 306 of the CWA? Section 306 of the CWA contains the effluent limitation guidelines for the major industrial categories. The Resolution Mine falls under Subpart J of the Ore Mining and Dressing point source category. The applicable source with effluent limitation guidelines regulated under this

Applicable Definition Subpart	Analysis
	subcategory are mines and mills (there is currently no mill at the Resolution mine.) Therefore, the applicable construction date used in this analysis is when the mine originally began operations, which in this case is in the early 1900's with the onset of the Magma Mine. The Magma Mine has always been an underground mine where shafts are drilled to extract ore from new ore bodies. When Resolution acquired the Magma Mine, shaft 10 was deepened and other features were constructed after 1982. December 1982 is the promulgation date of the new source performance standards applicable to the mine. However, each new shaft or new feature e.g. new cooling system or expanded wash bay, constructed in the mining area or site are not new mines. Therefore, ADEQ concludes no new sources (i.e., no new mines) have been added to this permit.[2]

40 CFR 122.2 Conclusion

Because there are no source performance standards for features of a mine other than those applicable to a whole mine, the features added to the Resolution Mine are not new sources as defined in 40 CFR 122.2.

New Source Analysis – 40 CFR 122.29 (b)

ADEQ then analyzed whether the new features of the Resolution Mine qualified as new sources under 40 CFR 122.29(b). In doing so, ADEQ relied upon several EPA documents clarifying how this analysis is to be performed. In a final rule promulgated in September, 1984 *(see 48 Federal Register 38043)* the EPA established a "substantially independent" test to ascertain whether construction at the site of an existing source, which does not involve total replacement of process or production equipment, would result in a new source. EPA clarified this test by adding factors which should be considered in making the determination of whether construction at an existing facility results in processes that are substantially independent and therefore qualify as a new source. They are: (1) The extent to which the new facility is integrated with the existing plant; and (2) the extent to which the new facility is engaged in the same general type of activity as the existing source.

[2] Had the effluent limitation guidelines clearly identified a mine shaft as a source required to meet a source performance standard, shaft 10 would have been considered a new source because it was constructed after 1982. That is not the case, and shaft 10 and other new features of the mine are not new sources as defined in 122.2. Moreover, had Resolution constructed a new mill on the site, that mill would be considered a new source and the 40 CFR 440.100 effluent limitation guidelines would prohibit any discharge from that mill.

The following analysis in the table below constitutes a new source analysis as defined in 40 CFR 122.29(b).

Applicable Definition Subpart	Analysis
122.29(b) Criteria for new source determination. (1) Except as otherwise provided in an applicable new source performance standard, a source is a "new source" if it meets the definition of "new source" in § 122.2, and	ADEQ considers this definition as a threshold definition. If the source is not a "new source" as defined in 122.2 then that source is not a new source under 122.29(b)(1) and no more analysis needs to be conducted. As discussed previously, ADEQ does not consider this a new source under 40 CFR 122.2. However, for the purpose of this Memorandum, ADEQ has continued its new source analysis of the new features of the Resolution Mine to ensure that there is no confusion regarding the status of these features.
(i) It is constructed at a site at which no other source is located; or	The existing source at this site is the mine. Moreover, the term "site" is also defined in 40 CFR 122.2 and means *"the land or water area where any "facility or activity" is physically located or conducted, including adjacent land used in connection with the facility or activity."* It is clear that the term "site" encompasses not only the pre-existing mine, but also any adjacent land upon or under which mining activity will take place. Because the mine is the existing source at the site, it is not constructed at a site where no other source is located and therefore not a new source.
(ii)It totally replaces the process or production equipment that causes the discharge of pollutants at an existing source; or	The existing source at this site is the mine. A mine is an active mining area where ore is extracted by using any means or methods (40 CFR 440-132(a)). Mining is an extraction process. Resolution Mine is an underground mine where the extraction of ore involves drilling shafts to access, extract and bring ore to the surface for processing and concentrating. This process has not changed from the original process used when the site was called the Magma Mine. Therefore, the process of extracting ore is not being "totally replaced." The permitted discharge at this site with an effluent limitation guideline is mine drainage. Mine drainage is a defined term which means, *"any*

Applicable Definition Subpart	Analysis
	water drained, pumped or siphoned from a mine" 40 CFR 440.141. Dewatering operations occur at underground mines in order to get access to the ore. At the Resolution Mine, the production equipment dewatering the mine consists of pumps, pipes and conveyances. The mine drainage is conveyed from shaft 10 through the Never Sweat Tunnel. The Never Sweat Tunnel was constructed at the site in the early 1970's with the purpose of connecting the east plant to the west plant. The Never Sweat Tunnel has been used to convey mine drainage since it was built in the 1970's, and the new features will still utilize the tunnel to convey mine drainage. After the mine drainage leaves the Never Sweat Tunnel, it is treated and either sent to Queen Creek or to the New Magma Irrigation District for irrigation water. Resolution has not reported any discharges to Queen Creek because all mine drainage has been sent to the irrigation district. Resolution has increased mine drainage pumping capacity with the addition and deepening of shaft 10. However, in the ore mining and dressing subcategory, there are no source performance standards specific to pumps, tunnels or shafts. Therefore, there is no production equipment to "totally replace" in this definition subpart.
(iii) Its processes are substantially independent of an existing source at the same site. In determining whether these processes are substantially independent, the Director shall consider such factors as the extent to which the new facility is integrated with the existing plant; and the extent to which the new facility is engaged in the same general type of activity as the existing source.	The existing source at this site is the mine. The processes employed by the mine are those of extracting ore from ore bodies. The new features, such as the development of shaft 10, the cooling tower and the wash bays, are all features included within the same site or mine area. These features are fully integrated into the existing site, with mine drainage being conveyed through the Never Sweat Tunnel from the east plant to the west plant. From the west plant the drainage is treated with the outfall to Queen Creek.

Applicable Definition Subpart	Analysis
	The new features added to the mine are supporting the same process that has always existed at the site, which is extracting ore by any means or methods. Therefore, there are no processes that are substantially independent of the existing process to extract ore.
(2) A source meeting the requirements of paragraphs (b)(1) (i), (ii), or (iii) of this section is a new source only if a new source performance standard is independently applicable to it. If there is no such independently applicable standard, the source is a new discharger. See § 122.2.	The source in question (the mine) does not meet the requirements of (b)(1)(i), (ii), or (iii) of this section. If a source does not have an applicable performance standard then it can't be considered a new source. See 40 CFR 122.29(b)(2): *"[A] source...is a new source only if a new source performance standard is independently applicable to it."* The new source performance standards applicable to the Ore Mining and Dressing Category were promulgated in 1982. The applicable source regulated at this site is the mine, which existed as the Magma Mine prior to 1982. The source is not a new discharger because it is a site that has already received an effective NPDES permit. Also, the Appellants expressly stated that they were not claiming that the site was a new discharger.[3]
(3) Construction on a site at which an existing source is located results in a modification subject to § 122.62 rather than a new source (or a new discharger) if the construction does not create a new building, structure, facility, or installation meeting the criteria of paragraph (b)(1) (ii) or (iii) of this section but otherwise alters, replaces, or adds to existing process or production equipment.	The construction at this site does not create a new building, structure, facility, or installation meeting the criteria of paragraph (b)(1) (ii) or (iii) of this section because there are no source performance standards independently applicable to the features of the mine. Consistent with this subpart and with 40 CFR 122.41(a): "Duty to Reapply", ADEQ received a renewal permit application where ADEQ updated

[3] From AMRC Prehearing Disclosures, Doc #45, p 7, footnote 6. "Appellants do not contend that the Resolution Copper Mine is a "new discharger" under 40 C.F.R. § 122.4(i); AAC R18-9-A903(7), nor do they contend that the RCM site is a "a site at which no other source is located" under 40 C.F.R. § 122.29(b)(1)(iii)."

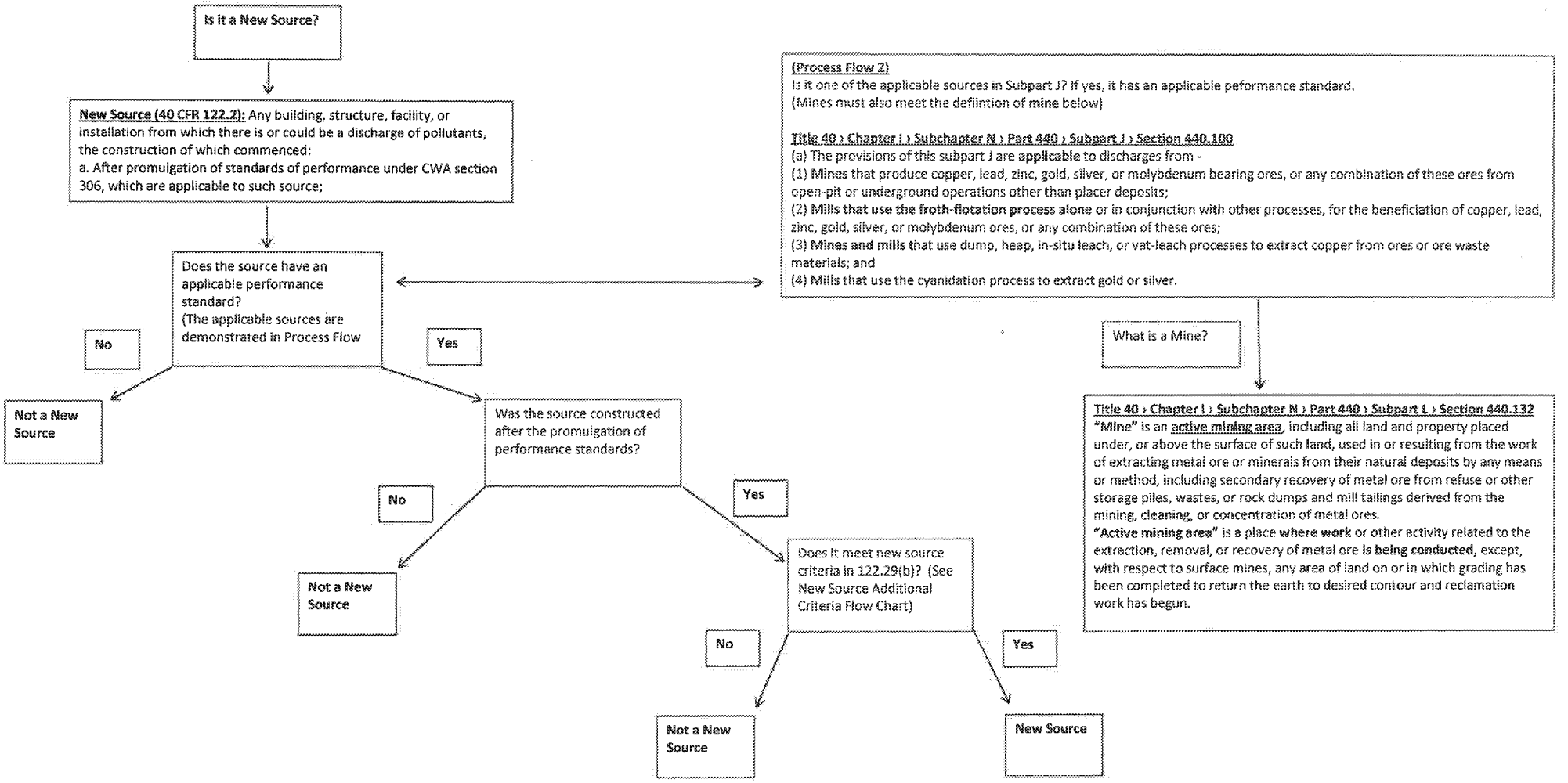
Applicable Definition Subpart	Analysis
	the permit and factsheet to incorporate updated site information submitted in Resolution Copper's renewal application. Therefore, ADEQ has considered this permit modified to reflect the most current site conditions that have either altered, replaced, or added to the existing process.
(4) Construction of a new source as defined under § 122.2 has commenced if the owner or operator has: (i) Begun, or caused to begin as part of a continuous on-site construction program: (A) Any placement, assembly, or installation of facilities or equipment; or (B) Significant site preparation work including clearing, excavation or removal of existing buildings, structures, or facilities which is necessary for the placement, assembly, or installation of new source facilities or equipment; or (ii) Entered into a binding contractual obligation for the purchase of facilities or equipment which are intended to be used in its operation with a reasonable time. Options to purchase or contracts which can be terminated or modified without substantial loss, and contracts for feasibility engineering, and design studies do not constitute a contractual obligation under the paragraph.	As described in the above analysis, the construction date applicable to the promulgation of the new source performance standard is December, 1982. The source being permitted is the existing mine. Therefore, based on this definition of construction, the mine commenced construction prior to the promulgation of the NSPS.

40 CFR 122.29(b) Conclusion

A mine is defined as an area, which includes all land and property where the work of extracting ore is done by any means or method. A mine is constantly expanding to extract new ore. ADEQ considers features that have been recently constructed at the Resolution Mine, such as shaft 10, a cooling tower blowdown, or vehicle wash bay, as new features added to the mine area that are both fully integrated with existing process and fully engaged in the same general type of activity. They are also new features that do not have independent performance standards applicable to them.

In summary, the new features added to the Resolution Copper Mine do not quality as new sources under the CWA because they are constructed at a site where existing sources are located, they do not

totally replace the process or production equipment at the site, nor are they substantially independent of an existing source at the site. This conclusion is consistent with ADEQ's original permit decision issued to the Resolution Copper Mine on January 23, 2017 and thus no changes or modifications to AZPDES permit AZ0020389 are necessary as a result of this analysis.



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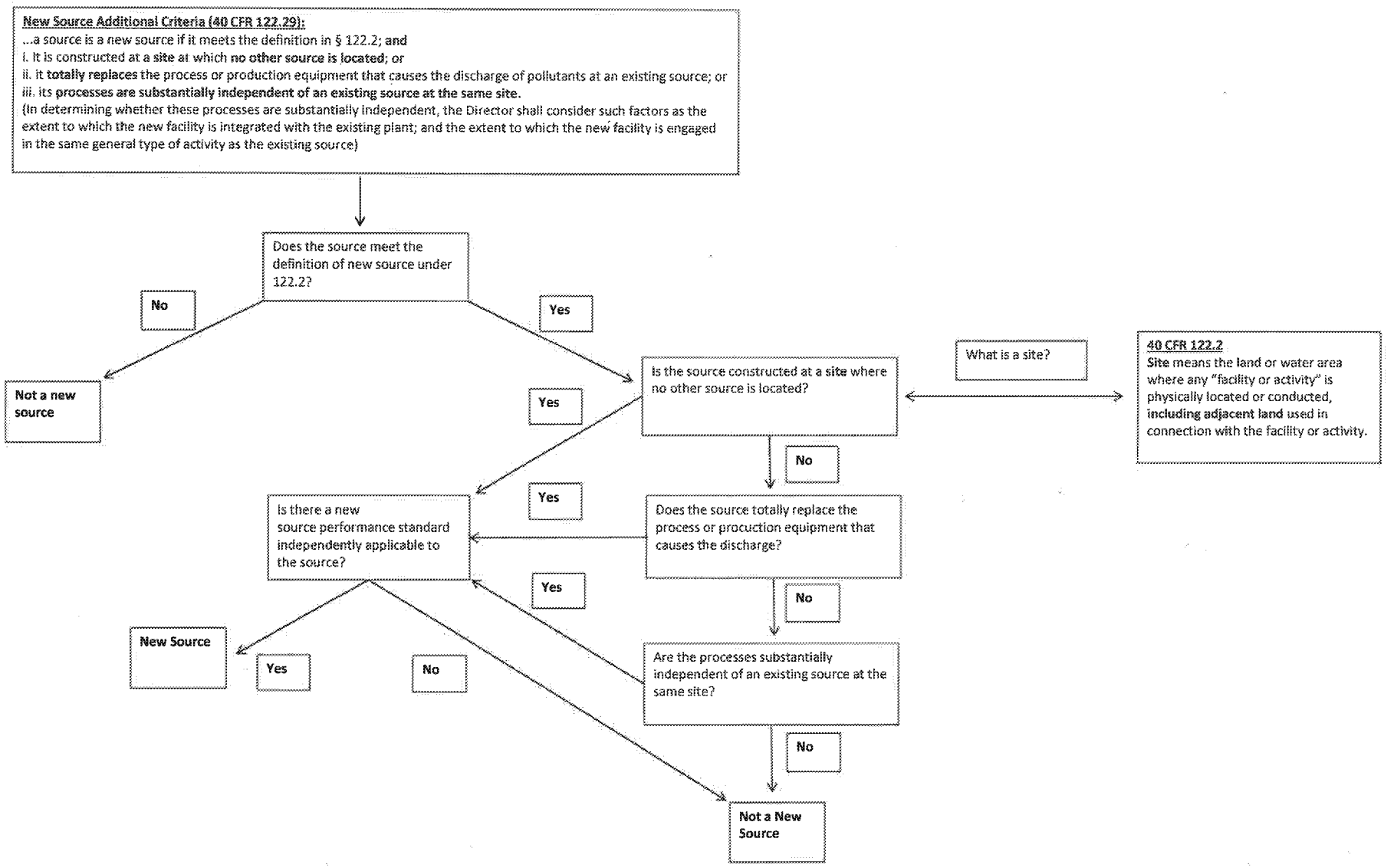
New Source Additional Criteria (40 CFR 122.29):
...a source is a new source if it meets the definition in § 122.2; and
i. It is constructed at a site at which no other source is located; or
ii. it totally replaces the process or production equipment that causes the discharge of pollutants at an existing source; or
iii. its processes are substantially independent of an existing source at the same site.
(In determining whether these processes are substantially independent, the Director shall consider such factors as the extent to which the new facility is integrated with the existing plant; and the extent to which the new facility is engaged in the same general type of activity as the existing source)
Does the source meet the definition of new source under 122.2?
No
Not a new source
Yes
Is the source constructed at a site where no other source is located?
What is a site?
40 CFR 122.2
Site means the land or water area where any "facility or activity" is physically located or conducted, including adjacent land used in connection with the facility or activity.
Yes
No
Is there a new source performance standard independently applicable to the source?
Yes
Does the source totally replace the process or procuction equipment that causes the discharge?
Yes
No
New Source
Yes
No
Are the processes substantially independent of an existing source at the same site?
No
Not a New Source