Factual Record

Molymex II Submission

(SEM-00-005)

Prepared in Accordance with Article 15 of the North American Agreement on Environmental Cooperation

August 2004

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1. Executive Summary

Articles 14 and 15 of the *North American Agreement on Environmental Cooperation* (NAAEC) establish the process regarding citizen submissions and the development of factual records relating to the effective enforcement of environmental law. The Secretariat of the Commission for Environmental Cooperation (CEC) of North America administers this process.

On 6 April 2000, Academia Sonorense de Derechos Humanos, A.C. and Domingo Gutiérrez Mendivil (the "Submitters") filed a submission with the Secretariat in accordance with NAAEC Article 14. The submission asserted that Mexico is failing to effectively enforce its environmental law in relation to a molybdenum roaster operated by Molymex, S.A. de C.V. ("Molymex") in the municipality of Cumpas, Sonora, Mexico.

On 17 May 2002, the Council resolved unanimously to instruct the Secretariat to prepare a factual record in relation to the alleged failure to effectively enforce the General Law on Ecological Balance and Environmental Protection (*Ley General del Equilibrio Ecológico y la Protección al Ambiente—LGEEPA*) and Mexican Official Standard NOM-022-SSA1/1993[1] ("NOM-022") with respect to the operation of the molybdenum production plant by Molymex S.A. de C.V., to which submission SEM-00-005 refers.

In the development of this factual record, the Secretariat considered publicly available information, information provided by Mexico, Molymex, the Submitters, and other interested parties, and technical information developed by the Secretariat through independent experts. In this factual record, the Secretariat presents the facts relevant to whether or not Mexico is failing to effectively enforce, with respect to Molymex, various provisions relating to environmental impact, the definition of zones in which polluting facilities may be sited, and ambient air SO_2 concentrations. This factual record centers on enforcement carried

1. NOM-022-SSA1/1993 – Environmental Health. Criterion for assessing air quality with respect to sulfur dioxide (SO_2). Standard value for ambient air sulfur dioxide (SO_2) concentration as a public health protection measure. Published in the Official Gazette of the Federation (*Diario Oficial de la Federación*—DOF) on 23 December 1994.

out by Mexico and not the actions taken by Molymex, although detailed facts regarding Molymex are presented herein.

1.1 Molymex's operations

Molymex, S.A. de C.V. was incorporated in May 1979 as part of Grupo Frisco and, until 1991, operated a molybdenum roaster in Cumpas and other facilities. On 30 June 1994, Grupo Frisco sold the roaster and its Molymex shares to the Chilean consortium Molymet S.A. On 5 January 1995 Molymex resumed operations under an operating permit (OP) issued by the Ministry of Social Development (*Secretaría de Desarrollo Social*—Sedesol) on 11 February 1994. The authorized production for the plant increased from 15 million pounds annually in 1994 to 40 million pounds annually following the expansion project authorized in January 1999. Since Molymex resumed operations in 1995, several Cumpas and Hermosillo residents and civic organizations have accused the company of violating environmental law and causing contamination that allegedly affects the health of the residents of the Municipality of Cumpas.

The molybdenum sulfide roasting process that Molymex employs produces air emissions of SO_2 and solid and liquid particles. SO_2 is a colorless gas with a characteristic acrid odor and bittersweet taste; human beings can detect its taste at ambient air concentrations as low as 0.3 parts per million (ppm) and its smell at concentrations of 0.5–0.8 ppm. SO_2 can cause respiratory diseases, especially in children, the elderly and asthmatics, and can worsen pulmonary and heart problems. SO_2-caused health problems are worsened by the presence of particles and ozone. The principal effect of SO_2 in the environment is the formation of acid rain, which damages forests, crops, houses and buildings, and contributes to the acidification of soils, rivers and lakes. SO_2 is carried over great distances and reacts to form particles that are deposited far from their source.

1.2 Assertions regarding enforcement of environmental impact law

The submission asserts that the Mexican environmental authorities are failing to effectively enforce its environmental impact law in the case of Molymex by allowing it to operate without an environmental impact authorization (*autorización de impacto ambiental*). The environmental authority asserts that the environmental impact assessment (*evaluación del impacto ambiental*—EIA) procedure was not applicable to Molymex because the obligation to perform an EIA was incorporated

into Mexican law in 1982, it is of a purely preventive nature, and its retroactive enforcement would be unconstitutional. Mexico further states that it has in fact effectively enforced environmental impact law, because Molymex's expansion project of 1998 underwent an EIA and an authorization was issued for it.

The environmental authority's arguments for not requiring Molymex to obtain an environmental impact authorization involve legal issues not yet resolved by the Mexican courts. Although EIA is a preventive tool, none of the versions of the law in fact provides that EIA may not be applied to existing activities. To the contrary, the Regulation to the LGEEPA on Environmental Impact Assessment (*Reglamento de la LGEEPA en Materia de Evaluación del Impacto Ambiental*—REIA) currently in force, as well as the former Regulation to the LGEEPA on Environmental Impact (*Reglamento de la LGEEPA en Materia de Impacto Ambiental*—RIA) expressly contemplate the authority's power to require an EIA for existing works and activities. The federal courts have not yet had an opportunity to interpret these provisions one way or another.

Nor is there any existing interpretation by the Mexican courts as to the constitutionality or unconstitutionality of applying the EIA procedure retroactively. The Mexican Supreme Court (*Suprema Corte de Justicia de la Nación*—SCJN) has indicated that retroactive enforcement of a law is not unconstitutional when the public interest is at issue, but the federal courts have not yet specifically analyzed the constitutionality of applying EIA retroactively as a procedure in the public interest. Also still open to interpretation is the question of whether the application of EIA is retroactive where applied not with respect to environmental impacts caused in the past, but rather to promote preventive, corrective and control measures in the future for an existing activity. The same is true on the question of whether it is retroactive enforcement to require an EIA of an activity which, although started prior to the entry into force of the EIA requirement, was suspended and resumed after the EIA requirement took effect.

1.3 Assertions regarding land use

Another allegation in the submission is that Mexico is failing to enforce LGEEPA Article 112 by failing to apply criteria for the protection of air quality so as to define properly the zone in which polluting industrial facilities may be sited in Cumpas, Sonora. The land use permit issued to Molymex by the Municipality of Cumpas on 5 October 1998 indicates that the municipality does not have a land use or urban development regulation governing this administrative matter. The permit

indicates that Molymex was granted the permit to use the land for industrial purposes as a result of a resolution passed by a majority vote of the Municipal Council, based on a historical land use pattern and because the use for industrial purposes of the lots on which Molymex is located is an established fact. The Municipal Council determined that its location is appropriate for such use since it is outside the residential area and the projected growth zone for that area. The municipality asserts that the zone where polluting facilities may be sited as required by LGEEPA Article 112 was defined through the permit issued to Molymex and by a roaster marked on the map of the Cumpas Municipal Development Plan 1998–2000. Mexico's response raises the legal question of whether issuing a land use permit – a specialized act targeting an individual land use – is a proper means for implementing LGEEPA Article 112, paragraph II, which requires that the general criteria for the protection of air quality be applied in defining, in the rural development plans, the areas where polluting industries may be sited – a generalized act not targeting individual uses. There is no interpretation of this question by the federal courts.

1.4 Assertions regarding air pollution

The third matter to which this factual record refers is the effective enforcement of NOM-022, which establishes the ambient air SO_2 standard (*límites máximos permisibles*—LMP) for the protection of public health. The submission asserts that in the first amendment to its OP Molymex was authorized to exceed those limits. Mexico asserts that the standard set in NOM-022 and the stack emissions limits established in the OP are separate issues, and that Molymex has not exceeded the applicable standard.

On 7 February 1995, one month after operations resumed at the roaster, several Cumpas residents filed a complaint about the emissions of the Molymex plant. The Office of the Federal Attorney for Environmental Protection (*Procuraduría Federal de Protección al Ambiente*—Profepa) conducted an inspection visit to Molymex in response to the complaint and, on April 3, ordered a temporary partial closing of the roaster because Molymex had exceeded the raw material loads and particle emission limits. The company filed technical justifications with Profepa on the damage that would be caused to the furnace if it were totally shut down and agreed to take certain control measures. Profepa lifted the closing order four days later. On 3 April 1996, the Ministry of Environment, Natural Resources and Fisheries (*Secretaría de Medio Ambiente, Recursos Naturales y Pesca*—Semarnap) approved a second amendment to the OP, establishing a 6-hour average SO_2 LMP of 650 parts per million by volume (ppmv) as of 1 October 1997 (instead of

1 May 2005). The authority amended the Molymex OP again on 30 May 1996, 17 June 1997, and 29 November 2000. As a result of these amendments, the compliance deadline for SO_2 stack emissions was extended to 31 December 2001, while the limit was maintained at 650 ppmv. Prior to that date, the roasting process operated with authorization under various OPs but it was not subject to any mandatory SO_2 emission limits.

The NOM–022 health protection LMP for the ambient concentration of SO_2 as an air pollutant (maximum 24-hour average of 0.13 ppm) have been in effect since Molymex began operations on 5 January 1995 and, in principle, served as a reference for determining the height required for the Molymex stack, which was increased to 83 meters in 1997. In addition, since 17 June 1997, Molymex has been subject to the maximum SO_2 concentration levels set out in its contingency plan: alert phase, 1-hour average of 0.600 ppm; alarm phase, 5-hour average of 0.400 ppm; and emergency phase, 24-hour average of 0.130 ppm.

Molymex measures SO_2 concentrations in the roaster's stack emissions by means of a continuous monitor that started operating in early August 2001. The company is required to submit to the authority with its annual operating report (*cédula de operación*) a quarterly record of its estimated and/or measured air pollutant emissions. The company must report to Profepa any 6-hour average emission level exceeding the 650 ppmv LMP.

The information on stack SO_2 concentrations requested for the development of this factual record was presented in the form of graphs of the 6-hour averages for every day in the months of January to September 2002. Stack monitoring data was not provided to the Secretariat. The graphs show maximum 6-hour average SO_2 concentrations slightly lower than 400 ppmv (about 3.2 percent by volume) and indicate that the SO_2 stack emissions did not exceed the 6-hour LMP of 650 ppmv that has been mandatory since 1 December 2001.

The Secretariat, through independent experts, analyzed the relationship between the stack LMP to which Molymex is subject and the ambient air concentration limits in NOM-022 and its contingency plan. The experts concluded that it is possible for the ambient SO_2 concentration to exceed the NOM–022 standard even if the stack emissions do not exceed the LMP of 650 ppmv because this limit is a 6-hour average. That is, if the concentration at the stack is several times greater than 650 ppmv for short periods (e.g., one or two hours) followed by low concentrations for longer periods, the 1-hour ground-level concentration may exceed 0.600 ppm and the 24-hour average ground-level concentration may

exceed 0.13 ppm even if the LMP were not exceeded at the stack. Given that the Secretariat was not provided with stack monitoring data but only graphs of 6-hour averages, the factual record does not present information as to whether, in fact, such peak concentrations occur at Molymex, and if so, their actual values or frequency.

In regard to ambient air concentrations, Molymex has been operating a continuous ambient SO_2 monitoring system in the vicinity of the plant since October 1994. It submits to the authority a monthly report of the SO_2 concentrations recorded at each monitoring station. Mexico asserts that at the monitoring stations installed by Molymex, there was no day between 1994 and 2000 when the 24-hour SO_2 limit of 0.13 ppm was exceeded, and that the annual arithmetic mean SO_2 concentration did not exceed 0.03 ppm during that period. Molymex's monitoring reports from 1994 to date also indicate that the ambient SO_2 concentration did not exceed the NOM-022 standard.

The measurement range of the analyzers that carry out this ambient air monitoring is 0–0.500 ppm, and values greater than 0.500 ppm are recorded as if equal to that value. Consequently, the perimeter monitoring network cannot detect 1-hour average ambient air SO_2 concentrations of 0.6 ppm that would trigger the alert phase and the beginning of the response phases in the Molymex contingency plan of 17 June 1997. Therefore, the values averaged to determine whether the NOM–022 24-hour LMP of 0.13 ppm is exceeded are never greater than 0.500 ppm.

The Secretariat, through independent experts, also analyzed the data contained in the monitoring tables. The experts concluded that the monthly reports of continuous SO_2 monitoring in the vicinity of the Molymex plant do not in fact demonstrate conclusively that the ambient air SO_2 standards of NOM–022 were never exceeded. The data were collected with analyzers of insufficient detection range, there were blank records and negative data, and there is no substitute data calculation algorithm to make up for the deficiencies in the data.

1.5 Additional Coprodemac concerns regarding Molymex

The people that were concerned about Molymex's operations in Cumpas formed the Committee for the Defense of the Cumpas Environment (*Comité Prodefensa de Medio Ambiente de Cumpas*—Coprodemac). On 23 May 1996, Molymex and Coprodemac signed a set of agreements and commitments to respond to the concerns raised by Coprodemac in regard to Molymex's activities in Cumpas. However, Molymex's relations with Coprodemac and some community members began to deteri-

orate in the second half of 1997. Since 1998, Coprodemac and other organizations have made demands to various authorities and in different forums that Molymex be closed, and have held a series of protest demonstrations against Molymex. Relations between Molymex and Coprodemac and these organizations remain tense. Other Cumpas residents support the presence of Molymex because it is a source of employment and makes an annual contribution of US $100,000 for improvement of municipal infrastructure and other activities sponsored by Molymex.

Coprodemac and some Cumpas residents assert that Molymex has harmed the health of people and animals and damaged the environment in the vicinity of the plant. According to Coprodemac, Molymex uses the plant's metal stack at night to avoid controlling its SO_2 emissions. The information gathered for this factual record was conflicting as to whether Molymex produced the alleged night-time air emissions, whether it is still producing them, or whether any health effects ensued from them as alleged, since none of the conflicting information received by the Secretariat is conclusive.

In the face of the concerns raised by the community about the effects of Molymex's emissions on the environment and health, the Sonora state government arranged for three studies to be carried out through the Sonora Ministry of Health in coordination with the Pan American Health Organization (PAHO) and the Universidad de Sonora: monitoring of ambient sulfur dioxide and epidemiological risk assessment; determination of molybdenum in Cumpas soil, and determination of blood lead levels in preschoolers, schoolchildren, and adults. None of these studies confirmed the alleged negative health and environmental effects, although all of them recommended additional research and continuous monitoring.

The Sonora State Ministry of Public Health determined that the company poses a low risk in a report issued on 17 December 2002, based on an environmental and occupational risk assessment Molymex carried out under NOM-048-SSA1-1993. Molymex has obtained various certificates and awards related to environmental protection, including a Clean Industry Certificate issued by Profepa and ISO-14001 certification for its environmental management system, both in 2002. Since 1994, Molymex has invested US $40 million in the Cumpas plant. The company estimates that 55 percent of this amount was devoted to environmental aspects: a scrubber, a liquid stream treatment plant, four air quality monitors, high-tech process dust control equipment and a sulfuric acid plant.

2. Summary of the Submission and the Response

The submission asserts that the Mexican authorities are failing to effectively enforce the environmental law, more specifically the following provisions of the General Law on Ecological Balance and Environmental Protection (*Ley General del Equilibrio Ecológico y la Protección al Ambiente*—LGEEPA), with respect to the Molymex plant in Cumpas, Sonora:

(i) Articles 28 paragraph III, 29 paragraphs IV and VI, and 32, by allowing the Molymex plant to operate without an environmental impact authorization, despite the differences in the operations it carried out before 1991 and those after 1994;[2]

(ii) Article 98 paragraph I, by tolerating a land use by the Molymex plant that is incompatible with that for which that land is naturally disposed;[3]

(iii) Article 99 paragraph III, because of the failure to issue an urban development plan for Cumpas, defining the allowed and prohibited land uses;[4]

(iv) Article 112 paragraph II, by failing to define the zones in which polluting facilities may be sited;[5]

(v) Article 153 paragraph VI, since waste generated during the molybdenum roasting process (allegedly imported into the country under the temporary import regime) was allowed to remain in Mexico,[6] and

(vi) Article 153 paragraph VII, by granting Molymex authorizations to import allegedly hazardous materials without providing a guarantee to comply with the applicable law and remedy any harm caused on national territory.[7]

The Submitters further argue that the environmental authorities authorized Molymex to infringe the ambient air SO_2 standards established by NOM-022 for the protection of public health.[8] They assert that

2. Submission, at 5.
3. Submission, at 8.
4. Submission, at 9.
5. Submission, at 10.
6. Submission, at 11.
7. Submission, at 12.
8. Submission, at 5.

the residents of Cumpas suffer health risks and that there are various negative environmental impacts in the area, allegedly caused by molybdenum trioxide and sulfur dioxide emitted by Molymex.

The Secretariat, after reviewing the submission, and for the reasons set forth in the Determination of 19 October 2000, requested a response from Mexico regarding only the alleged failures to enforce LGEEPA Articles 28 paragraph III, 29 paragraphs IV and VI, 32, and 112, as well as NOM-022.[9] The Secretariat received Mexico's response to the submission on 18 January 2001 (the "Response").

According to the Submitters, residents of Cumpas have complained repeatedly since 1994 about pollution from Molymex.[10] The Submitters assert that "the molybdenum concentrate roaster operated by the company Molymex, S.A. de C.V. in Cumpas, Sonora, has been carrying out its activities in violation of various provisions of environmental law. In doing so it has caused harm to human health and habitat by managing hazardous materials and wastes without any controls, and by emitting toxic substances such as sulfur dioxide, molybdenum sulfide and molybdenum trioxide into the atmosphere."[11]

The Submitters argue that Molymex "has been carrying out its activities at the town of Cumpas, Sonora without an environmental impact authorization."[12] They contend that the authority should have required Molymex to file an environmental impact statement (EIS) when that obligation was incorporated into Mexican law in 1982[13] and,

9. In its determination of 19 October 2000, the Secretariat concluded that with respect to two of the Submission's assertions, it is unclear that there exists a relationship between the facts adduced by the Submission and an applicable provision of environmental law. Regarding the alleged failure to effectively enforce the environmental law by tolerating a land use by the Molymex plant that is incompatible with the land's natural disposition, the information provided does not indicate that Molymex's activities are legally incompatible with the natural disposition of the land it occupies. Regarding the assertion that the materials imported by Molymex are hazardous materials or wastes under applicable law and that they were imported under the temporary import regime, this too cannot be ascertained from the information provided. Therefore, regarding the alleged failures to effectively enforce LGEEPA Articles 98, paragraph I and 153, paragraphs VI–VII, the Secretariat did not request a response from Mexico. SEM-00-005 (Molymex II) Secretariat Determination under Articles 14(1) and 14(2) (19 October 2000).
10. Submission, at 3.
11. Submission, at 14.
12. Submission, at 6.
13. As analyzed in greater depth in section 5.4.1 of this factual record, the EIA procedure first appears in the Federal Environmental Protection Law (*Ley Federal de Protección al Ambiente*—LFPA) of 1982 and, in more detailed fashion, in the LGEEPA of 1988.

especially, when the company resumed its furnace operations in 1994 after having been idle since 1991.[14]

In its response, Mexico puts forward three arguments to counter the assertion that it failed to enforce the environmental law with respect to Molymex: first, that environmental impact assessment (EIA) did not apply because it was not required when Molymex started operating; second, that the EIA is a purely preventive procedure; third, that the relevant environmental impact provisions were in fact enforced in regard to Molymex, since an assessment was done for the expansion project of 1998 and the authorization for it was granted.

Mexico argues that when Molymex began operating in 1979, "there was no obligation in Mexican law to obtain prior environmental impact authorization to carry out a project," and for this reason the requirement was not applied to the company.[15] Mexico maintains – based on the first paragraph of Article 14 of the Constitution, which states that "no law may be given retroactive effect with prejudice to any person" – that it cannot legally require Molymex to submit an EIS, because the law did not contemplate that requirement when the company began its operations. In support of its assertion, Mexico cites a 1921 decision of the Mexican Supreme Court (*Suprema Corte de Justicia de la Nación*—SCJN) that confirms that constitutional prohibition.[16]

Anticipating this argument, the Submitters contend that the retroactive enforcement of a law is valid in some cases, and cite two 1924 decisions in which the Supreme Court ruled that a court decision may be given retroactive effect where public or social interest so dictates.[17] Mexico, in its response, relies only on the 1921 Supreme Court decision and does not refer to this argument of the Submitters.

The Submitters assert that until 1990 the Molymex plant operated with ore of 92 percent purity from the Cumobabi mine, which closed in 1991. According to the submission, Molymex resumed its operations in 1994 using a different material, that is a waste byproduct of the copper smelting process containing 30 percent impurities, including arsenic, cadmium, mercury, lead and selenium (in quantities not indicated). The submission also asserts that Molymex operated a seven-hearth roaster until 1991 but that when it resumed its operations in 1994, the furnace had three more hearths. Based on these facts, the Submitters assert that

14. Submission, at 7.
15. Response, at 3.
16. Response, at 4.
17. Submission, at 7.

the Molymex plant's activity changed and, consequently, the company should have been required to file an EIS as prescribed by LGEEPA Articles 28 paragraph III, 29 paragraphs IV and VI, and 32.[18]

Mexico's second argument states that "any claim that environmental impact assessment should be applied to existing industrial activities that neither required an assessment at the time they began, nor were obligated to obtain any such authorization, is contrary to the preventive nature of this instrument." Mexico argues that EIA "is of an exclusively preventive nature, and thus its precepts and provisions are prior, not subsequent, to works and activities." It further states that "at all times, Semarnat [Ministry of the Environment and Natural Resources (*Secretaría de Medio Ambiente y Recursos Naturales*)] has the power to control all the works and activities within its jurisdiction that may or do generate environmental impacts by making use of such instruments as licenses, permits, standards, economic instruments, registers, etc., above and beyond the environmental impact assessment procedure."[19]

Lastly on the EIA matter, Mexico states that the 1998 Molymex expansion project did in fact undergo the environmental impact procedure, because at that time the LGEEPA required it.[20]

The Submitters further contend that the Municipality of Cumpas, in violation of LGEEPA Article 112 paragraph II, did not issue a municipal urban development plan and thus failed to define the zones in which polluting facilities may be sited.[21] The submission contains contradictory statements on this point. On the one hand, the Submitters argue that the Municipality of Cumpas "did not issue the municipal urban development plan" and that therefore, "it did not define the zones in which polluting facilities may be sited." On the other hand, they state that the Cumpas urban development masterplan establishes a zone "devoted to industrial use" and that Molymex is located outside of that zone.[22]

Mexico asserts that it did fulfill its responsibility to define a zone in which polluting facilities may be sited, as prescribed by LGEEPA Article 112 paragraph II. Mexico states in its response that "within the scope of its jurisdiction and by means of Municipal Council Resolution (*Acta de Cabildo*) Nineteen, Special Session Eleven of 4 September 1998, the Mayor (*Presidente*) and Municipal Secretary of Cumpas, Sonora, signed

18. Submission, at 3–8.
19. Response, at 5.
20. *Ibid*.
21. Submission, at 11.
22. Submission, at 11 and Appendix IV.

document no. 854-98 of 7 September 1998 whereby an industrial land use permit was issued to the Company, which implies that the zone in which the Company was permitted to site its facility was defined through that permit."[23]

Finally, the Submitters assert that Mexico is failing to effectively enforce NOM-022, which establishes the maximum sulfur dioxide (SO_2) concentration in ambient air as a criterion for the protection of public health. The Submitters transcribe various portions of a document produced by the Sonora Office (B39) of Profepa in April 1995 which indicate that the environmental authority of Mexico "authorized the company to infringe Mexican Official Standard NOM-022-SSA1/1993" by granting the company extensions of the deadline for compliance with the SO_2 emission limits set out in its operating permit (OP).[24]

In this regard, Mexico asserts that "the company has not violated the ambient air SO_2 standard established by [NOM-022-SSAI/1993]" and that at the Cumpas monitoring station, the maximum 24-hour SO_2 concentration of 0.13 parts per million (ppm) was not exceeded between 1995 and 2000. According to the Response, the annual arithmetic mean SO_2 standard of 0.03 ppm was not exceeded or reached either during that period.[25]

Mexico concludes that "the evidence and information provided and cited in this response to the Secretariat indicate that there is no failure to effectively enforce its environmental law."[26]

3. Scope of the Factual Record

After reviewing the Submission in light of the Party's response, the Secretariat notified the Council on 20 December 2001 that some of the assertions contained in the Submission warranted the development of a factual record; specifically, those relating to the enforcement of LGEEPA Articles 28 paragraph III, 29 paragraphs IV and VI, 32, and 112, as well as those concerning NOM-022.

Further to the Secretariat's recommendation of 20 December 2001, the Council of the CEC instructed the Secretariat on 17 May 2002 by means of Council Resolution 02-03 (reproduced in its entirety in Appendix 1 of this factual record),

23. Response, at 11.
24. Submission, at 4–5.
25. Response, at 16.
26. Response, at 17.

> to prepare a factual record in accordance with Article 15 of the NAAEC and the *Guidelines for Submissions on Enforcement Matters under Articles 14 and 15 of the North American Agreement on Environmental Cooperation* for the assertions set forth in Submission SEM-00-005 that Mexico is failing to effectively enforce Articles 28 paragraph III, 29 paragraphs IV and VI, 32 and 112 of the General Law on Ecological Balance and Protection (*Ley General del Equilibrio Ecológico y la Protección al Ambiente—LGEEPA*); and the Mexican Official Standard NOM-022-SSA1/1993 with respect to operation of the Molybdenum Trioxide production facility by Molymex S.A. de C. V., located in the Municipality of Cumpas in the Mexican State of Sonora, Mexico.

Consequently, this factual record presents information relevant to the facts relating to:

i) the alleged violations of LGEEPA Articles 28 (par. III), 29 (par. IV and VI) and 32 as well as NOM-022 by Molymex; and the alleged failure by the Municipality of Cumpas to enforce LGEEPA Article 112;

ii) the enforcement of these provisions by Mexico in the case of Molymex, and

iii) the effectiveness of that enforcement.

4. The Environmental Law in Question

This factual record refers to the assertion that Mexico is failing to effectively enforce the LGEEPA and NOM-022 as they apply to the activities of Molymex in the Municipality of Cumpas, Sonora, Mexico. This section cites *verbatim* the relevant provisions of law for this factual record, using the text that is applicable to the matters in question. The Submitters invoked the language of LGEEPA Articles 28, 29 and 32 that was in force prior to the reforms of 13 December 1996. Those previous articles were incorporated into the current text of Articles 28 and 30 with only slight modifications. For the rest of the articles cited, the text was not altered by the reforms.

In its determination of 6 April 2000, the Secretariat recommended the development of a factual record only with respect to LGEEPA Articles 28, 29 paragraphs IV and VI; 32, and 112, as well as NOM-022. These LGEEPA provisions refer to obligations with regard to environmental impact and to air pollution control criteria in local development plans of the Mexican states.

LGEEPA, Article 28.[27] The execution of public or private works or activities that may cause ecological imbalance, or exceed the limits and conditions set out in the environmental protection regulations and technical standards enacted by the Federation, requires the prior authorization of the federal government, acting through the Ministry, the states, or the municipalities, according to the jurisdictions established by this Law, and all such works or activities shall comply with any requirements imposed upon them following the assessment of the potential environmental impact, without prejudice to any other authorizations within the purview of the competent authorities.

For the assessment of environmental impact caused by works or activities whose object is the exploitation of natural resources, the Ministry shall require the interested parties to include, in the corresponding environmental impact statement, a description of the possible effects of those works or activities on the ecosystem in question, considering all the elements and components involved and not only the resources to be exploited.

LGEEPA, Article 29.[28] The Federal Government, acting by the Ministry, shall assess the environmental impact contemplated in Article 28 hereof, particularly with regard to the following activities:

[...] IV.- Exploration, extraction, processing and refining of mineral and non-mineral substances, reserved to the Federation;

LGEEPA, Article 32.[29] In order to obtain the authorization contemplated in Article 28 hereof, the interested parties shall file an environmental

27. Following the reform of 1996, Article 28 reads as follows:
LGEEPA, Article 28. Environmental impact assessment is the procedure whereby the Ministry establishes the conditions governing the execution of those works and activities that could cause ecological imbalance or exceed the limits and conditions established in the applicable provisions for the protection of the environment and the preservation and restoration of ecosystems, for the purpose of preventing or minimizing the negative effects of such works and activities on the environment. To that end, in the cases determined by the Regulation issued for such purpose, anyone seeking to carry out any of the following works or activities shall require prior environmental impact authorization from the Ministry:
[...] III.- Exploration, exploitation and beneficiation of ore and substances reserved to the Federation under the terms of the Mining Law (*Ley Minera*) and the Regulatory Law to Article 27 of the Constitution respecting Nuclear Matters (*Ley Reglamentaria del Artículo 27 Constitucional en Materia Nuclear*);
IV.- Hazardous waste treatment, containment and disposal facilities as well as radioactive wastes; [...]

28. The reforms of 1996 incorporated this article nearly in its entirety into the current Article 28 (see previous note).

29. Article 32, following the reforms of 1996, was incorporated almost *verbatim* into the current Article 30, which provides as follows:
LGEEPA, Article 30. In order to obtain the authorization contemplated in Article 28 of this Law, the interested parties shall file with the Ministry an environmental

impact statement with the competent authority. As applicable, the statement shall be accompanied by a risk study of the project, its modifications, or the planned activities, consisting in the technical preventive and corrective measures necessary to mitigate the adverse effects on ecological balance occurring during its execution, normal operation, and in case of accident.

The Ministry shall establish a registry of the service providers performing environmental impact studies and shall determine the technical requirements and procedures that shall be met by service providers in order to obtain registration.

[...]

LGEEPA, Article 112. In respect of air pollution prevention and control, the governments of the States, the Federal District, and the Municipalities, according to the distribution of powers established by Articles 7, 8 and 9 of this Law, as well as the relevant local laws:

[...] II.- Shall apply the general air quality criteria in the urban development plans under their jurisdiction, defining the zones in which polluting facilities may be sited; [...]

Finally, NOM-022 provides that:

For the protection of the health of the susceptible population, the maximum 24-hour concentration of sulfur dioxide as an air pollutant shall not exceed 0.13 ppm (341 μg/m3) more than once a year and 0.03 ppm (79 μg/m3) in annual arithmetic mean.

5. Summary of other Relevant Factual Information

5.1 Process Used to Gather Information

In June 2002, the Secretariat initiated the factual record development process. The Secretariat gathered information on Mexico's initiatives and actions to enforce the environmental law in question with respect to Molymex.

The Secretariat published an overall plan for the development of the factual record (Appendix 2 of this factual record) and a description of

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impact statement containing, at a minimum, a description of the possible effects on the ecosystem or ecosystems that may be affected by the work or activity in question, considering the sum total of elements making up such ecosystems, as well as the preventive, mitigation, and other measures necessary to prevent and minimize the negative effects on the environment.

the scope of the relevant information being gathered (Appendix 3 of this factual record). Pursuant to NAAEC Articles 15(4) and 21(1)(a), the Secretariat requested Mexico and 13 of its authorities to provide the relevant information in their possession for the preparation of the factual record (Appendix 4 of this factual record contains a list of the recipients of this request and a description of the information requested). Information was received from Mexico, including information from several Mexican authorities, in response to the request. The other Mexican authorities either did not respond, indicated that they did not possess information, or stated that the matter is outside their jurisdiction. The Secretariat also invited the other two NAAEC parties and the Joint Public Advisory Committee (JPAC) to provide relevant information. The Secretariat identified 8 persons or nongovernmental organizations that might possess relevant information, including the Submitters and Molymex, and invited them to provide such information. Information was received from the Submitters, the company, and 3 persons in response to that request. (Appendix 5 of this factual record contains a list of the recipients.)

Appendix 6 contains a list of all the information gathered as a basis for this factual record, including information produced by the Secretariat through independent experts.

NAAEC Article 15(5) provides that "[t]he Secretariat shall submit a draft factual record to the Council. Any Party may provide comments on the accuracy of the draft within 45 days thereafter." Pursuant to Article 15(6), "[t]he Secretariat shall incorporate, as appropriate, any such comments in the final factual record and submit it to the Council." The Secretariat submitted the draft factual record to the Council on 17 May 2004 and received comments from Mexico on 2 July 2004. Canada and the United States did not comment on the draft factual record.

5.2 Background on the Company Molymex, S.A. de C.V.

The company Molymex, S.A. de C.V. was incorporated in Mexico on 30 May 1979 as part of a consortium called Grupo Frisco. Its mission is to operate in the mining and metallurgy industry and its primary activity is the processing of molybdenum sulfides into molybdenum oxides.

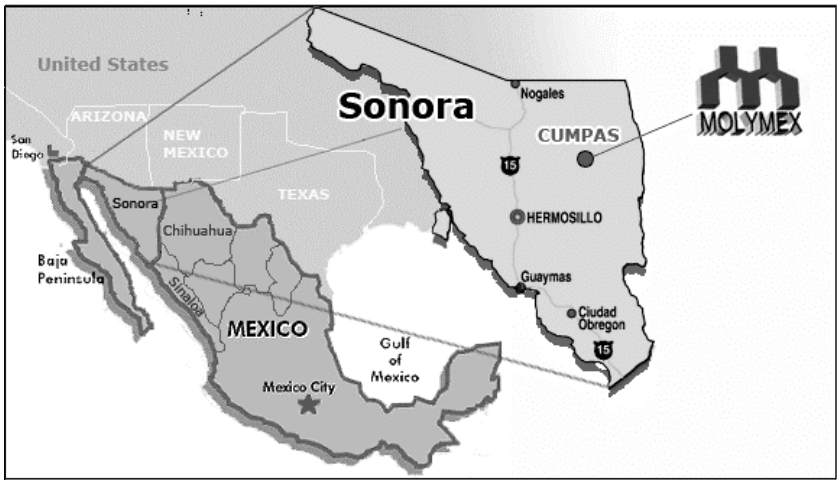
Originally, the Molymex facilities included a roaster, a copper sulfate plant, and a micronization plant.[30] The Molymex furnace processed

30. Information provided by Molymex, 15 November 2002 (IP-Molymex), Appendix 6, at 3–4.

molybdenite extracted from the "San Judas" mine by the company Cumobabi, S.A. de C.V. also owned by Group Frisco, until the mine closed in 1991.[31] On 30 June 1994, Grupo Frisco sold the roaster and 100 percent of Molymex shares to the Chilean consortium Molíbdenos y Metales S.A. (Molymet).[32] The plant's authorized production of molybdenum oxide increased from 15 million pounds per year in 1994 to 40 million pounds per year as of the expansion authorized in 1999.[33] The plant currently has an installed capacity to produce 22 million pounds of molybdenum oxide (a second furnace that had been authorized was not installed[34]) and it also has a sulfuric acid plant with a production capacity of 23,000 tons/year.[35]

The industrial facility operated by Molymex is located at kilometer 29 of the Moctezuma-Nacozari federal highway in the Municipality of Cumpas, Sonora,[36] approximately 192 kilometers northeast of Hermosillo and 171 kilometers south of Agua Prieta. The Municipality of Cumpas is in a zone of ore deposits rich in molybdenum, copper, silver and gold that have been exploited since colonial times.

Figure 1. Map showing location of Molymex



31. Information provided by the Municipality of Cumpas, 23 August 2002 (IP-Mex-AC), Appendix 1, at 2 and Appendix 2.
32. IP-Molymex, Appendix 6, at 4.
33. Submission, at 8 and IP-Molymex, at 8 and annex 2.
34. IP- Molymex, Appendix 7.
35. See Figure 1.
36. IP-Molymex, at 3.

The roasting carried out by Molymex is a pyrometallurgical process in which molybdenum disulfide is transformed into molybdenum trioxide through oxidizing roasting. Molybdenum disulfide is roasted with an excess of air (oxygen) to eliminate most of the sulfur and bring the molybdenum to its highest oxidation state.[37] Molybdenum oxides have many uses. They are employed in the production of corrosion-resistant steel alloys, as industrial catalysts, corrosion inhibitors, and agents in chemical processes, as well as in the pigment, ceramic, crystal, paint, fire-resistant resin, and agricultural nutrient industries.[38] Currently, Molymex offers two products obtained from the roasting of molybdenum concentrates: MoO_3 Technical Grade, commonly used as an alloy in the production of steel and for the production of ferromolybdenum; and MoO_3 High Solubility, used in the production of catalysts and molybdenum chemicals.[39]

Molymex states that since 1994 it has invested US $40 million in the Cumpas plant.[40] The company estimates that 55 percent of this amount was allocated to environmental aspects, including a scrubber, a liquor treatment plant, four air quality monitors, high-tech dust control process equipment, and a sulfuric acid plant.[41] This plant is designed to work with the low SO_2 concentrations derived from molybdenite roasting to produce sulfuric acid (H_2SO_4). Sulfuric acid is used in the production of phosphate fertilizers and phosphoric acid; in the chemical industry it is used as a solvent, in sulfate formation, in electron-acceptor chemical processes, and as an electrolyte; in mining, it is used in leaching.[42] Although sulfuric acid is not listed in its product catalog, Molymex states that it also markets this product and has been producing it since December 2001.[43] Appendix 7 of this factual record contains a flow chart of the process and two photographs of the plant provided by Molymex.

According to the Municipality of Cumpas, Molymex employs a staff of approximately 120 and generates 200 additional indirect jobs.[44] The company's administrative headquarters are in Hermosillo, Sonora.

37. IP-Molymex, at 10.
38. Vukasovich, M.S., 1990, cited in Appendix 3 of the information provided by the Mining Development Branch (*Dirección General de Fomento Minero*) of the Sonora state government on 5 September 2002 (IP-Mex-GS).
39. See <http://www.molymex.com.mx/catalogo.htm>.
40. IP-Molymex, at 27.
41. IP-Molymex, at 24.
42. Molymex pamphlet, March 2002.
43. Interview with Molymex personnel during Secretariat's visit to the plant in Cumpas, 8 October 2002.
44. IP-Mex-AC, Appendix 1, at 2.

Molymex has obtained various certificates and awards related to environmental protection, including a Clean Industry Certificate issued by Profepa and ISO 14001 certification for its environmental management system, both in 2002.[45]

5.3 Molymex Relations with the Community

On 7 February 1995, one month after the resumption of operations of the roaster, several Cumpas residents filed a complaint about the emissions from the Molymex plant. Profepa conducted an inspection visit to Molymex in response to the complaint and, on 3 April, ordered a temporary partial closing of the roaster because Molymex had exceeded the raw material loads and particle emission limits. The company filed technical justifications with Profepa on the damage that would be caused to the furnace if it were totally shut down and agreed to take certain control measures. Profepa lifted the closing order four days later.[46] On 3 April 1996, the Ministry of Environment, Natural Resources and Fisheries (*Secretaría de Medio Ambiente, Recursos Naturales y Pesca*—Semarnap) approved an amendment to the OP, requiring the plant not to exceed a 6-hour average SO_2 emission limit of 650 parts per million by volume (ppmv) as of 1 October 1997 (instead of 1 May 2005).[47]

The persons concerned by Molymex's operations in Cumpas formed the Comité Prodefensa de Medio Ambiente de Cumpas (Coprodemac). On 23 May 1996, Molymex and Coprodemac signed a set of agreements and commitments to respond to the concerns raised by Coprodemac in regard to Molymex's activities in Cumpas. The commitments relating to control and monitoring of the plant's emissions included: reducing the furnace load by 30 percent, raising the stack to a sufficient height to provide for adequate dispersion of pollutants, installing emission control equipment, relocating the monitoring stations and providing a mobile monitoring station.[48] Molymex also committed to providing financial support to a fund created to support community and microindustrial development in Cumpas. From its

45. IP-Molymex, at 24.
46. IP-Mex-Profepa2, at 3 and Appendix 12.
47. Response, Appendix 7 (DS-SMA-UNE-LF-500).
48. Statement of agreements and commitments entered into at the conciliation meeting held in Cumpas, Sonora between the company Molymex and the Comité de Protección del Medio Ambiente de Cumpas with the participation of federal, state and municipal authorities, all signatories thereto, held at 10:35 a.m. on 23 May 1996. Submission, Appendix 6.

inception, both Coprodemac and Molymex participated in the management of this fund, which is described by Molymex as follows:

> The fund was created with the agreement of federal, state, and municipal (Cumpas) authorities, Molymex employees, Coprodemac and Molymex itself, with the object of channeling economic resources to the Cumpas community. Since 1996, this has translated into an annual contribution of US $100,000.
>
> The result of these contributions by Molymex has been as follows: school improvements, street paving, reforestation, purchase of machinery, repair of the Cumpas-Teonadepa bridge, donation of an ambulance for the Red Cross, donation of a garbage truck to the Municipality of Cumpas, renovation of the two Cumpas public squares, teachers' salaries at the DIF [family development program] school, rehabilitation of bathrooms in the Teonadepa primary school, purchase of a truck for the Instituto del Deporte [Sports Institute], donation of a new backhoe, donation of a paving machine, and other items.[49]

On 23 May 1997, Coprodemac informed Semarnap that Molymex had fulfilled all of its agreements and commitments of 23 May 1996 and acknowledged that it had "cooperated notably in the sustainable development of the community."[50]

However, relations between Molymex, Coprodemac and some community members began to deteriorate in the second half of 1997. During 1998, Coprodemac held a series of demonstrations and made demands to various authorities, in various forums, that Molymex be closed.[51] Three civil society organizations from Hermosillo participated in these actions as well: Ciudadanos por el Cambio Democrático (CCD), Alianza Cívica (AC) and Academia Sonorense de Derechos Humanos (ASDH).

Molymex's relations with Coprodemac and these organizations remain tense. The aforementioned organizations criticize Molymex as being a foreign (Chilean) company that allegedly has no interest in the welfare of Cumpas residents, but only in producing as much as possible with minimal investment. These organizations assert that the authorities punish the people of Cumpas for minor infractions while they "protect

49. IP-Molymex, at 23–24.
50. IP-Molymex, Appendix 20.
51. Press clippings provided by Antonio Heras Durán; information provided by Ciudadanos por el Cambio Democrático for the development of this factual record, 8 October 2002 (IP-CCD); and direct observation by the Secretariat on its visit of 8 October 2002.

the Chileans." They state that the company has "divided the people" and that "that is not development."[52] Below are described several of the main points of disagreement and the relevant facts gathered.

On 17 June 1997, Semarnap postponed Molymex's deadline for compliance with the SO_2 emission limit from October 1997 to August 2001. In September of that year, Coprodemac filed a citizen complaint with Profepa against Molymex for alleged hazardous waste-related violations. The complaint was resolved on 22 November 1999, when Profepa determined that the wastes in question were not hazardous waste.[53]

In early 1998, the municipal council decided to exclude non-councilors (including Coprodemac and Molymex representatives) from the administration of the Cumpas Development Fund.[54]

During the period from 22 to 24 April 1998, Molymex's scrubber was out of operation (apparently due to a power outage) and its emissions increased. Coprodemac accused Molymex of defaulting on some of its commitments of 23 May 1996 and called for its permanent closing by means of various documents and demonstrations in public squares and in front of the plant. In October 1998, Molymex filed an environmental impact authorization request for an expansion project[55] and Coprodemac opposed this project.

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52. IP-CCD, presentation; interviews with residents during Secretariat's visit to Cumpas, 8 October 2002; *Pollution and International Capital in the Sonora Desert: The Molymex Plant at Cumpas,* IP-CCD, "United States Civic Organizations" section; letters from Antonio Heras Durán to the CEC Secretariat (30 October 2002), the Director of Environmental Complaints of Profepa (26 September 2002), the President of the National Institute of Ecology (4 October 1998), IP-CCD, CDE section; statements of several Cumpas residents at the meeting of 28 April 1998 between various authorities and Coprodemac, and other videotaped demonstrations provided by Antonio Heras Durán to the Secretariat (videos 1 and 3).
53. Technical opinion by Profepa on citizen complaint, 22 November 1999. IP-CCD, section 3.
54. In early 1998, the Municipal Council resolved that non-councilors would no longer be allowed to participate in managing the fund, with the justification that only officials elected directly by the citizens can legally represent the community. *Oficio* 437/98 of the Municipal Council of Cumpas to Armando Gallegos Quintero of Coprodemac, 6 May 1998. IP-CCD, CDE section.
55. Letter of 28 October 1998 to the Mining Development Branch of the Ministry of Economic Development and Productivity of the Sonora state government to Coprodemac, IP-Molymex, Appendix 20; meeting of 28 April 1998 between various authorities and Coprodemac, videotaped, provided by Antonio Heras Durán to the Secretariat; interview with Molymex personnel during Secretariat visit at the Cumpas plant, 8 October 2002.

On 4 October 1998, Coprodemac sent a letter to the President of the National Institute of Ecology (*Instituto Nacional de Ecología*—INE) requesting that authorization of the project be denied. Coprodemac contended in its letter that the company was not complying with environmental law or with its commitments to reduce its environmental impact. The organization further asserted that the company lied in its emission monitoring reports and as to the benefits and employment it brought to the region. Coprodemac warned that "if the Chileans obtain the authorization, we are not going to let them do it [sic]."[56]

On 10 November 1999, Coprodemac, CCD, AC, and ASDH filed a request for permanent closing of Molymex with the Sonora State Congress. The Congress' Environment and Ecology Commission and its Public Assistance and Health Commission found the request to be ungrounded. The commissions concluded that based on the technical reports by the competent authorities and in the absence of conclusive proof to the contrary, the company was in compliance with its environmental obligations and was not affecting the health of the population. The commissions' report did recommend that emissions monitoring continue and that health studies be conducted in the area.[57]

On 23 January 2000, Coprodemac sent a letter to the Governor of Sonora calling for the permanent closing and relocation of the Molymex plant or the relocation of and payment of damages for property loss and emotional distress allegedly caused by Molymex to the 307 families who signed the letter (accompanied by a list of the properties in question and the amount to be paid for them).[58] The Secretariat is not aware of any response given to this request.

During the Secretariat's visit to Cumpas on 8 October 2002, several members of the aforementioned civic organizations made presentations about Molymex and provided five videotapes. The first video presents images taken on 8 April 1998 of the countryside in the vicinity of Molymex, the plant's stack, and the reservoirs used as drinking troughs by the animals of the *ejido* dwellers in the area. The images show two horses lying down, and subsequently two people loading them into a truck. The animals appear to have difficulty walking and the narrators assert that they are intoxicated because they were approximately 350 meters from the plant and drank contaminated water. The narrator mentions that the animals were taken to the Public Prosecutor's Office in

56. Letter from the President of Coprodemac, Antonio Gallego Quintero, to the President of the National Institute of Ecology (4 October 1998), IP-CCD.
57. IP-CCD, State Congress section.
58. Information provided by Antonio Heras Durán, 8 October 2002, Appendix 8.

order to attest to these facts, and they are later observed being unloaded into a corral. In response to the narrator's question as to why the animals are sick, a woman who appears to be the owner of the animals asserts that they appear to have been poisoned by the fodder contaminated by Molymex. The same person asserts that one day, while giving water to her cows near Molymex, "a dense cloud of smoke came from the plant and she developed a sort of strong rash." The tape continues with images of a demonstration against Molymex in front of the plant on 27 April 1998. Both pro- and anti-Molymex demonstrators are shown in the village of Cumpas as well as a meeting to which Coprodemac invited several authorities to demand the closing of Molymex.

The second video presents images of Molymex stack emissions taken 25–27 April 1998 which, according to the narrator, show that the plant emits polluting gases and acid mist through the metal stack, which exceed the applicable limits. This video also presents images taken 2–7 and 9–11 May 1998 of the stack and of waste piled up near the plant.

The third video presents images of a demonstration in front of Molymex on 18–19 December 1999. In this tape, then president of Coprodemac Armando Gallegos Quintero asserts that "there were five deaths that week, they just fell dead, and there are Profepa documents to the effect that the [pollutant emissions] are causing deaths." The video shows the police detention of the leaders of the organizations heading the demonstration. This is followed by images from 13, 20 and 30 July 2000, of the Molymex expansion works; stack emissions from 2 July 2000; the demonstration on Environment Day in June 2001; and a demonstration on 20 December 1999 in support of the organizers detained the previous day.

The fourth video presents images of the Molymex plant and vicinity as well as demonstrations against Molymex in Cumpas on 22 December 2001.

The fifth and last video presents images from 2 February 2002 of the Molymex stack. The narrator asserts that these images show that the plant emits pollutants and acid mist and that it is not in compliance with the applicable standards.

The information gathered by the Secretariat indicates that several residents of the Municipality of Cumpas support the presence of Molymex, considering it to be an important source of employment for Cumpas and a source of funding for improvement of municipal infra-

structure.[59] In addition to the annual contribution it makes to the municipal development fund, Molymex sponsors several community events in order to improve its relations with Cumpas residents. For example, since 1997 Molymex has organized annually the "Cumpas Environment Week."[60]

5.4 Environmental Impact Law Enforcement with respect to Molymex

The submission asserts that Mexico is failing to effectively enforce its environmental impact law with respect to Molymex. Mexican environmental law has been amended several times since the Molymex furnace began operating in 1979. The following sections of this factual record provide information regarding: 1) the aspects of the various laws in effect since Molymex began operations that are most relevant to environmental impact assessment of potential air pollution sources; 2) the enforcement of these laws with respect to Molymex; and 3) outstanding legal issues arising from the submission and the response.[61]

5.4.1 Environmental Impact Assessment in Mexican Law

The Federal Environmental Pollution Prevention and Control Law (*Ley Federal para Prevenir y Controlar la Contaminación Ambiental*),[62] in force from 1971 to 1982, did not contemplate the EIA process. Concerning air pollution prevention and control, the law prohibited "the discharge of pollutants that alter the atmosphere to the detriment of human health and life, flora, fauna and, in general, the resources or property of the state or private persons" and subjected these discharges to standards specified by the corresponding regulations.[63] The Regulation to Prevent

59. IP-Molymex, Appendix 22; interviews with residents during Secretariat's visit to Cumpas, 8 October 2002; and support for Molymex displayed at different rallies recorded in the videotapes provided by Antonio Heras.
60. IP-Molymex, at 23-24 and Appendices 12, 19 and 22.
61. Council Resolution 02-03 provides that the Secretariat shall "consider, in developing the factual record, whether Mexico is 'failing to effectively enforce its environmental law' since the entry into force of the NAAEC on January 1, 1994. In considering such an alleged failure to effectively enforce, relevant facts that existed prior to January 1, 1994, may be included in the factual record."
62. Published in the DOF on 23 March 1971. This law was repealed on 11 January 1982 with the publication of the Federal Environmental Protection Law (*Ley Federal de Protección al Ambiente*—LFPA).
63. Article 10 of the Federal Environmental Pollution Prevention and Control Law: "It is prohibited, without observing the applicable standards, to expel or discharge pollutants that alter the atmosphere to the detriment of human health and life, flora, fauna and, in general, the resources or property of the State or private persons; therefore, the discharge of pollutants into the atmosphere, such as dust,

and Control Air Pollution Caused by Smoke and Dust Emissions (*Reglamento para la Prevención y Control de la Contaminación Atmosférica Originada por la Emisión de Humos y Polvos*)[64] of 1971 required new industrial facilities to obtain a permit from the Ministry of Health and Assistance (*Secretaría de Salubridad y Asistencia*). Applicants had to attest that the facility was in compliance with the pollution prevention and control standards[65] and file a study as follows:

> **Regulation of 1971, Article 8.** In order to obtain the permit contemplated in the preceding article, the applicant shall submit to the Ministry of Health and Assistance a study indicating the following:
>
> I.- location;
>
> II.- raw materials, products, subproducts and wastes;
>
> III.- description of the process;
>
> IV.- distribution of machinery and equipment;
>
> V.- quantity and nature of expected pollutants; and
>
> VI.- pollution control equipment.
>
> The Ministry of Health and Assistance shall grant or deny the corresponding permit within the 30 days following the filing of the application.

The Federal Environmental Protection Law (*Ley Federal de Protección al Ambiente*—LFPA), published in January 1982, was the first Mexican legal instrument to contemplate EIA. The law provided as follows:

> **LFPA, Article 7.** Public or private works projects that may produce contamination or environmental deterioration exceeding the foreseeable limits set out in the applicable regulations and standards shall be filed with the Ministry of Health and Assistance in order for the latter to review them and to determine whether to approve, modify, or reject them based on information relating to an environmental impact statement, indicating the preventive and corrective measures necessary to minimize environmental harm during their construction or operation.

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vapors, smoke, gases, radioactive materials and others shall observe the standards specified in the corresponding regulations, for which purpose accessories or equipment shall be installed or adapted as deemed necessary by the Executive – acting through the relevant agencies in each case – for the purposes of this Law."

64. Published 17 September 1971 and repealed 25 November 1988 upon the publication of the Regulation to the LGEEPA on Air Pollution Prevention and Control, which is still in force.
65. Regulation of 1971, Article 7.

The LGEEPA came into force on 1 March 1988, repealing the LFPA.[66] With some modifications, the new law also contemplated EIA:

> **LGEEPA, Article 28 (1988).** The execution of public or private works or activities that may cause ecological imbalance or exceed the limits and conditions set forth in the regulations and environmental technical standards enacted by the Federation for environmental protection shall be subject to the prior authorization of the Federal Government, acting by the Ministry or the federated entities or municipalities, according to the jurisdictions prescribed by this Law, and to compliance with the requirements imposed upon assessment of any potential environmental impact [...]

The LGEEPA was reformed in 1996. Some aspects of the ElA process were regulated in more detail and a public consultation process for projects under assessment was included, among other provisions. Article 28 reads as follows:

> **LGEEPA, Article 28 (1996).** Environmental impact assessment is the procedure whereby the Ministry establishes the conditions governing the execution of those works and activities that may cause ecological imbalance or exceed the limits and conditions set forth in the applicable provisions for the protection of the environment and the preservation and restoration of ecosystems, with a view to preventing or minimizing the negative effects of such works and activities on the environment. To that end, in the cases determined by the Regulation issued for that purpose, anyone seeking to carry out any of the following works or activities shall require prior environmental impact authorization from the Ministry:
>
> ... **XIII.-** Works or activities that correspond to matters under federal jurisdiction and that may cause grave and irreparable ecological imbalance or harm to public health or ecosystems, or that may exceed the limits and conditions set out in the legal provisions on preservation of ecological balance and environmental protection.

The application of the LGEEPA provisions was further elaborated by means of the Regulation to the LGEEPA on Environmental Impact (*Reglamento de la LGEEPA en Materia de Impacto Ambiental*—RIA), in force as of 8 June 1988,[67] and subsequently the Regulation to the LGEEPA on Environmental Impact Assessment (*Reglamento de la LGEEPA en Materia de Evaluación del Impacto Ambiental*—REIA), in force as of 29 June 2000.[68]

Furthermore, the institutional framework was modified several times during this period. In January 1984, responsibility for enforcing

66. By decree published in the DOF on 28 January 1988.
67. Published 7 June 1988 and repealed 30 May 2000.
68. Published in the DOF on 30 May 2000.

the LFPA was transferred from the Ministry of Health and Assistance to the Ministry of Urban Development and Environment (*Secretaría de Desarrollo Urbano y Ecología*). When the Ministry of Social Development (*Secretaría de Desarrollo Social*—Sedesol) was created on 4 June 1992, the power to conduct an EIA was transferred to this ministry. On 28 December 1994, Semarnap replaced Sedesol as the entity responsible for this task. Finally, since 1 December 2000, Semarnat has been the competent authority for EIA.

5.4.2 Application to Molymex

Molymex, S.A. de C.V. began operating on 30 May 1979.[69] As discussed above, the law in force on that date did not provide for EIA. With respect to the study required by the 1971 regulations, the information gathered for the development of this factual record was insufficient to determine whether, at that time, Molymex filed the study and obtained the corresponding permit.

According to the Submitters, Molymex should have obtained an environmental impact authorization because it suspended its operations in 1991 and, when it resumed roasting in 1995, did so using a larger furnace and a different raw material. The information gathered for this factual record sheds little light on the suspension of activities between 1991 and 1995 and on the differences between the activities carried out and the raw material used before and after these dates. The environmental authority responsible for EIA asserts that it only learned of the Molymex plant when the company filed the EIS for the Molymex expansion project in 1998, and therefore "they do not know whether it had ceased operating and later resumed operating with different activities."[70] Nor did the information obtained by the Secretariat reveal the type, volume, or quality of the company's air emissions during that period.

Until 1994, the Molymex facilities included a copper sulfate plant and a micronization plant. These were decommissioned when Grupo Frisco sold the Molymex shares and the roaster to Molymet.[71] On 6 January 1995, Molymex began operating as a subsidiary of Molymet.[72]

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69. IP-Molymex, at 8.
70. Information provided by the Environmental Impact and Risk Branch (*Dirección General de Impacto y Riesgo Ambiental*—DGIRA) of Semarnat, 9 August 2002, *oficio* no. UCAI/3580/02 (IP-Mex-DGIRA), p. 4.
71. IP-Molymex, Appendix 6, at 3–4.
72. IP-Mex-AC, Appendix 1, at 2, Appendix 2.

According to the Submitters, at the resumption of the plant's operations in 1995, Molymex began to process molybdenum sulfide or un-roasted molybdenum concentrate. They assert that these materials are a byproduct of copper smelting carried out by domestic and foreign companies and contain slightly more than 30 percent impurities, including arsenic, cadmium, mercury, lead, and selenium. This is in contrast to the ore from the Cumobabi mine used initially as a raw material, which allegedly had "approximately 92 percent purity."[73]

According to the municipal authorities, the "San Judas" mine operated by the Cumobabi company closed in 1991, and when Molymex resumed operating in 1995, it was processing raw materials purchased primarily from the companies Mexicana del Cobre S.A. de C.V. in Nacozari, Sonora, and Kennecott in the United States.[74] Neither Mexico nor Molymex provided information requested by the Secretariat on the differences between this raw material and the one processed previously.

The Submitters further assert that the company's operations had changed because Molymex operated a 7-hearth furnace until 1991 but at the resumption of operations in 1995, the company operated a 10-hearth furnace.[75] On this point, Mexico asserts that the furnace has had 10 hearths since 1979, and therefore the activities resumed as of 1994 did not involve a change or expansion in the facilities.[76] The first OP obtained by Grupo Frisco on 11 February 1994 for the purpose of selling the plant to Molymet in that year covered the production of molybdenum trioxide in a ten-hearth furnace for an annual production volume of 113.4 tons. The information received by the Secretariat does not help to clarify whether the furnace operated by Grupo Frisco had 7 or 10 hearths, since the information did not include any permit or authorization corresponding to the period 1979–1994. On 27 May 1994 of that year, this permit was amended to contemplate the 7,500 tons/year that Molymex intended to produce as well as the maximum installed capacity of 15,000 tons/year, with the same 10-hearth furnace.[77]

Molymex did not file an EIS prior to resuming the plant's activities in 1995. Profepa conducted an inspection visit to Molymex on 30 May 1996 and instituted an administrative proceeding because the company did not have documentary proof of a decision regarding an environmen-

73. Submission, at 3.
74. Submission, at 12 and IP-Mex-AC, Appendix 1, at 2, Appendix 2.
75. Submission, at 8.
76. Information provided by Profepa, 27 August 2002 (IP-Mex-Profepa2), *oficio* no. OAI/419/02, at 2.
77. IP-Molymex, Appendix 6, at 4.

tal impact authorization, allegedly in violation of RIA Article 5. The proceeding was resolved in favor of the company on 28 February 2000.[78] The authority concluded:

> In view of the foregoing statements and the evidence provided, the Facility has shown that the omission in question did not exist at the time of the inspection visit, since:
>
> a).- The activity subject to inspection carried out by MOLYMEX, S.A. de C.V. began in 1979 at kilometer 2 of the Cumpas-Nacozari highway, in the Municipality of Cumpas, State of Sonora.
>
> b).- The activity being carried out is the transformation of molybdenum sulfides into molybdenum oxides.
>
> c).- From the commencement of operations until 30 June 1994, the activity was carried out by Grupo Frisco, and from 30 June 1994 to date the activity has been carried out by the Chilean company Molíbdenos y Metales S.A. (MOLYMET) in accordance with a commercial transaction concluded on that date in which MOLYMEX, S.A. de C.V. became wholly owned by another company without changing its name, RFC [Federal Taxpayer Registration (*Registro Federal de Contribuyentes*)], or sector classification.
>
> d).- As of 30 June 1994, MOLYMEX, S.A. de C.V. performed new maintenance [sic] on the equipment, and as of 6 January 1995, MOLYMEX, S.A. de C.V. resumed production.
>
> e).- From the operating permit issued by the Sonora state office (139) of the Ministry of Social Development by means of *oficio* No. DS-139-4-SPA-126 of 11 February 1994; the company document dated 3 March 1994 and filed with the Sonora state office of the Ministry of Social Development, in which the company requests the modification of some of the terms of the aforementioned permit; and *oficio* no. SDS.139-4-SPA-1449 by the Sonora state office (139) of the Ministry of Social Development dated 27 May 1994 whereby said authority gives notice of the modifications and amendments to the operating permit, it may be determined that the processing of molybdenum sulfides into molybdenum oxides has been taking place since 1979 through the operation of a ten-hearth roaster of a diameter of 5.4864 meters, and therefore there has been no increase in the production capacity of said furnace.
>
> f).- In accordance with Article 28 of the General Law on Ecological Balance and Environmental Protection and Articles 5 and 6 of the Regu-

78. IP-Molymex, at 8.

> lation to the General Law on Ecological Balance and Environmental Protection respecting Environmental Impact, the environmental impact assessment procedure, and consequently the corresponding authorization, is only applicable prior to the execution of a work or activity, whereas in the case at hand, the transformation of molybdenum sulfides into molybdenum oxides through the operation of a ten-hearth roaster of a diameter of 5.4864 meters began in 1979.
>
> In light of the foregoing, this Authority sees fit to and does order the irregularity mentioned in this paragraph to be declared null and void, so that no sanction whatsoever shall be applied.[79]

As mentioned above, Mexico maintains that an EIS was not required in this case because requiring it would amount to retroactive enforcement of the law and because EIA is a purely preventive measure.[80]

However, Transitory Article 5 of the RIA provides for environmental impact assessment of activities existing prior to the entry into force of the obligation to conduct such an assessment in certain cases.[81] Mexico asserts that it did not apply Transitory Article 5 to Molymex in 1995 for the following reasons:

> [T]his article establishes as a requirement for the applicability of such an assessment the fact that ecological imbalance is occurring or the limits and conditions set out in the applicable environmental regulations and technical standards are being exceeded, which did not in fact occur in this instance, such that there was no ecological imbalance and the allowable limits set out in the standards were not exceeded. These conditions were verified by the authorities by means of inspection visits to Molymex, from which it was confirmed that there were no irregularities of the types mentioned above... That is to say, the obligation to require the environmental impact statement only applied where the inspection visits determined the existence of ecological imbalance or that the limits and conditions set out in the applicable regulations and technical standards were being exceeded, pursuant to Transitory Article 5.[82]

79. IP-Molymex, Appendix 6, at 8.
80. Response, at 4.
81. RIA, Transitory Article 5: In cases of works or activities that are already being carried out at the time that this provision comes into force, where they are covered by Article 5 of the Regulation and produce ecological imbalance or exceed the limits and conditions set out in the environmental regulations and technical standards issued for the protection of the environment, the Ministry may require the owner or the persons carrying them out to file a general environmental impact statement within a period not to exceed thirty working days from notice of that requirement.
82. IP-Mex-Profepa2, at 2–3.

The Secretariat did not obtain additional information on the inspection visits referred to in the cited paragraph nor on the official decision, if any, whereby the authority reached this conclusion.

On 9 October 1998, Molymex filed an EIS (general form) with the Environmental Impact and Land Use Planning Branch of INE for the "Molymex Expansion Project," which involved increasing the molybdenum sulfide roasting capacity to 4,200 tons per month. Molymex also filed a preliminary risk report.[83] The preliminary risk report was found insufficient and INE requested the company to file a risk analysis. This was filed on 4 January 1999. INE authorized the expansion project with various conditions on 29 January 1999 by means of *oficio* D.O.O. DGOEIA-000445.[84]

The environmental impact authorization allows Molymex to increase its production from 15 million to 40 million pounds of molybdenum trioxide annually, subject to certain conditions. Molymex obtained authorization to expand its production facility by installing a second, 14-story furnace of a diameter of 6.5 meters, a second wet electrostatic precipitator in the scrubber, two new electrostatic precipitators, a 40 m^3 ammonia storage tank and a 43 m^3 liquid petroleum gas storage tank. It also obtained authorization to build new environmental control infrastructure consisting of a product cleaning plant, a molybdenum waste treatment plant, a copper waste treatment plant, a sulfur dioxide treatment plant, and a sulfuric acid storage tank, as well as expansion of general infrastructure (parking, offices, warehouses, etc.).[85]

83. Response, at 5–6 and IP-Molymex, Appendix 2.
84. IP-Molymex, at 8 and Appendix 2.
85. The 50 conditions imposed on the project included:
    - managing the waste in accordance with the LGEEPA, its hazardous waste regulation, and the applicable NOMs (conditions 7 and 43);
    - cleaning up and restoring any soils or bodies of water that are contaminated (condition 8);
    - implementing preventive measures to guarantee the smooth and continuous operation of the pollution control equipment, including the gas scrubbing plant and the sulfur dioxide treatment plant (condition 22);
    - managing as hazardous waste the sludges generated from the draining of the various tanks during maintenance activities that have corrosive, reactive, explosive, toxic, ignitable or biological/infectious characteristics (condition 27);
    - implementing ammonia detection systems (condition 44);
    - locating the liquid petroleum gas storage tank in such a manner as to avoid the interaction of risks with other facilities (condition 46), and
    - locating the ammonia storage tank where the negative impacts would be minimized in the event of a contingency (condition 46).

According to INE, the EIA for the 1998 expansion project included the activities initiated in 1995. In this regard, Mexico asserts as follows:

> According to the information in the Environmental Impact Statement – General Form – that was filed, the expansion contemplated the same activities being carried out up to that time, also incorporating facilities for treatment of waste produced during its operation and pollution control equipment for control of sulfur dioxide and particle emissions.[86]

As stated previously, Mexico invokes the unconstitutionality of retroactive application of the law to justify not requiring Molymex to obtain an environmental impact authorization in 1995. The responsible authority explains the reason for not considering that the application of the EIA procedure to the 1998 project was also retroactive, as follows:

> When the Environmental Impact Statement, General Form, was filed for evaluation, it was determined that it was appropriate to evaluate it for the possible generation of significant adverse environmental impacts. Due to the increased production capacity, there would be higher levels of air pollutant emissions and, therefore, it would be necessary to apply mitigation measures to the environmental impacts generated.
>
> The non-retroactivity criterion was not considered because the matter at issue was the construction and installation of a totally independent production line, which was evaluated as if it were a new project.[87]

5.4.3 Outstanding Legal Issues

The submission and Mexico's response discuss legal issues relating to EIA that have not yet been resolved one way or another by the Mexican courts. The submission states that Molymex does not hold an environmental impact authorization. According to the submission, although the Molymex plant began operating in 1979, it ceased operating in 1991 and, when it resumed in 1995, it was carrying out different activities and did not obtain a prior environmental impact authorization.[88]

Mexico asserts that the EIA procedure did not exist in the environmental law applicable to Molymex when the company was established in 1979 and that Article 14 of the Constitution prohibits the retroactive enforcement of a law. Mexico further asserts that EIA cannot be applied to existing or already initiated projects or activities because it is a preventive instrument.[89]

86. IP-Mex-DGIRA, at 5.
87. *Ibid*.
88. Submission, at 6–7.
89. Response, at 3–7 and IP-Mex-Profepa2, at 2–3.

Although the preventive nature of EIA is evident, in fact none of the versions of the law provides that EIA may not be applied to existing activities and the two regulations expressly provide the contrary. The RIA in force from 7 June 1988 to 29 June 2000 prescribed the application of EIA to existing activities as follows:

> **RIA, Transitory Article 5.-** In cases of works or activities in progress at the time this provision comes into force, provided that they are contemplated by Article 5 of the Regulation and that they cause environmental imbalance or exceed the limits and conditions set out in the environmental regulations and technical standards enacted for the protection of the environment, the Ministry may require their owners or the persons carrying them out to file a general environmental impact statement...

The new REIA in force as of June 2000 also provides that EIA may be required for an already initiated activity, excluding "renovations of a facility operating since prior to 1988."

> **REIA, Article 16.-** For the purposes of Article 28, paragraph XIII of the Law, where the Ministry becomes aware of the intention of undertaking a work or activity under federal jurisdiction or of the fact that, where such activity is already initiated, its furtherance may cause grave or irreparable ecological imbalance, harm to public health as a result of environmental problems, or damage to ecosystems, or may exceed the limits and conditions set out in the legal provisions enacted for preservation of ecological balance and environmental protection, it shall immediately notify the interested party of its determination to submit the corresponding work or activity, or the uncompleted portion thereof, to the environmental impact assessment procedure, explaining the reasons for this determination, with the objective that the latter may file any reports and considerations it considers appropriate within a period not to exceed ten days.
>
> Upon receipt of such documentation, the Ministry shall, within a thirty-day period, notify the interested party whether or not the filing of an environmental impact statement applies, indicating the applicable form and time period within which this shall be done. Where the matter concerns works or activities already initiated, the Ministry shall apply the relevant safety measures in accordance with the provisions of Article 170 of the Law.
>
> Where the Ministry fails to give notice within the period indicated, this shall be construed as indicating that the filing of an environmental impact statement is not required.
>
> **REIA, Transitory Article 4**. Works or activities corresponding to renovations of a work operating prior to 1988 shall not be submitted to the environmental impact assessment procedure.

Another unresolved legal issue is the retroactive application of the EIA requirement. The submission, anticipating that Mexico would invoke in its response the unconstitutionality of a retroactive EIA requirement, cites two Mexican Supreme Court decisions to the effect that retroactive enforcement of a law is constitutional where it is in the public interest. The arguments cited by the submission state as follows:

> [...] An exception consecrated by all jurists is that the law may be held to have retroactive effects where the social or public interest so requires... (*Semanario Judicial de la Federación,* Quinta Época, Vol. VI, p. 371)
>
> [...] Retroactivity is not only the fact of governing the past but also, and quite essentially, infringing an acquired right; and it is an elementary principle that private persons may not acquire rights that are in conflict with the public interest; so that, where a law infringes a right of this type, there is no retroactivity, even where the existence of the right predates that of the law... (*Semanario Judicial de la Federación*, Quinta Época, Vol. XIV, p. 691).[90]

In its response to the submission and in the information provided for the development of this factual record, Mexico asserts that the Constitution prohibits the retroactive enforcement of the law and that subjecting an existing activity to the EIA procedure would be unconstitutional. Mexico's response refers to a decision prior to those cited in the submission affirming the unconstitutionality of retroactive law enforcement in the following terms:

> RETROACTIVITY OF THE LAW. Article 14 of the Constitution strictly prohibits any law from being given retroactive effect with prejudice to any person.[91]

Both the decision cited by Mexico and the two cited by the Submitters refer to matters that are not environmental matters and date from 1921 and 1924, respectively.

There is no interpretation by the Mexican courts as to the constitutionality of applying the EIA requirement retroactively.[92] Neither is

90. Submission, at 7.
91. *Semanario Judicial de la Federación,* Quinta Época, Pleno, Vol. VIII, p. 261. Indirect administrative amparo. Lancaster Jones Ricardo. 1 February 1921. Unanimity of nine votes. Absent: Alberto M. González and Benito Flores. The publication does not mention the name of the *ponente* (judge responsible for directing the discovery).
92. LGEEPA Article 1 provides as follows: "This Law governs those provisions of the Political Constitution of the United Mexican States that refer to the preservation and restoration of ecological balance and environmental protection on the territory of the nation and in the areas over which the nation exercises sovereignty and

there any interpretation as to whether the application of EIA is retroactive where it is applied, not by sanctioning environmental impacts caused in the past, but, rather, by requiring that an EIA be carried out of an existing activity to achieve from that time onward the preventive, corrective, and control effects provided by law. This issue has not yet been resolved.

Another legal issue arising from the submission is whether it is retroactive enforcement to require an EIA of an activity which – having started prior to the entry into force of the EIA requirement – was suspended and resumed once the EIA requirement was in effect. That is, where an activity passes from one party to another by chain of title and the activity is interrupted, it is unclear that the application of a provision to the resumed activity is retroactive. The Secretariat requested Mexico to provide additional information to clarify the authority's interpretation of the law in these circumstances but did not obtain a response. Neither is there any existing interpretation by the Mexican courts on this specific issue, which remains unresolved.

In addition to the arguments cited in the submission and the response, the courts have held as follows in relation to retroactive law enforcement:[93]

> RETROACTIVITY OF THE LAW. The Court has held in various decisions that the courts' application of laws for public order or in the general interest is never retroactive; and that monetary laws are of such a nature, in view of their spirit and the social need they fulfill.[94]
>
> PRIVATE RIGHTS. PUBLIC INTEREST. Private persons may not acquire rights in conflict with the public interest; so that, where a law infringes a right of this type, there is no retroactivity, even where the existence of the right predates that of the law.[95]
>
> RETROACTIVITY IN PUBLIC LAW. The provisions of public law, which encompass those of administrative law, one of its branches, have the effect

jurisdiction. Its provisions are designed for the protection of public order and the public interest and their purpose is to promote sustainable development and lay the groundwork for..."

93. Information provided to the Secretariat by Domingo Gutiérrez Mendívil on 18 November 2002.
94. Direct amparo. – Colonia del Agua Azul, S.A. – 30 September 1924. SCJN, *Semanario Judicial de la Federación,* Pleno, Quinta Época, Volume XV, at 815.
95. Indirect amparo 7239/60. Ingenio Tala, S.A. and co-complainants. 11 August 1961. Unanimity of 4 votes. *Ponente*: Octavio Mendoza González. SCJN, Second Chamber, *Semanario Judicial de la Federación,* Sexta Época, Vol. L, Part III, at 109.

of repealing or amending earlier provisions for the future, as required in the public interest.[96]

CONSTRUCTION. REGULATIONS. RETROACTIVITY. Where a new provision is enacted that establishes requirements for constructions and is tantamount to the placing of limitations on private property, such provision shall emanate from Congress, since Article 27 of the Constitution always speaks of "laws" or "regulatory laws" where the issue is one of placing limitations on private property by means of provisions of a general nature, and laws or regulatory laws are provisions of that kind. For it is clear that the Executive Branch could not, whether by its own authority or in exercise of the power invested in it by Article 89, paragraph I of the Constitution to promulgate regulatory laws, place limitations on private property in the absence of such laws. And where the issue is one of imposing on constructions simple requirements necessary to protect public health or safety, since this is indeed a matter of policing and good government, provided that it is not tantamount to imposing substantially new limitations on private property, this may indeed be done in general by means of an autonomous regulation of the kind provided by Article 10 [sic] of the Constitution. Now, where building safety requirements are established in general provisions of this kind, such as the Urban Development Law [*Ley de Desarrollo Urbano*] and the Construction Regulation for the Federal District [*Reglamento de Construcciones para el Distrito Federal*], some of these requirements being necessary to prevent or fight fires, in principle it may be assumed that such measures do indeed apply to buildings constructed previously without this being considered an instance of retroactive enforcement prohibited by Article 14 of the Constitution, since providing for the safety of the occupants and neighbors of the buildings cannot entail prejudice to the owner from the juridical and legal point of view, as if he possessed the acquired right of not protecting the safety of persons occupying his building. However, he could oppose such measures on the grounds that their retroactive enforcement causes him undue prejudice because they were not in force when the building was built, if these new measures are tantamount to the placing of real limitations on private property and were imposed solely in a regulation decreed by the President of the Republic, or if these measures were not formerly required and do not substantially affect the safety of the building or its occupants, or if it is impossible to reasonably adopt the measures in question, unless it is proven that the public interest demands the total or partial demolition of the building given the serious risk to which it subjects the occupants and neighbors.[97]

96. Indirect amparo 3410/38, Section 2.– La Compañía Harinera de Torreón S.A. and co-complainants. – 30 September 1938. – Unanimity of four votes. SCJN, Second Chamber, *Semanario Judicial de la Federación,* Quinta Época, Volume LVII, at 3325.

97. Indirect amparo 1177/80. Guadalupe Carral viuda de Teresa. 11 de June de 1981. Unanimous decision. *Ponente*: Guillermo Guzmán Orozco. Primer Tribunal Colegiado en Materia Administrativa del Primer Circuito, *Semanario Judicial de la Federación,* Séptima Época, Vol. 145-150, Part VI, at 85.

> RETROACTIVITY. NATURAL RESOURCES. The principle of non-retroactivity established in Article 14 of the Constitution may not be interpreted to mean that always and in every case – even in cases that involve concessions or authorizations to exploit the country's natural resources, or matters affecting the public interest or large social groups – the private interests and rights of individuals or small groups must prevail over the public interest and the changing needs that motivated the enactment of the new law governing the use of such resources in a manner more suitable to their new status, new operating techniques, an increase in the population of the country, etc. In such cases, the theory of retroactivity must be applied cautiously with respect to acquired rights or situations concretized under a previous law, since such rights and situations are materialized under the principle of *rebus sic stantibus* (unforeseeable circumstances) and could not prevail over the general interest by means of an individualistic or overly conservative application of the constitutional principle of non-retroactivity.[98]

5.5 Enforcement of Land Use Law with respect to Molymex

LGEEPA Article 112 provides as follows:

> Regarding prevention and control of air pollution, the governments of the States, the Federal District, and the Municipalities, in accordance with the distribution of powers established in Articles 7, 8 and 9 of this Law, as well as with the applicable local legislation:
>
> [...] II.- Shall apply the general criteria for protection of the atmosphere in the urban development plans within their purview, defining the zones in which polluting industrial facilities may be sited; [...][99]

The submission asserts that Molymex does not have a land use permit[100] and states that Mexico is failing to enforce its environmental law by failing to define the zones in which polluting industrial facilities may be sited in Cumpas, Sonora.[101] However, the submission also

98. Indirect amparo 210/77. Soc. Coop. de Prod. Pesq. "Tamiahua", S.C.L. 10 May 1977. Unanimous decision. *Ponente*: Guillermo Guzmán Orozco. Primer Tribunal Colegiado en Materia Administrativa del Primer Circuito, *Semanario Judicial de la Federación*, Séptima Época, Vol. 97-102, Part VI, at 224.

99. The criteria to which LGEEPA Article 112 refers are as follows:
LGEEPA, Article 110.- For the protection of the atmosphere, the following criteria shall be considered:
I.- Air quality shall be satisfactory in all human settlements and regions of the country; and
II.- Air pollutant emissions, whether from artificial or natural, fixed or mobile sources shall be reduced and controlled in order to guarantee that air quality is satisfactory to the well-being of the population and to ecological balance.

100. Submission, at 8.

101. Submission, at 10.

asserts, in what appears to be a contradiction, that according to Figure N-4 (current land use map) of the Cumpas Urban Development Masterplan, the area designated for industrial use in Cumpas is very far from the site of the Molymex plant.[102]

On 7 September 1998, the Office of the Mayor (*Presidencia Municipal*) of Cumpas, Sonora authorized the issuance of an industrial land use permit to Molymex, S.A. de C.V. in response to the company's request of 12 August 1998.[103] The Municipality of Cumpas issued Molymex the land use permit on 5 October 1998 and this fact was published in the Official Bulletin of the State of Sonora on 14 February 2000.[104]

The land use permit indicates that the Municipality of Cumpas does not have a land use or urban development regulation and that, in consequence, this industrial land use permit was issued to Molymex by means of a resolution passed by a majority vote of the Municipal Council (*cabildo*). The Municipality of Cumpas stated:

> [...] historically, [...] the industrial zone has been established to the north of the urban area since "El Transval" operated there, followed by Molymex, S.A. de C.V., and Mr. Heliodoro Rivas who operated a small metal mill on the "El Onaveño" and "El Transval" lots. Therefore, there is a historical reason for the lots concerned by this decision to be declared for industrial use... Furthermore, jobs are promoted, which is also one of the municipal obligations, for which purpose this declaration ensures an adequate relationship between workplaces and homes, since the lots in question are located at a reasonable distance from the urban residential areas... In sum, it can be said that the use of these lots for industrial purposes is an established fact and that their location is appropriate for such use... The lots are outside of the residential area and its projected growth zone, since the town tends to grow towards the southeast, and the municipality is not contemplating any action to assign the "La Media Legua" and "El Onaveño" lots a use different from the one currently given to them by Molymex, S.A. de C.V.[105]

Regarding the provision of LGEEPA Article 112 that municipalities shall define the zones in which polluting industrial facilities may be sited, Mexico states that the only municipal development plan that determines such a zone is the Municipal Development Plan for the Municipality of Cumpas, Sonora, 1998-2000 (PDM 1998-2000) and that in this plan, Molymex is included within the corresponding zone, "as

102. Submission, at 11.
103. Response, Appendix 2.
104. IP-Molymex, Appendix 4.
105. IP-Molymex, Appendix 4, at 1–2.

may be seen from the maps included in that document."[106] The copy of PDM 1998-2000 provided to the Secretariat indicates the existence of an industrial furnace in the map labeled "Cumpas Ecológico" but does not include any map defining a zone for polluting industrial facilities. According to the Municipality of Cumpas, the furnace indicated on this map is the one corresponding to Molymex and it is precisely that furnace that is the industrial zone.[107]

The Party's response raises a legal issue that is worth noting here, although it is in the jurisdiction of the federal courts only to resolve it. LGEEPA Article 112, paragraph II, requires that the general criteria for the protection of the atmosphere be applied through an action that creates a general and abstract norm: the establishment in urban development plans of the areas in which polluting industrial facilities may be sited. The issuance of a land use permit is an action that creates an individual and concrete norm. There is no interpretation by the federal courts on this matter.

5.6 Enforcement of Environmental Law Concerning SO_2 with Respect to Molymex[108]

5.6.1 Legal Framework for SO_2 Emissions

The LGEEPA and its Air Pollution Prevention and Control Regulation (*Reglamento en Materia de Prevención y Control de la Contaminación de la Atmósfera*—RATM) provide that fixed sources of air polluting emissions must observe the standards defined in the NOMs. There are two types of limit: a) an air pollutant emission limit applicable to pipe or stack emissions, and b) limits for concentrations in the environment of pollutants that may affect human health or ecosystems (ambient air or ground-level concentrations). The relevant provisions of Mexican law are as follows:

> **LGEEPA (1988), Article 113.** Pollutants that cause or may cause ecological imbalance or environmental harm shall not be emitted into the atmosphere. The provisions of this law and the regulatory provisions ensuing from it, as well as the environmental technical standards issued by the Ministry, shall be observed with respect to all air emissions. Prior authori-

106. IP-Mex-AC, Oficio No. 0446/2002, at 1–2.
107. *Ibid*.
108. Except where another source is indicated, this section is based on technical information produced for the Secretariat by Acosta y Asociados in the report, "Technical opinion on SO_2 Emissions, Submission SEM-00-005 (Molymex II)" of 31 January 2003.

zation of the Ministry is required where such emissions contain hazardous materials or wastes.[109]

RATM, Article 16. Atmospheric emissions of odors, gases, and solid or liquid particles generated by fixed sources shall not exceed the maximum allowable emission and ambient air levels for pollutants and pollution sources established in the environmental technical standards issued for such purpose by the Ministry in coordination with the Ministry of Health, based on the determination of the maximum allowable concentration values of air pollutants for human beings determined by the latter.

Likewise, and taking account of the diversity of technologies used by the sources, different values of the maximum allowable emission or ambient air levels for the same pollutant or the same source may be established in the environmental technical standards, depending on whether the sources at issue are:

I. existing sources;

II. new sources, or

III. sources located in critical zones.

The Ministry, in coordination with the Ministry of Health, and subject to the relevant studies, shall, in the relevant environmental technical standard, determine the zones considered critical.

RATM, Article 17. The persons responsible for fixed sources under federal jurisdiction that emit odors, gases, or solid or liquid particles into the atmosphere shall:

I. use equipment and systems designed to control air emissions such that the latter do not exceed the maximum allowable levels set out in the applicable environmental technical standards;

II. make an inventory of their air pollutant emissions in the manner determined by the Ministry;

III. install sampling platforms and ports;

IV. measure their air pollutant emissions, record the results in the format determined by the Ministry, and file the records with the Ministry where the latter so requires;

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109. In the revised LGEEPA of 1996, the last sentence of Article 113 was deleted and Article 111 Bis was added:
LGEEPA (1996), Article 111 Bis.- For the operation and working of fixed sources under federal jurisdiction that emit or may emit odors, gases, or solid or liquid particles into the atmosphere, the authorization of the Ministry shall be required.

V. conduct perimeter monitoring of their air pollutant emissions where the source in question is located in urban or suburban areas, where it is contiguous with protected natural areas, or where, due to the characteristics of its operation, raw materials, products and/or subproducts, it may, in the opinion of the Ministry, cause serious harm to ecosystems;

VI. keep operating and maintenance logs for its process and control equipment;

VII. give prior notice to the Ministry of the resumption of its processes in the case of planned downtime and immediate notice in the case of emergency or contingency downtime, where these may cause pollution;

VIII. immediately notify the Ministry in the event of the failure of control equipment, where the failure may cause pollution, so that the Ministry may determine the appropriate course of action; and

IX. any other requirements established by the Law and the Regulation.

RATM, Article 18. Without prejudice to the authorizations issued by other competent authorities, fixed sources under federal jurisdiction that emit or may emit odors, gases, or solid or liquid particles into the atmosphere require an operating permit issued by the Ministry, which will be for an indefinite term.

RATM, Article 20. Upon receipt of the information contemplated in the preceding article, the Ministry shall grant or deny the relevant operating permit within the thirty working days following the date when it has received all the required information. Where the permit is granted, it shall specify:

I. the frequency with which the source shall file an inventory of its emissions with the Ministry;

II. the frequency with which it shall conduct measurement and monitoring as prescribed by Article 17, paragraphs IV and V;

III. the measures and actions that shall be taken in the event of a contingency, and

IV. the equipment and any other conditions determined by the Ministry with a view to preventing and controlling air pollution.

In the operating permit, the Ministry may set specific maximum emission levels for those fixed sources which, due to their special characteristics of construction or to peculiarities of their processes, are unable to meet the

environmental technical standards establishing the maximum allowable levels for air pollutant emissions.

Semarnat is the entity empowered to issue NOMs (formerly environmental technical standards) respecting air pollution prevention and control and to grant operating permits to fixed sources. The Ministry of Health is empowered to issue NOMs respecting ambient air quality.[110] Once Semarnat has issued an OP to a fixed source, the person responsible for the source must file an annual operating report including an inventory of its air emissions.[111] Semarnat may modify the limits set out in the OP based on information filed in the annual operating report.[112]

The only NOM in force that establishes SO_2 emission limits for non-specific fixed sources is NOM–085–ECOL–1994 (NOM–085).[113] This standard applies to fixed sources using fossil fuels, e.g. diesel, and regulates SO_2 emissions from direct combustion heating appliances, except those that "produce sulfur additional to that which derives from the fuel."

The standards concerning ambient air SO_2 concentrations are those of NOM–022, which provides that the 24-hour concentration of SO_2 as an air pollutant shall not exceed 0.13 ppm (341 $\mu g/m^3$) more than once a year, and that the annual arithmetic mean concentration shall not exceed 0.03 ppm (79 $\mu g/m^3$), for protection of the health of the susceptible population. As mentioned above, this standard does not regulate emission levels from pollution sources in particular but, rather, defines air quality criteria with respect to SO_2 which the authorities must apply in their acts of air pollution prevention and control for the protection of public health.[114]

110. LGEEPA, Articles 5-VIII, 8-II, 36 and 111-I.
111. RATM, Article 21.
112. RATM, Article 22.
113. Mexican Official Standard NOM–085–ECOL–1994. Air pollution. Fixed sources. For fixed sources using solid, liquid, or gas fossil fuels or any combination thereof, establishing the maximum allowable air emission levels of smoke, total suspended particles, sulfur dioxide and nitrogen oxides, and the requirements and conditions for operation of indirect combustion heating appliances, as well as the maximum allowable emission levels for sulfur dioxide from direct combustion heating appliances. Published in the DOF, 2 December 1994.
114. NOM–022 provides that "This Mexican Official Standard shall be observed by the federal and local authorities responsible for enforcement and assessment of air quality for the purposes of public health protection... The competent authorities, within the scope of their powers, shall enforce compliance with this Mexican Official Standard... This Mexican Official Standard comes into force as a mandatory standard on the day following its publication in the Official Gazette of the Federation."

5.6.2 SO_2 Emission and Ambient air Limits Applicable to Molymex

In its molybdenum sulfide roasting process Molymex produces emissions of SO_2 and solid and liquid particles. Although roasting is done by means of direct heating with diesel, NOM–085 is not applicable to SO_2 emissions from this Molymex process because molybdenum sulfide, when transformed into molybdenum trioxide, generates sulfur dioxide additional to that which derives from the fuel. Since there is no NOM regulating this type of SO_2 stack emission for the Molymex roaster, the authorities set specific maximum SO_2 levels in the plant's OP.[115]

Before selling the plant to Molymet, Grupo Frisco applied for an OP for Molymex.[116] The Sonora state office of the former Sedesol issued the permit on 11 February 1994 by means of *oficio* No. DS–139–4–SPA–126.[117] This permit allowed an annual production of 113.4 tons but was amended three months later to contemplate the projected annual production of 7,500 tons and annual installed capacity of 15,000 tons.[118] The OP was amended again on 3 April 1996. The following month, on 30 May 1996, Semarnat cancelled the first OP and its amendments and issued a second OP to Molymex, which it amended on 17 June 1997. Finally, on 29 November 2000, the authority replaced this permit, as amended, with a third OP that is still in effect.[119] Appendix 8 of this factual record summarizes the specifications of these OPs.

The submission asserts that by means of these permits, the environmental authority authorized Molymex to violate the ambient air SO_2 concentration limits provided for the protection of public health in NOM–022, basing this assertion on a document dated April 1995 by Sonora state office B39 of Profepa recommending the temporary closing of the plant.[120]

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115. A draft Mexican Official Standard (NOM–091–ECOL/1994) published in the DOF on 20 September 1994 established the 6-hour SO_2 limit for smelting furnace emissions at 650 ppmv, but this draft NOM was cancelled. Also, the working group that developed Schedule IV of the La Paz agreements (governing the operation of copper smelters on the Mexico/United States border) took as a reference the US EPA 6-hour criterion of 650 ppmv for control of SO_2 emissions from copper smelters and similar sources. This limit was originally established in *New Source Performance Standard Subpart P.*
116. IP-Molymex, Appendix 6, at 4.
117. Response, Appendix 4.
118. IP-Molymex, Appendix 6, at 4.
119. The Secretariat received copies of the successive Molymex OPs from various sources (IP-Mex-Profepa2, Appendix XI; Response, Appendices 4–9; and IP-Molymex).
120. Submission, at 4–5, and IP-CCD, unnumbered appendix in second section.

In the first OP (11 February 1994), the authority established that the 6-hour average SO_2 concentration in Molymex's emissions was not to exceed 0.065 percent by volume (i.e. 650 parts per million by volume – ppmv) during startup, shutdown, or malfunction and that the 24-hour ground-level SO_2 concentration was not to exceed 0.13 ppm.[121] This OP provided for mandatory observance of the limits as from the resumption of operations.

On 27 May 1994, Sedesol amended the Molymex OP. The 6-hour average SO_2 emission limit of 650 ppmv was maintained but the deadline for meeting it was extended to 1 May 2005. The 24-hour SO_2 ambient standard of 0.13 ppm was eliminated.[122] On 3 April 1996, in the second amendment to the first OP, Semarnap shortened the deadline for compliance with the 6-hour average SO_2 emission limit of 650 ppmv from 1 May 2005 to 1 October 1997.[123]

On 30 May 1996, Semarnap issued the second OP to Molymex, based on the operating reports filed by the company for 1995 and 1996 and in consideration of the commitments made by Molymex on 23 May 1996 in response to the complaints of several Cumpas residents.[124] In this OP, the limits were imposed on production volume and the deadline for compliance with the SO_2 emission limits was extended from 1 October 1997 to 31 December 1997. The 6-hour limit was maintained at 650 ppmv.[125] On 17 June 1997, Semarnap amended the compliance deadline again, extending it to 1,640 calendar days from 31 December 1997, that is, approximately until June 2002.[126]

Finally, on 29 November 2000, Semarnap cancelled the previous OPs and issued the third OP, reducing the compliance deadline for SO_2 stack emissions to 31 December 2001; the limit was maintained at 650 ppmv.[127]

Concerning ambient air SO_2 concentrations, Sedesol required Molymex on 27 May 1994 to raise the stack on its plant to a sufficient height for adequate dispersal of SO_2 so as to keep the ground-level concentration from exceeding the NOM–022 standards (24-hour concentra-

121. Response, Appendix 4 (DS.139-4-SPA-126).
122. Response, Appendix 5 (DS.139-4-SPA-1449).
123. Response, Appendix 7 (DS-SMA-UNE-LF-500).
124. Submission, Appendix 6.
125. Response, Appendix 6 (DS-SMA-UNE-LF-282).
126. Response, Appendix 8 (DFS-D-0986-97).
127. Response, Appendix 9 (DS-SMA-UNE-756).

tion exceeding 0.13 ppm no more than once a year[128] and annual arithmetic mean not exceeding 0.03 ppm) (first amendment to first OP).[129] Later, on 30 May 1996 (second OP), Semarnap required Molymex to install a sulfuric acid plant (that began operating on 10 December 2001) to reduce SO_2 emissions and prevent ambient concentrations from exceeding the levels set out in NOM–022.[130]

In the contingency plan approved by Semarnap on 17 June 1997, the following ambient air SO_2 concentrations were set out as trigger thresholds for the corresponding response phases:

Phase	**Maximum ambient air SO_2 concentration (ppm)**	**Time**
1 Alert	0.600	1 hr.
2 Alarm	0.400	5 hr.
3 Emergency	0.130	24 hr.

These trigger levels were maintained in the third OP (29 November 2000).

In summary, the 6-hour average SO_2 emission limit applicable to the Molymex plant's roasting process is 650 ppmv (0.065 percent by volume), effective 31 December 2001. Prior to that date, the roasting process operated with authorization under various OPs and their amendments but without any mandatory SO_2 emission limits. The NOM–022 health protection standards for the concentration of SO_2 as an air pollutant (maximum 24-hour concentration of 0.13 ppm and annual arithmetic mean of 0.03 ppm) have been in effect since Molymex began operating on 5 January 1995 and, in principle, served as a reference for determining the height of the Molymex stack, according to the first amendment to the OP of 27 May 1994.[131] The trigger levels in the aforementioned contingency plan have been in effect since 17 June 1997.

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128. Since the standard does not establish that the standard is a calendar-day limit, i.e., from 0:00 a.m. to 23:59 p.m. on any calendar day, this value holds for any 24-hour period; i.e. the moving average 24-hour concentration.
129. Response, Appendix 5 (DS.139-4-SPA-1449).
130. Response, Appendix 6 (DS-SMA-UNE-LF-282).
131. The successive Molymex OPs establish other specifications for pollution prevention and control, including solid particle emission limits (50 mg/m^3N) and liquid particle emission limits (80 mg/m^3N). These aspects of the plant's operation are relevant to the question of whether, with respect to Molymex, Mexico is effectively enforcing its air pollution prevention and control law in general. However, since

5.6.3 Relationship between the SO_2 Limits Imposed on Molymex and Compliance with NOM–022

As mentioned above, the submission asserts that the first amendment to the OP authorized Molymex to exceed the NOM–022 limits for SO_2 concentration in ambient air for the protection of public health. This section analyzes the relationship between the two limits. Mexico states as follows:

> The air quality criteria derived from NOM–022–SSA1–1993 place limits on the concentrations of various pollutants with the object of protecting the health of the population (beginning with its most susceptible members), and these are monitoring parameters for ambient air quality.
>
> In the case at hand, since the first permit issued to Molymex, S.A. de C.V., consideration was given to establishing stack emission levels that would not affect the population located in the Molymex plant's areas of influence, and compliance deadlines were set for the stack emission limits; as well, the operation of an environmental monitoring network was imposed as a condition.
>
> Therefore, it may be concluded that the limits set out in NOM–022–SSA1–1993 and the limits set out in the operating permit for the plant's stack emissions are two very different issues. However, from 1994 to date, the results of ambient air quality monitoring indicate that sulfur dioxide concentrations have been below the limits set out in NOM–022–SSA1–1993 for ambient air...
>
> [T]he sulfur dioxide stack emission limits set out in the operating permit as amended [focus on] protection of the health of the population of the human settlements in the vicinity of the Molymex, S.A. de C.V. plant.
>
> The company's stack emissions of sulfur dioxide are directly associated with its roasting and production capacity; that is, the greater the production, the greater the SO_2 emissions. For this reason, a specific production of 7,500 TM/year of molybdenum trioxide (determined by applying dispersion models and process materials balances) was authorized in order to ensure compliance with NOM–022–SSA1–1993, among other aspects. To supplement and corroborate the results of these determinations, the implementation of an environmental monitoring system was made a necessary condition. This has operated from 1994 to date with the result that, in fact, SO_2 emissions are not exceeding the ambient air standard of

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the submission refers specifically to the SO_2 limits, the effective enforcement of the remaining specifications to which Molymex is subjected are not addressed here in further detail. Appendix 8 of this factual record presents a summary of the specifications contained in the OPs, including these aspects.

NOM–022–SSA1–1993, even including the SO_2 emissions from the Molymex, S.A. de C.V. plant to guarantee compliance with NOM-022.[132]

The relationship between the quantity of SO_2 emitted by a source and its concentration at ground level is neither direct nor constant. Any SO_2 source, regardless of size and the control equipment with which it is fitted (precipitators, sulfuric acid plant, etc.) can generate short-run peaks of SO_2 concentration at ground level. In general, these peak concentrations result from perturbations in the processes generating the emissions; they are observed during startups or shutdowns, or derive from the lack or failure of emission controls or equipment.[133] Depending on the process generating the SO_2, its concentration in stack emissions may be very low (only several ppm) or very high (greater than 4 percent by volume or 40,000 ppm). Regardless of the size of the source or the magnitude of its SO_2 emissions, it is possible that at ground level the concentration may be greater than 2 ppm for periods less than 5 minutes.[134]

Since the wind changes direction and speed during the day, SO_2 is dispersed in the air and its atmospheric concentration becomes diluted. Furthermore, the ground level SO_2 concentration may vary considerably within minutes as weather conditions change. In the case of Cumpas, the ground-level concentration may be as low as 1 part per billion (ppb) (0.001 ppm or 0.000001 percent) or greater than 2,500 ppb (2.5 ppm or 0.00025 percent) under certain conditions, such as extensive low-lying cloud cover, low wind speeds, low temperatures, or thermal inversion.[135]

NOM–022 requires the authority to ensure observance of the maximum 24-hour SO_2 concentration limit of 0.13 ppm (not to be exceeded more than once a year) and the annual arithmetic mean concentration limit of 0.03 ppm, to protect the health of the susceptible population. Since the first Molymex OP, a 6-hour emission limit of 650 ppmv and a 24-hour ambient air standard of 0.13 ppm were set for SO_2 . The first amendment to this OP maintained the 6-hour limit but eliminated the 24-hour limit. The compliance deadlines were amended as well in the succeeding OPs, such that the applicable limit was not enforceable on Molymex until 31 December 2001.

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132. Information provided by the Sonora state office of Semarnat on 20 August 2002 (IP-Mex-S.D.Sonora), *oficio* UCAI/3782/02, at 2 and appendices.
133. Acosta y Asociados, "Technical opinion on SO_2 Emissions, Submission SEM–00–005 (Molymex II)".
134. US Environmental Protection Agency, *Guideline Document for Ambient Monitoring of 5-minute SO_2 Concentrations-DRAFT,* 20 July 2000.
135. Inspection report 260398-SV-Q-028, 26 March 1998, IP-Mex-Profepa2, Appendix X.

Due to the above-mentioned effects of dilution and dispersion, if the 650 ppmv stack emission limit is complied with and fugitive SO_2 emissions (emissions not channeled through the stack) are eliminated or minimized, it is unlikely that the ambient air standards will be exceeded at ground level. However, the ambient air SO_2 concentration could exceed the NOM–022 standard even if the stack emissions do not exceed the limit of 650 ppmv, because this limit is a 6-hour average. That is, where concentration at the stack is several times greater than 650 ppmv for short periods (e.g., one or two hours) followed by low concentrations for longer periods, the 1-hour average ground-level concentration may exceed 0.600 ppm and the 24-hour average ground-level concentration may exceed 0.13 ppm even if the limits were not exceeded at the stack.

5.6.4 SO_2 Emissions of Molymex

Molymex applies the following processes to reduce its SO_2 emissions:

> [F]irst, elimination of solid particles using cyclones and electrostatic precipitators; second, acid mist and fine solid particle collection in the gas scrubbing plant; finally, desulfurization of gases through a sulfur dioxide treatment (sulfuric acid) plant...
>
> Thus the gas originating from the roasting process passes through two stages of particulate matter elimination; first, a bank of cyclones with efficiency greater than 75 percent, and second, a two-field electrostatic precipitator with efficiency greater than 98 percent. The material collected by these two systems is returned to the roaster.
>
> After the particulate matter is eliminated, the gas flow is treated in a scrubbing plant to reduce fume levels below those set out in the applicable legal provisions. For this operation, the plant is equipped with a Venturi scrubber cooled adiabatically by evaporation of water from the scrubbing solution...
>
> As one of the main ongoing commitments to SO_2 emission control, on 19 March 2002 a sulfur dioxide treatment (sulfuric acid) plant was inaugurated. It was commissioned on 10 December 2001 and is one of three such plants operating in the world, yielding definitive reductions in emissions of this pollutant. Even so, prior to the operation of this system, the emissions were always well below the limits established by the authority.[136]

In accordance with its third OP, Molymex measures sulfur dioxide concentrations in the stack emissions from the roaster by means of

136. IP-Molymex, at 11–12.

method NOM–AA–56, using a continuous monitor that has operated since August 2001. Molymex is required to make the results of these measurements available to the authority, and to submit along with its annual operating report a spreadsheet of quarterly estimated and/or measured air pollutant emissions. The company must report to Profepa any 6-hour average that exceeds the limit of 650 ppmv.[137]

The information provided to the Secretariat for the development of this factual record did not include the results recorded by the continuous monitor itself, nor the operating reports, but only copies of graphs of the 6-hour averages for every day in the months of January to September 2002. The maximum 6-hour average SO_2 concentrations shown in these graphs are slightly lower than 400 ppmv (about 3.2 percent by volume). The graphs show that the SO_2 stack emissions did not exceed the 6-hour limit of 650 ppmv that has been mandatory since 1 December 2001.[138] These graphs are reproduced in Appendix 9 of this factual record.

According to Coprodemac, Molymex uses the plant's metal stack at night to avoid controlling its SO_2 emissions. During an inspection visit on 26 March 1998, Profepa reviewed the operating logs of the gas scrubbing plant and determined that from September 1997 to March 1998 the operation of the temporary or metal stack had not been recorded.[139] Following a complaint filed by Coprodemac in September 1998, the Mining Development Section of the Sonora State Ministry of Economic Development and Productivity (*Secretaría de Desarrollo Económico y Productividad*) also reviewed the matter and concluded as follows:

1. The plant's original stack, with a height of 33 metres, was used from the resumption of operations on 6 January 1995 to 1 October 1996 without any appreciable deterioration of the environment. However, the visual impact of the plume of smoke from the stack caused nuisance and concern in Cumpas and neighboring towns, and several complaints were filed with the competent authorities.

2. In response, a meeting was held on 23 May 1996 between federal, state, and municipal authorities and Coprodemac representatives. As an initial measure to respond to the community's concerns, the company Molymex, S.A. de C.V. committed to immediately reducing the furnace load by 30 percent and raising the stack for better dispersion of the gases. These promises were fulfilled promptly and on 1 October 1996 the plant began using an 83-meter high metal stack. In May 1997, a test was run at maximum capacity during a period of 25 days with

137. Third OP, IP-Molymex, at 10-12 and Appendix 1.
138. IP-Molymex, Appendix 14.
139. Inspection report 260398-SV-Q-028, IP-Mex-Profepa2, Appendix X.

satisfactory results, and Semarnap authorized the operation of the furnace at full capacity. This metal stack operated from 1 October 1996 to 5 July 1997, and no complaints were received during those 8 months.

3. At the same meeting, Molymex proposed the installation of a gas scrubbing plant that would eliminate to some extent the visual impact of the stack smoke and further decrease the concentration of solid particles and sulfur dioxide. The gas scrubbing plant and its 83-metre high PVC stack were installed on 9 June 1997 and went into operation immediately, with satisfactory results that fully met Semarnap's requirements.

4. The metal stack mentioned in this document [sent by Coprodemac on 21 September 1998] operated during power outages on the CFE (federally owned electricity company) grid lasting generally less than 50 minutes. The company in question has now repaired its 100 kVA generator, which has sufficient capacity to operate the plant during power outages.

5. From our study of the available information and our visit to the facilities, we did not find any valid technical or legal argument to request and/or require the company Molymex, S.A. de C.V. to dismantle the metal stack referred to in its document of September 21 of this year.

6. The company Molymex, S.A. de C.V. is in full compliance with the requirements established by Semarnap in its current operating permit and has been authorized to use this stack in cases of emergency without endangering the PVC stack nor the health of the neighbouring communities.[140]

Coprodemac and several Cumpas residents assert that Molymex continues to use the metal stack at night to avoid controlling its gas emissions, and that breathing at night and in the early morning hours is very difficult due to these emissions. They assert that this has had multiple impacts on the health of Cumpas residents, particularly children and the elderly. They further argue that it has been impossible to document this practice because Molymex engages in it at night and avoids it when any authority visits Cumpas. The Secretariat did not observe this practice during its visit of 8 October 2002, nor does the information gathered indicate that any authority has observed it. Profepa conducted an inspection of Molymex on 8–9 March 2001 to determine compliance with the air emission-related environmental law in response to a citizen com-

140. Letter of 28 October 1998 from the Mining Development Branch of the Sonora State Ministry of Economic Development and Productivity to Coprodemac; IP-Molymex, Appendix 20.

plaint about these alleged night-time air emissions. The report indicates that during the period from 23–28 October 2000, Molymex used the metal stack for planned maintenance of the general plant, notifying Semarnap on October 20 of this plan. Profepa determined that no administrative proceeding should be instituted because Molymex was in compliance with its legal obligations.[141] Coprodemac provided the Secretariat with several videotapes showing a gas plume rising from the Molymex stack, but it is impossible to determine the composition and concentration of gases and particles from these images.

Molymex asserts that this accusation is false, since diverting the gases from the roaster would mean ceasing to produce sulfuric acid, a secondary product sold by the company. The company further argues that the sulfuric acid plant cannot simply be switched on during the day and off at night, since this equipment requires continuous operation.[142] The information gathered for this factual record did not enable the Secretariat to confirm whether Molymex produced the alleged night-time air emissions, whether it is still producing them, or whether any health effects ensued from them as alleged, since none of the contradictory information received by the Secretariat is conclusive as to the facts.[143]

5.6.5 Ambient SO_2 Concentration in the Molymex Area of Influence

Molymex operates a continuous ambient SO_2 monitoring system in the vicinity of the plant, consisting of a master station and four remote stations, three of them fixed and one mobile. The fixed stations were commissioned on 29 October 1994, followed by the mobile unit in September 1996. Molymex files with the authority a monthly report of the SO_2 concentrations recorded at each monitoring station. These reports include the following information:[144]

- 1-hour average concentrations for every hour of every day;
- maximum and minimum 1-hour averages for each day;

141. Inspection report 08032001-SV-Q-001 and administrative decision PFPA-DS-SJ-0588/2001, IP-Molymex, Appendix 5.
142. Interview with Molymex personnel during Secretariat's visit to plant in Cumpas, 8 October 2002.
143. IP-CCD, presentation; interviews with residents during Secretariat's visit to Cumpas, 8 October 2002; letter from Antonio Heras Durán to the CEC Secretariat, 30 October 2002, among others; statements of several Cumpas residents at the meeting of 28 April 1998 between various authorities and Coprodemac, videotaped and provided by Antonio Heras Durán to the Secretariat.
144. IP-Molymex, Appendix 15.

- daily average;
- average of daily maximums, and
- average of daily minimums.

These reports are filed both in paper and electronically, including weather data for each station. Average monthly and annual concentrations are obtained and compared with the NOM–022 standards by means of arithmetic computation of the daily SO_2 data.

The towns of Cumpas, Teonadepa and Ojo de Agua near the plant were chosen to site the three original remote stations, absent emissions and weather data for the municipality of Cumpas in late 1994.[145] Each remote station is equipped with an API 100 continuous fluorescent sulfur dioxide analyzer made by Advanced Pollution Instrumentation, Inc. This device determines the SO_2 concentration using the EQSA 0990-077 automated equivalent method approved by the US Environmental Protection Agency. These analyzers are equipped with an internal data acquisition system that keeps records of the average concentration readings for the last 1 to 60 minutes as well as the last 100 averages.[146]

The range of measurement of the API 100 analyzers is 0–0.500 ppm.[147] The remote station analyzers determine the SO_2 concentration during one hour, average the values, and transmit a 60-minute average value to the master station computer. Any of these averages is considered valid if it is calculated from at least 75 percent of the samples, i.e., 45 1-minute readings. The computer prints an hourly listing of weather and SO_2 concentration data, as well as the number of samples used in the determination of each 1-hour average.[148] The company enters this data into a spreadsheet and presents it in the form of 1-hour averages for each day of the month, expressed in ppb, grouped by remote station and month. For each day, the maximum and minimum

145. DFS-D-0986-97, 17 June 1997, IP-Mex-Profepa2, Appendix XI.6.
146. The analyzers have the capacity to recalibrate automatically, which must be done once a day, at night. The measurement, calibration, and maintenance procedures developed for these devices are those contained in Mexican Official Standard NOM–CCAM–005–1993 for sulfur dioxide, published in the DOF on 18 October 1993. For calibration, these analyzers use a certified calibration gas cylinder (EPA Protocol 2) and a dilution system used to verify the ranges operation. A log in each remote unit keeps records of calibrations performed and the details of the operation. As auxiliary devices, they are equipped with Deltec uninterruptible power units and window-type air conditioning units.
147. Report on sulfur dioxide concentration and weather parameters, October-December 1994, IP-Mex-Semarnat-D.Sonora, Appendix 1.
148. *Oficio* DFS-0986-97 of 17 June 1997, IP-Mex-Profepa2, Appendix XI.6.

1-hour averages are identified and the average daily and monthly values are computed arithmetically. The annual average concentration is then calculated from these results.[149]

Due to the 0–0.500 ppm measurement range of the analyzers, values greater than 0.500 ppm are recorded as if equal to that value. Consequently, the perimeter monitoring network cannot detect 1-hour average ambient air SO_2 concentrations of 0.600 ppm, which are supposed to trigger the alert phase and the beginning of the response phases in the Molymex contingency plan. Therefore, the values averaged to determine whether the NOM–022 24-hour limit of 0.13 ppm is exceeded are never greater than 0.500 ppm.

In the monthly reports of ambient air SO_2 concentrations provided by Molymex for the period from November 1994 to September 2002, no daily average values (on a calendar-day basis) over 0.13 ppm are reported. Likewise, the annual average values calculated from this data are lower than 0.03 ppm. That is, none of the values reported in these tables exceed the ambient air SO_2 standard of NOM–022.

The Secretariat, through independent experts, analyzed the data in the monitoring result tables. The experts concluded that the monthly reports of continuous SO_2 monitoring in the vicinity of the Molymex plant do not in fact enable one to assert that the ambient air SO_2 standards of NOM–022 were never exceeded. The analysis of the data contained in these reports reveals the following:

a) The detection capacity of the monitoring system is insufficient. As mentioned above, the detection range of the analyzers used (0.500 ppm) is lower than one of the thresholds with which the data is to be compared (the 1-hour average of 0.600 ppm). In addition, the monitors cannot detect short run concentration peaks of 2 ppm or greater.

b) The monitoring data contain blank records. Blank fields occur in the reports from every station. In some months, the proportion of hours for which no data was recorded is very high, and on occasion there are periods of more than 24 consecutive hours without any data whatsoever, yet one of the limits with which the results must be compared (0.13 ppm) is in fact a 24-hour average. There are months for which no hourly data is

149. The information obtained by the Secretariat for the development of this factual record consisted of copies of the master unit computer printouts from November to December 1994 and copies of the spreadsheets into which the original printouts were entered from January 1995 to September 2002; IP-Mex-Profepa2, Appendices I–IX.

lacking, but in many others there are periods of more than one and up to two or more consecutive days without any data at all. The most extreme case of missing data during the period from January 1995 to September 2002 occurred at the Ojo de Agua station during August 1996, when 576 hours were reported blank. The majority of these occasions include explanatory notes (e.g., broken lamp, power outage, central computer software crash, etc.). The following table presents some random (and therefore not exhaustive or necessarily representative) examples of periods without data. Appendix 10 of this factual record contains a more detailed presentation of this information.

Sample Periods without Data

Station	Dates of occurrence	Consecutive hours without data
Ojo de Agua	7–10 February 1995	69
	12–25 September 1997	336
	28 June 2000	24
Cumpas	17–18 June 2001	15
Teonadepa	2–3 February 1995	30
Mobile	6–12 September 1997	84
	17–18 June 2000	17
	6–9 June 2001	62

In some cases, the periods without data occurred in close proximity to values higher than those normally recorded. One such case occurred in February 1995 at the Teonadepa station when, after 30 hours without data, a value of 205.8 ppb was recorded, followed by 5 more hours without data. In calculating average ambient air SO_2 concentrations, the company ignored hours for which no data was recorded.

c) The monitoring data contain negative values. The reports include negative data recorded at all stations.[150] The recording of negative values of absolute value greater than the baseline drift specifications for the analyzers used raises possible problems of accuracy.[151] Negative values

150. The occurrence of negative values could be mainly due to analyzer malfunction, calibration or maintenance problems, or the presence of compounds that interfere with SO_2 measurements.

151. In January 1995, the company attributed the cases of negative values occurred during November and December 1994 to analyzer baseline drift and estimated that in no case was this drift greater than 5 % of the total range of the analyzer (*oficio* DFS-0986-97, IP-Mex-Profepa2, Appendix XI.6); that is, it was not greater than 25 ppb. However, the specifications for API Model 100 analyzers indicate that base-

were recorded at the four remote stations and at different hours of the day from month to month, indicating that it is unlikely that this would be due to the failure of any particular analyzer component.

In calculating daily average ambient air SO_2 concentration, the company considered negative numbers to be zero. The frequency of negative data recorded varies from none in some months (less frequent) to nearly 82 percent of the total possible recordable data for a given month.[152] For example:

Sample Occurrences of Negative Values

Station	Date	Number of negative values	Percent of total recordable
Ojo de Agua	September 1996	417	57.9
	October 1997	543	73.0
Teonadepa	May 1998	561	75.4
	August 2001	436	58.6
Cumpas	July 1997	611	82.1
Mobile	August 2001	425	57.2

Appendix 11 of this factual record contains a more detailed presentation of this information.

On 19 November 1996, the authority indicated to Molymex in reference to the missing data in the monthly ambient air monitoring reports, that air quality monitoring must never be interrupted and ordered it to foresee and control "the problems experienced to date by the monitoring equipment and the central weather station." The authority repeated this order on 21 January 1998.[153]

d) The monitoring system lacks a substitute value algorithm. There is no authorized algorithm for determining the substitute values to be used in cases where either no data are recorded or the data recorded do not meet the minimum quality criteria of the measurement protocol.

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line drift should be less than 0.5 % of the total range; in this case, the drift value should be less than 2.5 ppb (0.005x500) (Decision closing file 28/95, *oficio* PFPA-DS-UJ- 0570/2000, 14 March 2000, IP-Mex-Profepa2, Appendix XII.3.)

152. 720 recordable data items in months of 30 days and 744 recordable data items in months of 31 days.

153. *Oficios* DS-SMA-UNE-CM-565 (19 November 1996) and DS-SMA-UNE-CM-123 (21 January 1998), IP-Molymex, Appendix 15.

The minimum and maximum values of the monitoring data are presented in Appendix 12 of this factual record. As to the maximum values, for example, at the Ojo de Agua station a maximum of 244.4 ppb (0.244 ppm) was recorded in July 1997, while a maximum of 244.2 ppb was recorded in December 1999, with only 11 data items recorded on this latter date. At the Teonadepa station, a maximum value of 196.8 was recorded in April 1999, while at the Cumpas station, a maximum value of 166.6 was recorded in December 1999. At the mobile station, a maximum value of 260.2 was recorded in July 1997. This date marked the entry into force of the emergency plan corresponding to the 6-hour average ambient air SO_2 limit of 0.600 ppm. Prior to July 1997, maximum observed values were 368.6 ppb at the mobile station in December 1996; 268.5 ppb at Cumpas in November 1995; 169.8 at Teonadepa in July 1995, and 199.4 at Ojo de Agua in September 1995.

The experts who assisted the Secretariat in developing the technical information contained in this section indicated that the problem probably having the greatest influence on the validity of the results was the limited detection range of the API 100 analyzers used in the Molymex perimeter monitoring network.[154] The experts concluded as follows:

> Each of the data problems discussed in... this report could, to differing extents, affect the 1-hour average values recorded and, consequently, the

154. It is possible that SO_2 concentration peaks of 2 ppm or more occurred at ground level and were recorded as 0.500 ppm by the analyzers. The devices would use this value to obtain the 1-hour average concentration and the value recorded would be less than the one that actually occurred. If the concentration levels were very low compared to the limits, then the effect of the range problem might be insignificant. But, if the remaining concentration values, besides short-term peaks, were close to the limit, it might occur that the actual average exceeded the limit even though the calculated average did not. In this case, the 0.500 ppm detection limit of the device could disguise a value exceeding the applicable limit. Thus, for example, if the recorded average ambient air SO_2 concentration was 0.2 or 0.3 ppm, it is arithmetically possible that the actual average during that hour was greater than 0.6 ppm if high concentration peaks were recorded as 0.5 ppm. The likelihood would depend on the magnitude, frequency, and duration of these peaks during the hour in question. In cases like the example presented, the lack of data may be more relevant, particularly where no concentration values were recorded for several consecutive hours. The effect would not be the same where, for example, data is lacking for one or two hours in a day but the remaining 1-hour averages were relatively low, e.g., compared to 0.13 ppm, as where data are lacking for 15, 20 or more consecutive hours around higher average values, such as 0.25 ppm, as was the case at some stations. If the actual average exceeds the 0.25 ppm recorded, it is also arithmetically possible that the actual daily average exceeds 0.13 ppm even though the recorded average is lower. If, to these considerations, we add a negative analyzer baseline drift greater than the maximum established in the device specifications, than the error could be of greater magnitude due to erroneous readings.

calculation of the daily arithmetic mean ambient air SO_2 concentrations. The effect could be more or less substantial depending on the manner in which these problems occurred and the prevailing environmental conditions.

Based on our analysis of the data presented, the problems we identified with this data, and the discussion of the effects of these problems, we reached the following conclusions:

1 It is possible that ambient air SO_2 concentrations greater than 500 ppb – which is the maximum value detectable by the analyzers in the continuous perimeter monitoring network – occurred in the vicinity of the Molymex plant. Therefore, it is possible that some of the 1-hour averages recorded (and consequently, the computed daily averages) during the period analyzed are lower than the levels that actually occurred. With the data available it is impossible to rule out the occurrence of these errors, nor is it possible to estimate when they might have occurred or the magnitude they might have reached.

2 The lack of 1-hour average ambient air SO_2 concentration data, particularly for several consecutive hours and up to one or more days, means that on those days of the period analyzed it is impossible to validate the arithmetic means calculated, since there is no reliable data that would enable one to speculate about the real values that occurred during the periods in which no data were recorded. In this regard, there is no algorithm authorized by the competent authority for calculating substitute values.

3 The problem caused by the missing data is aggravated by the limited detection range of the analyzers, particularly where this missing data occurred for periods of several hours around recorded values greater than 0.13 ppm.

4 In the data presented for analysis by the CEC, the lack of documentation of the calibration procedures, the type and frequency of adjustments, and the daily logs of these actions make it impossible to judge the quality of the data reviewed. The negative values with absolute value greater than the baseline drift given in the analyzer specifications may necessitate an evaluation of the quality plan for the monitoring program and the analyzer maintenance and servicing routines. Likewise, it would be necessary to determine the real implications of these negative values on measurement accuracy.

...

155. "Technical opinion on SO_2 emissions, Submission SEM-00-005 (Molymex II)," 31 January 2003, technical information developed for the Secretariat by Acosta y Asociados.

> In view of the foregoing considerations, we can state that the information provided does not permit a definitive and unequivocal conclusion that ambient air SO_2 concentrations recorded at the monitoring stations in the zone of impact of the Molymex plant correspond, for the entirety of the data, and with a commonly accepted margin of error for this type of situation, to the real values that occurred during the period analyzed.
>
> In consequence, the interpretation of the results cannot be validated in light of the limits and standards applicable to the Molymex plant.
>
> Therefore, it is the technical opinion of this firm that the information provided does not support the assertion that "Molymex did not exceed the limits applicable to it."
>
> For clarity in the interpretation of this technical opinion, this should not necessarily be construed as an assertion to the contrary.[155]

5.7 Effects of Molymex Air Emissions on the Health of the Population and Environment of Cumpas, Sonora

Coprodemac and some Cumpas residents assert that Molymex has harmed the health of persons and animals and damaged the environment in the vicinity of the plant. The information gathered in this regard is summarized in this section.

In a bulletin in which Coprodemac invites Cumpas residents to a meeting about Molymex on 7 March 1998, the organization asserts that a September 1997 report from the Sonora State Ministry of Public Health determined that "there exists epidemiological evidence of health risks and harm associated with the presence in the environment of smoke and particles from the Molymex company in Cumpas... representing the primary cause of mortality during Molymex's startup period, since the normal percentage mortality was 19.7 percent and it increased to 33.7 percent in the municipality."[156]

As stated previously, the molybdenum sulfide roasting process generates air emissions of SO_2 and solid and liquid particles. SO_2 is a colorless gas with a characteristic acrid odor and bittersweet taste; human beings can detect its taste in the air at concentrations as low as 0.3 ppm and by smell at concentrations from 0.5 to 0.8 ppm. Because of this, populations exposed to peak ambient air SO_2 concentrations, even those of very short duration (less than five minutes), will detect the pres-

156. IP-CCD, CDE section.

ence of this gas and, depending on the magnitude, duration, and frequency of these peaks, will experience effects of SO_2 exposure. SO_2 may cause respiratory diseases, especially in children, the elderly and asthmatics, and can worsen pulmonary and heart problems. SO_2-caused health problems are worsened by the presence of particles and ozone. Since particles and SO_2 may have the same origin, i.e., come from the same source, high levels of ambient air SO_2 are generally associated with high ground-level particle concentrations.[157] High SO_2 concentrations, even for very short periods, can be particularly problematic for asthma sufferers. Ambient levels around 1 ppm for periods as short as 10 minutes can affect healthy individuals engaging in vigorous outdoor activities. The EPA has documented the fact that in some localized situations, 5-minute SO_2 concentrations greater than 0.6 ppm create health risks in sensitive individuals. The Pan American Health Organization (PAHO) refers to several studies documenting the intensification of asthmatic episodes at concentrations of 0.003–0.1 ppm, and depending on length of exposure, cases of conjunctivitis and other irritations at levels as low as 0.15 ppm.[158]

As discussed above, it is possible that SO_2 near Molymex reaches levels detectable by the population without exceeding the limit of 0.13 ppm as a 24-hour average if short-run peak concentrations are averaged with considerably lower values, for example on the order of 0.001 ppm, or if there are peak concentrations that would cause the applicable limits to be exceeded but that are reported as lower levels due to the analyzers' limited range of 0.5 ppm. Moreover, the calibration errors and/or long periods without data may result in recorded values lower than the real values.[159]

In addition, Coprodemac and several Cumpas residents assert that the Molymex emissions have poisoned cattle owned by ranchers living near the plant due to acid rain and contamination of water sources allegedly caused by Molymex in the area. They maintain that vegetation around Molymex has been "burned" by the emissions. On 5 October

157. In the reported results for particles smaller than 10 microns (PM_{10}) in ambient air in this area, relatively high values are observed, close to the limit applicable to the Molymex plant.

158. "Monitoring of ambient sulfur dioxide and epidemiological risk assessment in Cumpas, Sonora, 2000," Paz-A. Enrique MD MPH DCD and Ruiz, Alfonso DVM PhD (Environmental Health Advisor, Field Office PAHO-WHO, El Paso, Tx.); Álvarez-H. Gerardo MC MSP and Velasco-C. Manuel MC (Department of Epidemiology, Ministry of Public Health, State of Sonora); Mada-V. Gerardo MC MSP (State Public Health Laboratory, State of Sonora); and Navarro-C. René MC MSP (Health Services Branch, Ministry of Public Health, State of Sonora).

159. See sections 5.6.3–5.6.5 of this factual record.

1998, Coprodemac sent a letter to Semarnap and Profepa stating that farmers in Cumpas are reporting harvest losses and that they suspect Molymex's emissions to be the cause.[160]

The principal effect of SO_2 in the environment is the formation of acid rain, which damages forests, crops, houses, and buildings and contributes to the acidification of soils, rivers and lakes. SO_2 is carried over great distances and reacts to form particles that are deposited far from the source. Hence the problems caused do not only affect areas near the source.[161]

According to one Coprodemac member, the harm caused by Molymex's emissions to the health of Cumpas residents and the environment includes the following considerations:

> ...We have dozens of cases of congenital disease. We have had about a 100 percent increase in respiratory disease since Molymex started operation. We have the highest cancer rates and the highest mortality rate in the State of Sonora, the last three are government statistics. We have acute and chronic molybdenosis [in] many Molymex workers. Some of these sick workers tell us that Molymex is systematically firing or asking them to resign. Some have settled out of court reportedly for the equivalent of US $5,000 to $10,000. The ranchers reported that their vegetation is dying, and the farmers that their crops are failing due to acid rain.[162]

Regarding harm to vegetation, they further state that:

> During the month of September of this year [2002], vegetation was sampled in a radius of 1–2 km around the Molymex plant in Cumpas, Sonora. Various species displaying disease symptoms were collected and a subsequent analysis detected the following:
>
> The symptoms observed are sudden withering of the aerial part of the plants with the appearance of dark patches, some total and others partial. The roots appeared healthy both internally and externally. This undoubtedly indicates that the problem is caused by some phytotoxic environmental factor. The species sampled were buffelgrass, amaranth, burrobush (*Hymenoclea* sp.), sorghum, sunflower, and purslane. Other species exhibiting the same symptoms were not analyzed. Along the river, many of the poplars are completely burned.

160. IP-CCD, section D. Agricultural.
161. Profepa note, "Molymex Problems," 1 April 1995, IP-CCD, CDE section.
162. Letter from Antonio Heras, member of Comité Pro Defensa del Medio Ambiente de Cumpas, to CEC Secretariat, 23 December 2001.

> We have experienced this problem year after year since the Molymex plant was established in Cumpas. There is no other plant here emitting SO_2. Dr. Thomas Nash, an acid rain expert from Arizona State University, informed us that some species are more tolerant than others; this is why the native vegetation does not wither uniformly and immediately but rather gradually.
>
> As I commented in my complaint of 20 September of this year, Molymex has used the stack without filters for its nocturnal operation. In view of the withering of the vegetation in this manner and the rise in respiratory diseases in the Municipality of Cumpas, it is imperative that you take immediate action to solve these problems.[163]

In another letter to the CEC Secretariat, they assert as follows:

> The harm to vegetation in the Municipality of Cumpas was confirmed by a well-known professor of phytopathology in Sonora, who declined to sign his report for fear of reprisals from his superior, an intimate friend of the governor. Instead, we went to Phoenix, Arizona, with Dr. Leathers of Dominion Environmental Consultants on the 15th day of this month [October 2002]. Dr. Leathers is an expert in the harmful effects of sulfur dioxide on vegetation. He analyzed various species (sycamore, sorghum, amaranth, buffelgrass, fig, apple, acacia, purslane and others) which I brought him from the vicinity of Cumpas. Dr. Leathers confirmed that the damage observed in these samples is due to sulfur dioxide. He told us that in order to write a report he would have to go to Cumpas for several days at a cost of some $12,000.00, money that we do not have at the moment.[164]

In light of the concerns raised by the community about the effects of Molymex's emissions on the environment and health, in 2000 the Sonora state government arranged for the following studies to be carried out during that year by the Sonora Ministry of Health in coordination with PAHO and the Universidad de Sonora:[165]

- monitoring of ambient sulfur dioxide and epidemiological risk assessment;
- determination of molybdenum in Cumpas soils;
- determination of blood lead levels in preschoolers, schoolchildren, and adults.

163. Letter from Antonio Heras Durán to Director of Environmental Complaints of Profepa, 26 September 2002.
164. Letter from Antonio Heras Durán to CEC Secretariat, 30 October 2002.
165. IP-Mex-GS.

The research report "Monitoring of Ambient Sulfur Dioxide and Epidemiological Risk Assessment in Cumpas, Sonora, 2000" indicates that no SO_2 or PM_{10} levels exceeding the standards were found, nor was the prevalence of health conditions associated with exposure to these substances higher than the state average:[166]

> Ambient air pollution caused by sulfur dioxide (SO_2) is associated with harmful effects on human health; the severity of the harm varies but centers around the respiratory and cardiovascular systems. As of 1996, in the Sonoran town of Cumpas, the increased production by a molybdenum processing company gave rise to citizen complaints of environmental contamination by sulfur dioxide and harm to the health of local residents caused by SO_2 exposure. In order to respond to these complaints, a cross-sectional study was conducted with the object of identifying the level of emissions of environmental contaminants such as SO_2 and PM_{10}, and correlating these emissions with the incidence and prevalence of respiratory, dermatological and allergic signs and symptoms exhibited by the population. To determine the levels of these substances, measurements were made in and around homes with portable monitors, and the results were compared with measurements made by mobile and fixed monitors located in the community and two neighbouring communities. No SO_2 or PM_{10} levels were found to exceed the limits set out in the applicable Mexican Official Standards; nor did we observe a higher prevalence than the state average of health conditions associated with exposure to these substances. Portable "house-to-house" monitoring appears to be a cost-effective method for detecting SO_2 levels above 0.1 ppm and is useful in identifying potential risks of exposure to this pollutant (p. 1).

This report further states that:

> ...As of 1996, the company increased the volume of its industrial process, causing higher pollutant emissions which, according to information provided by the Ministry of the Environment, Natural Resources and Fisheries (Semarnap), greatly exceeded the standards, including those for sulfur dioxide and molybdenum particles. These have been associated with an increase in acute respiratory infections (ARI) in susceptible persons, particularly in young children and the elderly; an exacerbation of coronary diseases and chronic obstructive disease, irritations of the respiratory tract and eyes, and other symptoms of a neurological nature.

166. "Monitoring of ambient sulfur dioxide and epidemiological risk assessment in Cumpas, Sonora, 2000," Paz-A. Enrique MD MPH DCD and Ruiz, Alfonso DVM PhD (Environmental Health Advisor, Field Office PAHO-WHO, El Paso, Tx.); Álvarez-H. Gerardo MC MSP and Velasco-C. Manuel MC (Department of Epidemiology, Ministry of Public Health, State of Sonora); Mada-V. Gerardo MC MSP (State Public Health Laboratory, State of Sonora); and Navarro-C. René MC MSP (Health Services Branch, Ministry of Public Health, State of Sonora).

> In this regard, sulfur dioxide is perhaps one of the most studied pollutant particles [sic: pollutants] in recent decades, and its negative health effects have varying degrees of severity. Among known harmful effects is the triggering of asthmatic episodes at concentrations of 0.003–0.1 parts per million (ppm), where 1 ppm is equal to 2.86 mg per square [sic: cubic] meter. At a concentration of 0.15–2.0 ppm, and depending on exposure time, from 1 hour up to 5 days, it causes conjunctivitis, tearing of the eyes, bronchial hyperactivity, asthmatic episodes, acute and chronic bronchitis, and dermatitis, and it has been linked to lung cancer, although this latter link has not been proven; at 2-hour average concentrations of 5.0–15.0 ppm, it can cause mucosal hemorrhage, cardiopulmonary disturbance, and acute pulmonary edema (p. 2).

The report recommends additional research into the relationship between Molymex's production volume and ambient air SO_2 levels, the causes of the health conditions reported by the population, and other aspects:

> To supplement this analysis in future research, the quantity of raw material entering into the plant's process, as well as the quantities of final product obtained in a given period of time, should be correlated with the ambient air SO_2 levels identified. This could not be done in the current study because it was not possible that the company provide us with the necessary information.
>
> Furthermore, the symptoms mentioned by the population interviewed were highly unspecific and could be caused by multiple factors or causal agents such as dust, smoke, pollen, proximity of animals, or infectious processes, making it difficult to establish conclusive causal associations. For this reason, it is advisable to conduct new clinical, epidemiological, and potential impact follow-up studies (p. 10).

The PAHO study measuring ambient air SO_2 levels in the communities of Teonadepa, Cumpas and La Colonia between 22 June and 28 July 2000 concluded that "with the method used it was impossible to detect ambient sulfur dioxide levels exceeding the standard [NOM-022]" in the towns investigated. However, the monitoring conducted in this study was not done continuously for 24-hour periods, nor was it done simultaneously in the three towns. The results were not correlated with plant activity or production levels, since the plant did not provide the necessary information. Therefore, the PAHO study results cannot be considered sufficient to establish conclusions about the validation of the perimeter monitors operated by Molymex nor the quality of the data obtained with this equipment. In particular, it is impossible to compare the results of this study with the values specified in NOM-022

since these values refer to 24-hour averages while the PAHO study obtained 833 samples on 10 visits to 50 houses participating in the study, resulting in an average of about 17 point values for each of the houses.[167]

The study on molybdenum in Cumpas soils conducted by the Universidad de Sonora concluded the following:[168]

> ...The molybdenum concentrations in the soil samples taken in the vicinity of the molybdenite concentrate roaster owned by Molymex S.A. de C.V. near the town of Cumpas, Sonora do not exceed the standard (>5 ppm) established for non-mineralized molybdenum areas; in addition, the anomalous values detected correspond to pollution typical of urban activities (lubricants, oils, automotive emissions) (p. 9).

Meanwhile, the research on lead levels in children and adults in the Municipality of Cumpas did not report health effects:[169]

> An industrial facility processing molybdenum sulfides into molybdenum oxides has been operating in the town of Cumpas since 1995. It uses roasting processes that generate molybdenum trioxide and sulfur dioxide particles as well as combustion gases and other substances. Although the company made changes to its infrastructure with a view to limiting its pollutant emissions, there were complaints from the community calling for the closing or relocation of the company and claiming that it was affecting the health of the town's residents and others living in neighbouring communities. One of these complaints alleged the existence of harm to health caused by lead emissions into the environment as a by-product of the molybdenum smelting process. According to this complaint, some schoolchildren exhibited high lead levels in blood samples processed by a private laboratory in Agua Prieta, Sonora. In order to respond to these assertions and to investigate the possible health effects of lead-containing pollutants on Cumpas residents, a cross-sectional study was conducted of

167. "Technical opinion on SO_2 Emissions, Submission SEM-00-005 (Molymex II)," 31 January 2003, technical information produced for the CEC Secretariat by Acosta y Asociados.

168. "Determination of molybdenum contamination in soils in the vicinity of Cumpas, Sonora," Division of Engineering, Universidad de Sonora, 15 October 2000. Project managers: M.C. Sergio Alan Moreno Zazueta and M.C. Guillermo Tiburcio Munive.

169. "Determination of blood lead levels in preschoolers, schoolchildren, and adults in the Municipality of Cumpas, Sonora, 2000," produced by: Álvarez-H. Gerardo MC MSP and Velasco-C. Manuel (Epidemiology Department, Ministry of Public Health, State of Sonora), Navarro-C. René MC MSO (Health Services Branch, Ministry of Public Health, State of Sonora), Ortega, Luis MD MPH (Epidemiologist, Field Office PAHO-WHO, El Paso, Tx.), Gameros-M. Mercedes MC (Arizona-Sonora Binational Health Office), Paz-A. Enrique MD MPH DCD (Environmental Health Advisor, Field Office PAHO-WHO, El Paso, Tx.), Mada-V. Gerardo MC MSP (State Public Health Laboratory, Ministry of Public Health, State of Sonora).

> 5 towns in the Municipality of Cumpas with the objective of determining capillary blood lead levels in preschoolers and schoolchildren as well as venous blood lead levels in adult employees of the company. The blood lead concentration averaged less than 10 µg/dl and reached a maximum of 16 µg/dl. We did not find a relationship between blood lead levels in children and adults in the five Cumpas towns and any possible harm to health (p. 1).

The Sonora state government also provided the Secretariat with a summary of the morbidity statistics and main causes of mortality for the Municipality of Cumpas for 2000. However, the statistics were not accompanied by other information that enables correlating them with the serious health problems in the Municipality of Cumpas allegedly caused by Molymex emissions. This type of analysis was not comprised within the scope of the information developed by the Secretariat through independent experts for this factual record, nor did the Secretariat receive additional information to clarify whether Molymex's emissions had any effect on mortality and morbidity levels in Cumpas.

Elsewhere, in February 2000, DataCenter[170] produced a report based on official documents, information available online, and interviews with Cumpas residents, which concluded as follows:[171]

> The DataCenter finds that the Molymex plant is contributing to a deterioration [sic] in the health and livelihood of the more than 9,000 Cumpas townspeople. These people are exposed daily to dangerous toxic emissions derived from molybdenum processing. The plant's emissions are damaging people's health (respiratory ailments, lead poisoning, etc.), and local crop production.
>
> Both the company and the state government have been very reluctant to listen to the Cumpas Committee for the Defense of the Environment (Coprodemac), which has presented reliable evidence and testimony on how the people of Cumpas are suffering.

In April 2001, the National Environmental Research and Training Centre (*Centro Nacional de Investigación y Capacitación Ambiental*) conducted sampling for Semarnat "to attempt to identify possible impacts on the ecosystem and health of the residents of Cumpas caused by the

170. DataCenter is an organization providing strategic information, analysis and research training to social justice organizations <http://www.datacenter.org/about/about.htm>.

171. *Pollution and International Capital in the Sonora Desert: the Molymex Plant at Cumpas*, IP-CCD, "United States Civic Organizations" section.

operation of Molymex." Metals in water, soil, plants, and citrus fruit, as well as breathable particles (PM_{10}) were analyzed. The report states as follows:

> Metals in water. The concentration of metals in the water samples analyzed was found to be below the detection limits, except for molybdenum in samples 4 and 5 (river water from the southern part of the village and well water at the Molymex plant) with concentrations of 0.010 and 0.034 mg/l, respectively.
>
> Metals in soil. According to the criteria established by the Office of the Federal Attorney for Environmental Protection for inorganic toxics in regard to restoration of contaminated soils...with the exception of an agricultural sample (river bank in south agricultural zone) containing total chromium and cadmium concentrations exceeding the specifications, the remaining samples were within the limits.
>
> The presence of vanadium, titanium, molybdenum and manganese is also reported. According to [values tabulated by] the Canadian Council of Ministers of the Environment, 1991, molybdenum exceeds allowable limits in the agricultural soil samples and inside the Molymex plant.
>
> Metals in plants and citrus fruits. For the sample of plants and citrus fruits, the presence of copper, manganese, and molybdenum was found; in the citrus fruits alone, nickel, lead and titanium were found. Unfortunately, no data were found in the information sources consulted on relationship between these levels and damage to plants; therefore, it was impossible to establish at this time whether these values may be affecting the ecosystem.
>
> Breathable particles (PM_{10}). The PM_{10} breathable particle limit for the protection of public health established in Mexican regulations is 150 $\mu g/m^3$, and therefore the results show that at the sites sampled in Cumpas, Sonora, the PM_{10} concentration is less than one-fourth of the protection limit.
>
> Lead, also regulated in our country, has a protection limit of 10 $\mu g/m^3$ as a quarterly average and, although it is not totally comparable since our sampling took place over a 24-hour period, very low levels of this element were found. Other elements such as cadmium, cobalt, chromium, copper, manganese, nickel, vanadium and titanium were found at low levels.
>
> With respect to molybdenum levels, with the exception of one sample, concentrations around 1 $\mu g/m^3$ were found at all monitoring stations. There are no Mexican regulations for this element in the atmosphere but there do exist international guideline values for fixed-source emissions

> which, in the Netherlands, the United Kingdom and Austria, fall in the range of 5–15 mg/m^3 as exposure indicators.[172]

The Sonora State Ministry of Public Health issued a report on 17 December 2002 corresponding to the assessment of environmental and occupational risks implemented by Molymex in the context of NOM-048-SSA1-1993.[173] The report, based on which the authority determined that the company represents a low risk, states as follows:

> That the implementation of NOM-048-SSA1-1993 by the company MOLYMEX S.A. de C.V. produced internally consistent information, such that with the available evidence based on measurements and monitoring; pollutant dispersion models for SO_2 before and after the operation of the sulfuric acid plant; the monthly reports (containing 24-hour concentrations for each day of the month) for the SO_2, TSP and PM_{10} monitoring stations; measurements and analytical tests for fixed-source (plant stack) emissions; the various pollution control equipment and devices currently in operation, including: three devices a series for control of particulate matter (cyclone collector for coarse dust; one "sonic" and two electrostatic precipitators for fine dust); a gas scrubbing plant that has the capacity to reduce solid and liquid particles significantly; and a sulfuric acid plant that achieves control of ambient air SO_2 emissions on the order of 98 percent. As well as technical reports and final conclusions yielded by the various studies conducted to investigate harm to public health, some of them carried out by the Ministry of Public Health of the State of Sonora through the Epidemiology Division of the Health Services Branch (in collaboration with the Pan American Health Organization [PAHO], the Children's Hospital of the State of Sonora, and the State Blood Transfusion Centre); likewise, the studies to investigate the presence of possible contaminants in the soil of Cumpas, Sonora and vicinity by researchers from the masters program in metallurgy of the Universidad de Sonora; and, in general, from the analysis of all the information generated, the environmental monitoring, the monitoring of health effects on the population and individuals, the research into chemical, physical, and biological agents assessed during the period from January 2000 to December 2001 in order to determine the current type of risk represented by the company Molymex S.A. de C.V., it may be determined that at the time this environmental and occupational health risk assessment was completed, in our

172. "Report of results of sampling conducted at Cumpas, Sonora" contained in the undated note from Víctor Javier Gutiérrez Avedoy to Exequiel Ezcurra, sent by the Director of the Sonora Federal Office of Semarnat to Francisco Pavlovich Robles of Alianza Cívica in response to the latter's request for environmental information under LGEEPA Article 156 bis 3 by means of *oficio* No. D-0020/2001 of 17 May 2001.

173. Mexican Official Standard NOM-048-SSA1-1993, establishing the standard method for assessment of risks to health as a consequence of environmental agents. Published in the DOF on 6 January 1996.

opinion the company Molymex S.A. de C.V. represents a LOW RISK. [sic][174]

5.8 Timeline

1994	
February 11	The Sonora state office of Sedesol issued an OP to Molymex (DS-139-4-SPA-126, first OP).
February 25	Molymex and the Sonora state office of Sedesol held a clarification meeting on the first OP.
March 3	Molymex requested amendments to the first OP based on the clarification meeting of 25 February.
May 27	The Sonora state office of Sedesol approved modifications to the first OP (DS-139-4-SPA-1449, first modification to first OP).
June 30	Molymet S.A. acquired the Molymex roaster from Grupo Frisco.
October 29	Molymex set up an air quality monitoring network and began measuring ambient air quality in Cumpas, Teonadepa and Ojo de Agua.
1995	
January 5	The Molymex furnace resumed operations.
February 8	Profepa conducted an inspection visit to Molymex in response to a complaint filed February 7 by Cumpas residents.
April 1	Sonora state office B39 of Profepa informed the head of Profepa and the Deputy Attorney for Regulatory Enforcement of the contamination in Cumpas and recommended the temporary closing of Molymex and various amendments to the plant's OP.
April 3	Profepa ordered the Molymex roaster to be temporarily and partially closed on the grounds that it had exceeded the raw material loads and particle emission limits.

174. *Oficio* SSP-SSS-DGRFS-02-2458, from the Director of Health Regulation and Promotion, Sonora State Ministry of Health, to the General Manager of Molymex, 17 December 2002.

April 7	Profepa lifted the temporary partial closing order.
1996	
April 3	The Sonora state office of Semarnap amended the terms of the OP as regards the solid and liquid particle and SO_2 emission limits and extended the compliance deadline for the SO_2 limit from 1 May 2005, to 1 October 1997 (DS-SMA-UNE-LF-500, second amendment to first OP).
May 23	Molymex and Coprodemac signed a set of agreements and commitments relating to control and monitoring of the plant's emissions (reducing load by 30 percent, raising the stack, installing emission control equipment, relocating monitoring stations and providing a mobile station) as well as support for the community by Molymex (providing financing for improvement projects).
May 30	The Profepa state office in Sonora conducted an inspection visit to Molymex, finding that the company lacked an official decision on environmental impact.
May 30	The Sonora state office of Semarnap issued a new OP containing the commitments undertaken by Molymex on May 23, restricting the production volume and extending the compliance deadline for the sulfur dioxide limit from 1 October 1997, to 31 December 1997 (DS-SMA-UNE-LF-282, second OP).
August 16	Molymex filed an appeal against Profepa's determination that the company had violated the LGEEPA and its environmental impact regulation by failing to obtain an environmental impact authorization prior to commencing its operations.
September	Molymex purchased a mobile air quality monitoring station and trained Coprodemac members to operate it.
December 3	The Sonora state office of Semarnap clarified to Molymex that if the company could not comply with the applicable limits as per the second OP by the deadline of 31 December 1997, "it would have to present a technical and economic study making proposals and providing the relevant justifications in order for the Ministry to determine the appropriate course of action."

1997	
April 10	Semarnap authorized the testing period for the 82–metre stack and permitted a gradual increase in the furnace's load from 21.4 ton/day to 30.6 ton/day, from 11 April to 9 May 1997.
May 16	The Employment Development Association of Cumpas sent Semarnap a letter supporting the Sonora state office of Semarnap's proposal to award Molymex the "Environmental Merit Prize" for 1997.
May 23	Coprodemac sent a letter to Semarnap stating that Molymex had complied with all agreements and commitments entered into on 23 May 1996 and that it had made notable contributions to the sustainable development of the community.
June 9	Molymex started operating a gas scrubbing plant and a liquor treatment plant.
June 17	The Sonora state office of Semarnap amended the terms of the second OP, authorizing Molymex to operate at maximum capacity and extending the deadline for compliance with the SO_2 limit of 650 ppmv by 1,640 days starting 31 December 1997 (DFS-D-0986-97, first amendment to second OP).
August 26	The Environmental Health Branch (*Dirección General de Salud Ambiental*) of the Ministry of Health (*Secretaría de Salud*) issued a sanitary permit to Molymex.
September 8	Coprodemac filed a citizen complaint asserting that Molymex was inadequately disposing of its hazardous waste (liquor treatment sludge).
December 4	The National Water Commission (*Comisión Nacional del Agua*) in Sonora granted Molymex a concession to use national waters.
1998	
March-October	Coprodemac sent letters to various municipal, state and federal authorities, distributed leaflets, and held meetings and picket lines to denounce the contamination allegedly caused by Molymex and to demand that it be relocated.

April 6	Coprodemac filed a document with the Attorney General of the Republic (*Procurador General de la República*) stating its disagreement with a proceeding allegedly brought by the latter against its president, Armando Gallego Quintero, further to a criminal complaint filed against him by Molymex in connection with an alleged assault against a Molymex employee and defamation of the company. Molymex subsequently withdrew the charges.
April 22–24	The Molymex gas scrubbing plant was out of operation due to a power outage.
April 27	Coprodemac blocked the entrance to the Molymex plant with a picket line in which it recorded the participation of 870 persons.
April 30	Coprodemac filed a document with the Mayor of Cumpas denouncing the failure by Molymex to comply with the LGEEPA, the terms of its operating permit, and the agreements of 23 May 1996, calling for Molymex to be closed and relocated to "an arid, sparsely populated area" of the state and requesting that the Governor of Sonora give a personal hearing to the concerns of the Coprodemac members.
June 10	The Sonora state office of Profepa conducted an inspection visit in relation to final disposal of the liquor treatment sludge and found none on the site of the plant nor in the municipal dump.
July–October	Profepa conducted an environmental audit of Molymex.
September 23	Coprodemac picketed in front of Molymex, blocking the entrance to the plant. The Governor of Sonora was present to hear the demonstrators' concerns.
October 4	Coprodemac sent a letter to the President of INE requesting that authorization to expand the Molymex plant be denied.
October 5	The Municipality of Cumpas issued a land use permit to Molymex.
October 9	Molymex filed an EIS and risk study for the "Molymex Expansion Project" with INE.

1999	
January 29	INE gave authorization to Molymex to expand its facility.
May 20	The Sonora State Health Services Branch (*Dirección General de Servicios de Salud*) issued a technical report on epidemiological surveillance of respiratory diseases in the Municipality of Cumpas and found no relationship between the pollutants analyzed and health problems.
June 25	Molymex and Profepa signed an agreement indicating the actions that Molymex would carry out further to its environmental audit.
November 22	Profepa determined that the complaints filed by Coprodemac starting in September 1997 in regard to Molymex's industrial waste were unfounded because the waste consists of "liquor treatment sludge" and not hazardous waste; managing it is not a hazardous activity; and it is not mandatory to return it to the country from which the corresponding production inputs originated.
December 9	The Sonora State Congress determined that the request for final closing of Molymex filed by Coprodemac and other organizations on 8 September 1999 with the Congress's Environment and Ecology Commission and its Health and Public Assistance Commission were ungrounded.
December 18	Coprodemac and other civic organizations in Hermosillo held a protest allegedly attended by 300 persons in front of the Molymex plant. Four of the organizers were arrested but they were not prosecuted.
December 1999–July 14, 2000	Coprodemac and the civic organizations supporting it held ongoing picket lines against Molymex in Hermosillo and Cumpas.
2000	
April 6	*Academia Sonorense de Derechos Humanos* and Domingo Gutiérrez Mendívil filed with the CEC the submission SEM-00-005 concerning Molymex, in accordance with NAAEC Article 14.

November 29	The Sonora state office of Semarnap issued an update of the Molymex OP, ordering it to comply with the SO_2 limits as of 31 December 2001 (DS-SMA-UNE-756, third OP). This OP is still in effect.

2001

January 18	Mexico filed a response to submission SEM-00-005 concerning Molymex, in accordance with NAAEC Article 14(3).
March 8	The Profepa State Office in Sonora conducted an inspection visit to Molymex in response to a citizen complaint in order to verify compliance with air emission provisions. It found no irregularities.
December 10	Molymex started operating a sulfuric acid plant in order to reduce its SO_2 emissions.
December 20	The CEC Secretariat recommended to Council that a factual record be developed in regard to submission SEM-00-005 concerning Molymex.
December 31	Deadline for compliance by Molymex with the 650 ppmv SO_2 limit for its stack emissions.

2002

March 18	The Association of Non-Governmental Organizations of Sonora (*Asociación de Organismos no Gubernamentales de Sonora*) filed a complaint of acts relating to the operation of Molymex in Cumpas that may constitute treasonable offenses against the country. It named the President of Mexico, the Minister of the Environment and Natural Resources, the Chairman of the Board of Directors of Molymet, and the Assistant General Manager (*Subdirector General*) of Molymex.
April 4	Molymex was awarded ISO 14001 certification for its environmental management system.
May 17	The CEC Council instructed the Secretariat to develop a factual record in regard to submission SEM-00-005 concerning Molymex.
June 5	The Sonora state government and Semarnat recognized Molymex for its environmental compliance efforts.

July 10	Profepa issued Molymex a Clean Industry Certificate.
October 17	The Sonora state office of Profepa conducted an inspection visit to Molymex to verify compliance with the conditions of the environmental impact authorization of 29 January 1999. It found no irregularities.

6. Closing Note

Factual records provide information on alleged failures to effectively enforce the environmental law in North America that may support the Submitters, the Parties to the NAAEC, and other interested members of the public in taking any action they consider appropriate in relation to the matters addressed. In accordance with Council Resolution 02-03, this factual record provides information on whether Mexico is failing to effectively enforce, with respect to Molymex, various provisions of its environmental law in relation to environmental impact, the definition of zones in which polluting facilities may be sited, and ambient air SO_2 concentrations.

Molymex S.A. de C.V. was incorporated in May 1979 as part of Grupo Frisco and until 1991 operated a molybdenum roaster and other facilities in Cumpas. On 30 June 1994, Grupo Frisco sold its Molymex shares and the molybdenum roaster to the Chilean consortium Molymet S.A. On 5 January 1995 Molymex resumed operations under an operating permit issued by Sedesol on 11 February 1994. The authorized production for the plant increased from 7,500 tons annually in 1994 to 50,400 tons annually as of the expansion project authorized in January 1999. As of the resumption of operations by Molymex in 1994, several Cumpas and Hermosillo residents and civic organizations accused the company of violating environmental law and causing contamination that allegedly affected the health of the residents of the Municipality of Cumpas.

Molymex has obtained various certificates and awards relating to environmental protection, including a Clean Industry Certificate from Profepa and ISO 14001 certification for its environmental management system, both in 2002. The company calculates that 55 percent of the US $40 million it invested in the Cumpas plant since 1994 was devoted to environmental protection infrastructure.

The submission asserts that Mexican environmental authorities are failing to effectively enforce the environmental impact law in the case of Molymex by allowing it to operate without an environmental impact authorization. The environmental authority asserts that the EIA procedure was not applicable because the obligation to perform an EIA

was incorporated into Mexican law in 1982, it is of a purely preventive nature, and its retroactive enforcement would be unconstitutional. Mexico further states that it has effectively enforced the environmental impact law, since Molymex's expansion project of 1998 underwent an EIA and an authorization was issued for it. As detailed in this factual record, the environmental authority's arguments for not requiring Molymex to obtain an environmental impact authorization involve legal issues not yet resolved by the Mexican courts.

Another of the submission's allegations is that Mexico is failing to enforce LGEEPA Article 112 by failing to define the zone in which polluting industrial facilities may be sited in Cumpas, Sonora, applying criteria for the prevention of environmental contamination as prescribed by that article. The Municipality of Cumpas issued a land use permit to Molymex on 5 October 1998. According to the municipality, that permit and the furnace marked on the map included in the Cumpas Municipal Development Plan 1998–2000 constitute the definition of the zone in which polluting facilities may be sited as required by LGEEPA Article 112.

The third matter to which this factual record refers is the effective enforcement of NOM-022, which establishes the ambient air SO_2 standard for the protection of public health. The submission asserts that in the first amendment to its OP, Molymex was authorized to exceed that standard. Mexico asserts that the standard set out in NOM-022 and the stack emission limits established in the OP are separate issues, and that Molymex did not exceed the applicable standard.

As of 31 December 2001, the 6-hour average limit for SO_2 stack emissions is 650 ppmv. Prior to that date, the Molymex roasting process operated with authorization under various OPs and their amendments but with no enforceable limit for SO_2 emissions. As to concentration of SO_2 as air pollutant for the protection of health, NOM-022 provides that these ambient SO_2 concentrations shall not exceed a maximum 24-hour of 0.13 ppm more than once a year and an annual arithmetic mean of 0.03 ppm. This NOM has been in force since the Molymex began operations on 5 January 1995. Moreover, since 17 June 1997, Molymex has been subject to the maximum concentration levels set out in its contingency plan: alert phase, 1-hour average of 0.600 ppm SO_2; alarm phase, 5-hour average of 0.400 ppm; and emergency phase, 24-hour average of 0.130 ppm. The independent experts consulted by the Secretariat concluded that it is possible that ambient air SO_2 concentration exceeded the NOM-022 standard even though the concentration at the stack did not exceed the 650 ppmv limit, because this latter value is a 6-hour average.

Molymex measures sulfur dioxide in the roaster's stack emissions with a continuous monitor that operates since early August 2001. The graphs of averages provided to the Secretariat show levels below the limits. As regards ambient concentrations, Molymex has been operating a continuous monitoring system for ambient SO_2 in the vicinity of the plant since October 1994. Mexico asserts that at the monitoring stations installed by Molymex from 1994 to 2000, there was no day in which the SO_2 limit of 0.13 ppm as a 24-hour average was exceeded, and that during this same period the annual arithmetic mean of 0.03 ppm SO_2 set by NOM-022 was not exceeded. In the opinion of the independent experts consulted by the Secretariat in this regard, it cannot be stated with certainty from the data contained in the monthly reports of continuous perimeter monitoring of SO_2 in the vicinity of the Molymex plant that the NOM-022 standards were not exceeded. The information does not support this assertion primarily because the data was collected with detectors whose detection capacity is insufficient (0–0.500 ppm, recording greater concentrations as being equal to 0.500 ppm) and because there are blank records and negative data in the reports.

SO_2 may cause respiratory diseases, particularly in children, the elderly, and asthmatics, and may worsen pulmonary and heart problems. High SO_2 concentrations, even for very short periods, can be particularly problematic for asthma sufferers. Ambient levels around 1 ppm for periods as short as 10 minutes may affect healthy individuals engaging in vigorous outdoor activity. The principal effect of SO_2 in the environment is the formation of acid rain, which causes damage to forests, crops, houses, and buildings and contributes to the acidification of soils, rivers and lakes. Coprodemac and several Cumpas residents assert that Molymex has caused harm to the health of persons and animals, and to the environment in the vicinity of the plant. The information gathered for this factual record did not enable the Secretariat to confirm the alleged negative health and environmental effects, although all studies conducted in this context recommended further research and continuous monitoring.

APPENDIX 1

Council Resolution 02-03: Instruction to the Secretariat of the Commission for Environmental Cooperation (CEC) regarding the assertion that Mexico is failing to effectively enforce certain environmental laws regarding the operation of the Molybdenum Trioxide production facility by Molymex S.A. de C.V., located in the municipality of Cumpas in the Mexican state of Sonora, Mexico (SEM-00-005)

17 May 2002

COUNCIL RESOLUTION 02-03

Instruction to the Secretariat of the Commission for Environmental Cooperation regarding the assertion that Mexico is failing to effectively enforce certain environmental laws regarding the operation of the Molybdenum Trioxide production facility by Molymex S.A. de C.V., located in the municipality of Cumpas in the Mexican state of Sonora, Mexico.

THE COUNCIL:

SUPPORTIVE of the process provided for in Articles 14 and 15 of the *North American Agreement on Environmental Cooperation* (NAAEC) regarding submissions on enforcement matters and the preparation of factual records;

CONSIDERING the submission filed on the above-mentioned matter by Academia Sonorense de Derechos Humanos, A.C. and Domingo Gutiérrez Mendivil, and the response provided by the Government of the United Mexican States on January 18, 2001; and

HAVING REVIEWED the notification by the Secretariat of December 20, 2001, that the development of a factual record is warranted in relation to certain assertions included in the submission (SEM-00-005);

HEREBY UNANIMOUSLY DECIDES:

TO INSTRUCT the Secretariat to prepare a factual record in accordance with Article 15 of the NAAEC and the *Guidelines for Submissions on Enforcement Matters under Articles 14 and 15 of the North American Agreement on Environmental Cooperation* for the assertions set forth in Submission SEM-00-005 that Mexico is failing to effectively enforce Articles 28 paragraph III, 29 paragraphs IV and VI, 32 and 112 of the General Law on Ecological Balance and Protection (*Ley General del Equilibrio Ecológico y la Protección al Ambiente*–LGEEPA); and the Mexican Official Standard NOM-022-SSA1/1993 with respect to operation of the Molybdenum Trioxide production facility by Molymex S.A. de C.V., located in the municipality of Cumpas in the Mexican state of Sonora, Mexico;

TO DIRECT the Secretariat to provide the Parties with its overall work plan for gathering the relevant facts and to provide the Parties with the opportunity to comment on that plan; and

TO DIRECT the Secretariat to consider, in developing the factual record, whether the Party concerned is "failing to effectively enforce its environmental law" since the entry into force of the NAAEC on January 1, 1994. In considering such an alleged failure to effectively enforce, relevant facts that existed prior to January 1, 1994, may be included in the factual record.

APPROVED BY THE COUNCIL.

APPENDIX 2

Overall Plan to Develop a Factual Record with Regard to Submission SEM-00-005

Secretariat of the Commission for Environmental Cooperation

Overall Plan to Develop a Factual Record

Submission I.D.:	**SEM-00-005 (Molymex II)**
Submitters:	Academia Sonorense de Derechos Humanos, A.C. Domingo Gutiérrez Mendívil
Party:	Estados Unidos Mexicanos
Date of this plan:	28 May 2002

Background

On 6 April 2000, the Academia Sonorense de Derechos Humanos, A.C., and Domingo Gutiérrez Mendívil (the "Submitters") filed a submission with the Secretariat of the Commission for Environmental Cooperation (CEC) in accordance with Article 14 of the *North American Agreement on Environmental Cooperation* (NAAEC). The submission asserts that Mexico is failing to effectively enforce its environmental law in relation to the operation of a molybdenum plant by the company Molymex, S.A. de C.V. ("Molymex"), located in the municipality of Cumpas, Sonora, Mexico.

On 17 May 2002, the Council decided unanimously to instruct the Secretariat to develop a factual record, in accordance with Article 15 of the NAAEC and the *Guidelines for Submissions on Enforcement Matters under Articles 14 and 15 of the NAAEC (Guidelines)*, with respect to the assertions set forth in Submission SEM-00-005, that Mexico is failing to effectively enforce Articles 28 paragraph III, 29 paragraphs IV and VI, 32 and 112 of the General Law of Ecological Balance and Environmental Protection (*Ley General del Equilibrio Ecológico y la Protección al Ambiente*–LGEEPA),[1] governing environmental impact and the definition of zones in which polluting facilities may be sited, and Mexican Official Standard

1. The transcriptions appearing in the submission correspond to the text of the LGEEPA in force prior to the reform published in the *Official Gazette of the Federation* on 13 December 1996. This, however, does not substantially affect the force of the Submitter's arguments, due both to the nature of the arguments and also to the fact that the previous Articles 28, 29 and 32 are incorporated into the current LGEEPA Articles 29 and 30. See also the SEM-00-005 (Molymex II) Article 15(1) notification (20 December 2001), p. 7.

NOM-022-SSA1/1993,[2] regarding the concentration of SO_2 in ambient air, with respect to the operation of the molybdenum plant by the company Molymex, S.A. de C.V., located in the municipality of Cumpas, Sonora, Mexico. The Council directed the Secretariat, in developing the factual record, to consider whether the Party concerned "is failing to effectively enforce its environmental law" since the entry into force of the NAAEC on 1 January 1994. In considering such alleged failure, relevant facts existing prior to 1 January 1994 may be included in the factual record.

Under Article 15(4) of the NAAEC, in developing a factual record, "the Secretariat shall consider any information furnished by a Party and may consider any relevant technical, scientific or other information: (a) that is publicly available; (b) submitted by interested nongovernmental organizations or persons; (c) submitted by the Joint Public Advisory Committee; or (d) developed by the Secretariat or by independent experts."

Overall Scope of the Fact Finding

The submission asserts that Mexico is failing to effectively enforce its environmental law in relation to Molymex, in the municipality of Cumpas, Sonora. The submission asserts the alleged failure to effectively enforce Articles 28 paragraph III, 29 paragraphs IV and VI, 32 and 112 of the LGEEPA, governing the assessment of the environmental impact of Molymex's resumed activities in 1994. The Submitters also assert that Molymex is located in an improper zone and that Article 112 paragraph II of the LGEEPA, establishing the municipal authority's responsibility to define the zones where polluting facilities may be sited, has not been effectively enforced. Lastly, the Submitters assert the alleged failure to effectively enforce NOM-022-SSA1/1993, establishing the maximum concentration of SO_2 in ambient air as a human health protection measure.

To prepare the factual record, the Secretariat will gather and develop information relevant to the facts concerning:

i) the alleged violations by Molymex of Articles 28 paragraph III, 29 paragraphs IV and VI and 32 of the LGEEPA and of NOM- 022- SSA1/1993; and the alleged failure by the Municipality of Cumpas to enforce Article 112 of the LGEEPA;

2. *NOM-022-SSA1/1993 – Environmental Health. Criterion for the assessment of ambient air quality with respect to sulfur dioxide (SO_2). Standard value for sulfur dioxide (SO_2) concentration in ambient air, as a public health protection measure.* Published in the *Official Gazette of the Federation* on 23 December 1994.

ii) Mexico's enforcement of these provisions, in the case of Molymex; and

iii) the effectiveness of Mexico's enforcement of these provisions, in the case of Molymex.

Overall Plan

Consistent with Council Resolution 02-03, execution of the overall work plan will begin no sooner than 12 June 2002. All other dates are best estimates. The overall plan is as follows:

- Through public notice or direct invitation, the Secretariat will invite the Submitters, JPAC, members of the community of Cumpas, Sonora, the local, state and federal authorities and the general public, to submit relevant information within the scope of the fact-finding described above. The Secretariat will explain the scope of the fact-finding, providing sufficient information to enable interested persons or nongovernmental organizations or JPAC to provide relevant information to the Secretariat (section 15.2 of the *Guidelines*) **[mid June 2002]**.

- The Secretariat will request information relevant to the factual record from the appropriate federal, state and municipal Mexican authorities, and will consider any information provided by a Party (Articles 15(4) and 21(1)(a) of the NAAEC) **[late June 2002]**. Information will be requested relevant to the facts regarding:

  i) the alleged violations by Molymex of Articles 28 paragraph III, 29 paragraphs IV and VI and 32 of the LGEEPA and of NOM-022-SSA1/1993, and the alleged failure by the Municipality of Cumpas to enforce Article 112 of the LGEEPA;

  ii) Mexico's enforcement of these provisions, in the case of Molymex; and

  iii) the effectiveness of Mexico's enforcement of these provisions, in the case of Molymex.

- The Secretariat will gather the relevant technical, scientific or other information that is publicly available, including from existing databases, information centers, libraries, research centers and academic institutions **[July through October 2002]**.

- As appropriate, the Secretariat will develop, through independent experts, technical, scientific or other information relevant to the factual record **[July through October 2002]**.

- As appropriate, the Secretariat will gather relevant technical, scientific or other information for the development of the factual record, from interested persons or nongovernmental organizations, JPAC or independent experts **[July through October 2002]**.

- In accordance with Article 15(4), the Secretariat will prepare the draft factual record based on the information gathered and developed **[November through December 2002]**.

- The Secretariat will submit a draft factual record to Council. Any Party may provide comments on the accuracy of the draft within 45 days thereafter, in accordance with Article 15(5) **[January 2003]**.

- As provided by Article 15(6), the Secretariat will incorporate, as appropriate, any such comments in the final factual record and submit it to Council **[March 2003]**.

- The Council may, by a two-thirds vote, make the final factual record publicly available, normally within 60 days following its submission, in accordance with Article 15(7).

Additional Information

The submission, Mexico's response, the Secretariat determinations, the Council Resolution, and a summary thereof are available in the Registry on Citizen Submissions in the CEC home page at <www.cec.org> or upon request to the Secretariat at the following address:

CEC Secretariat
Submissions on Enforcement
Matters Unit (SEM Unit)
393, rue St-Jacques Ouest,
bureau 200
Montreal QC H2Y 1N9
Canadá

CCA / Mexico Liaison Office:
Atención: Unidad sobre Peticiones
Ciudadanas (UPC)
Progreso núm. 3,
Viveros de Coyoacán
México, D.F. 04110
México

APPENDIX 3

Process for Gathering Information for the Development of the Factual Record on Submission SEM-00-005 (Examples of relevant information)

Secretariat of the Commission for Environmental Cooperation

REQUEST FOR INFORMATION
for Development of the Factual Record
Submission SEM-00-005 (Molymex II)
20 June 2002

I. The factual record process

The Commission for Environmental Cooperation (CEC) of North America is an international organization created under the *North American Agreement on Environmental Cooperation* (NAAEC) by Canada, Mexico and the United States. The CEC operates through three organs: a Council, made up of the highest-level environmental official in each member country; a Joint Public Advisory Committee (JPAC), composed of five citizens from each country; and a Secretariat located in Montreal.

Article 14 of the NAAEC allows residents in North America to inform the Secretariat, in a submission, that any member country (hereinafter, a Party) is failing to effectively enforce its environmental law. This initiates a process of review of the submission, after which the Council may instruct the Secretariat to prepare a factual record in connection with the submission. A factual record seeks to provide all relevant information on the effectiveness with which the Party has enforced its environmental law with respect to the matter raised in the submission.

Under Articles 15(4) and 21(1)(a) of the NAAEC, in developing a factual record, the Secretariat shall consider any information furnished by a Party, and may ask a Party to provide additional information. The Secretariat also may consider any information that is publicly available; provided by the JPAC, the Submitters or other interested persons or nongovernmental organizations; or developed by the Secretariat or independent experts.

On 17 May 2002, the Council decided unanimously to instruct the Secretariat to develop a factual record, in accordance with Article 15 of the NAAEC and the *Guidelines for Submissions on Enforcement Matters under Articles 14 and 15 of the NAAEC (Guidelines)*, regarding the assertions made in submission SEM-00-005 that Mexico is failing to effectively enforce Articles 28 paragraph III, 29 paragraphs IV and V, 32, and

112 of the General Law on Ecological Balance and Environmental Protection (*Ley General del Equilibrio Ecológico y la Protección al Ambiente*–LGEEPA),[1] with regard to environmental impact and the definition of zones in which polluting facilities may be sited, and Mexican Official Standard (*Norma Oficial Mexicana*–NOM) NOM-022-SSA1/1993[2] with regard to SO_2 concentration in ambient air, in relation to the molybdenum plant operated by Molymex, S.A. de C.V., in the municipality of Cumpas, Sonora, Mexico ("Molymex"). The Council directed the Secretariat, in developing the factual record, to consider whether the Party concerned "is failing to effectively enforce its environmental law" since the entry into force of the NAAEC on 1 January 1994. In considering such an alleged failure to effectively enforce, relevant facts that existed prior to 1 January 1994 may be included in the factual record.

By means of this document, the Secretariat seeks information relevant to matters to be addressed in the factual record for the Molymex II submission, SEM-00-005. The following sections provide background on the submission and describe the type of information sought.

II. Molymex II submission

On 6 April 2000, Academia Sonorense de Derechos Humanos, A.C., and Domingo Gutiérrez Mendívil filed a submission with the Secretariat of the CEC, asserting that Mexico is failing to effectively enforce its environmental law in relation to the operation of the Molymex molybdenum plant in Cumpas, Sonora, Mexico.

The alleged failures to effectively enforce the environmental law of Mexico covered by this factual record refer to the environmental impact assessment of the Molymex activities that commenced in 1994 (Articles 28 paragraph III, 29 paragraphs IV and VI, and 32 of the LGEEPA); the definition of zones in Cumpas in which polluting facilities may be sited (LGEEPA Article 112); and sulfur dioxide emissions allegedly exceeding

1. The transcriptions contained in the submission correspond to the text of the LGEEPA that was in force prior to the reforms published in the Official Gazette of the Federation (*Diario Oficial de la Federación*–DOF) of 13 December 1996. This, however, does not substantially alter the sense of the Submitters' arguments, due both to the nature of the arguments and to the fact that the content of the former Articles 28, 29 and 32 has been incorporated into Articles 29 and 30 of the current text of the LGEEPA. See also, in this regard, SEM-00-005 (Molymex II), Article 15(1) Notification to Council (20 December 2001), p. 7.
2. *NOM-022-SSA1/1993 – Environmental Health. Criterion for assessing ambient air quality with respect to sulfur dioxide (SO_2). Standard value for sulfur dioxide (SO_2) concentration in ambient air, as a public health protection measure.* Published in the DOF of 23 December 1994.

the SO_2 concentration limits in ambient air established for the protection of public health (NOM-022-SSA1/1993). The Submitters assert the existence of health risks to the residents of Cumpas, Sonora, as well as various negative environmental impacts at that locality, allegedly caused by molybdenum trioxide and sulfur dioxide emissions produced by Molymex. The submission cites a 1995 report of the Office of the Federal Attorney for Environmental Protection (*Procuraduría Federal de Protección al Ambiente*–Profepa) expressing concern about the health risks to the residents of Cumpas arising from the Molymex emissions.

Mexico filed a response to this submission on 18 January 2001. In its response, the Party puts forward three arguments to dismiss the assertion that it is failing to effectively enforce the environmental impact assessment requirement: first, that environmental impact assessment did not apply because it was not required when Molymex commenced its operations; second, that environmental impact assessment is a purely preventive procedure; third, that the relevant environmental impact provisions were in fact enforced in regard to Molymex, since the expansion project of 1998 did undergo assessment and obtained the relevant authorization. In regard to the other assertions, the response asserts that the land-use permit issued to Molymex establishes the zoning for polluting facilities in Cumpas, and that the company has not violated NOM-022-SSA1/1993.

III. Request for information

The Secretariat of the CEC requests information relevant to the facts concerning:

i) the alleged violations of Articles 28 (para. III), 29 (paras. IV and VI) and 32 of the LGEEPA as well as NOM-022-SSA1/1993 by Molymex; and the alleged failure by the Municipality of Cumpas to enforce LGEEPA Article 112;

ii) Mexico's enforcement of these provisions in the case of Molymex; and

iii) the effectiveness of Mexico's enforcement of these provisions in the case of Molymex.

IV. Examples of relevant information

1. Information on Mexico's enforcement of Articles 28 (para. III), 29 (paras. IV and VI) and 32 of the LGEEPA, as well as NOM-022-

SSA1/1993 in the case of Molymex; and on the alleged omission by the Municipality of Cumpas with respect to LGEEPA Article 112.

2. Information on any municipal, state or federal environmental law enforcement policies or practices that apply to the alleged failures described above, as well as on the manner in which they were enforced in the case of Molymex.

3. Information on the effectiveness of Mexico's enforcement of the provisions in question in the case of Molymex, with regard to the environmental impact assessment of the activities commenced in 1994.

4. Information on the effectiveness of Mexico's enforcement of the provisions in question in the case of Molymex, with regard to the sulfur dioxide emissions that allegedly exceed the SO_2 concentration limits in ambient air established for the protection of public health, from the time that Molymex began operations in 1994 to the present moment.

5. Information on the SO_2 concentrations in ambient air at Cumpas, Sonora, from the time that Molymex began operations in 1994 to the present moment.

6. Information on the possible health effects on the population of Cumpas, Sonora, due to Molymex's alleged violation of the SO_2 concentration limits in ambient air.

7. Additional information on the health and environmental effects allegedly caused by Molymex, which are referred to by the Submitters and were identified by Profepa in 1995.

8. Information on the relationship between Molymex's authorized SO_2 emission levels and the observance of the maximum SO_2 concentration in ambient air established by NOM-022-SSA1/1993 for the protection of public health.

9. Information on Molymex's monitoring and reporting of its SO_2 emissions.

10. Information on whether there exists a municipal urban development plan defining the zones in which polluting facilities may be sited, and information enabling a determination of whether the Molymex plant is located outside of such zones.

11. Any other technical, scientific or other information that could be relevant.

V. Additional background information

The submission, Mexico's response, the Secretariat's determinations, the Council Resolution, the overall plan to develop the factual record, and other information are available in the Registry and Public Files in the Citizen Submissions on Enforcement Matters section of the CEC web site at <http://www.cec.org>. These documents may also be requested from the Secretariat.

VI. Where to send information

Relevant information for the development of the factual record may be sent to the Secretariat until **25 October 2002** at either of the following addresses:

Secretariat of the CEC
Submissions on Enforcement
Matters Unit (SEM Unit)
393, rue St-Jacques Ouest,
bureau 200
Montreal QC H2Y 1N9
Canada
Tel. (514) 350-4300

CCA/Mexico Liaison Office
Atención: Unidad sobre Peticiones
Ciudadanas (UPC)
Progreso núm. 3
Viveros de Coyoacán
México, D.F. 04110
México
Tel. (52-55) 5659-5021

For any questions, please send an e-mail to the attention of Carla Sbert, at <info@ccemtl.org>.

APPENDIX 4

Information Requests to Mexican Authorities and List of Recipient Authorities

Letter to the Party requesting information for development of the factual record for SEM-00-005

20 June 2002

Re: Development of factual record for submission SEM-00-005 (Molymex II)

The Secretariat hereby requests Mexico to provide relevant information for preparation of the factual record in regard to submission SEM-00-005 (Molymex II) in accordance with NAAEC Articles 15(4) and 21(1)(a).

As you are aware, on 17 May 2002 the Council resolved unanimously to instruct the Secretariat to develop a factual record in accordance with NAAEC Article 15 and the *Guidelines for Submissions on Enforcement Matters under Articles 14 and 15 of the North American Agreement on Environmental Cooperation* regarding the assertions made in submission SEM-00-005 that Mexico is failing to effectively enforce Articles 28 paragraph III, 29 paragraphs IV and VI, 32 and 112 of the General Law of Ecological Balance and Environmental Protection (*Ley General del Equilibrio Ecológico y la Protección al Ambiente*—LGEEPA), governing environmental impact and the definition of zones in which polluting facilities may be sited, and Mexican Official Standard NOM-022-SSA1/1993,[1] regarding the concentration of SO_2 in ambient air, with respect to the operation of the molybdenum plant by the company Molymex, S.A. de C.V., located in the municipality of Cumpas, Sonora, Mexico ("Molymex").

In accordance with NAAEC Articles 15(4) and 21(1)(a), the Secretariat shall, in developing the factual record, consider any information furnished by a Party, and may also request additional information. Likewise, it may consider information that is publicly available or is provided by other NAAEC Parties, the JPAC, the submitters, or other interested non-governmental organizations or persons, as well as information developed by the Secretariat and by independent experts.

1. *NOM-022-SSA1/1993 – Environmental Health. Criterion for the assessment of ambient air quality with respect to sulfur dioxide (SO_2). Standard value for sulfur dioxide (SO_2) concentration in ambient air, as a public health protection measure.* Published in the *Official Gazette of the Federation* on 23 December 1994.

Attached please find the list of questions for which information is requested from Mexico for the development of this factual record. Kindly respond to this request by 13 September 2002.

Thank you for your attention to this matter.

Yours sincerely,

Legal Officer
Submissions on Enforcement Matters Unit

Encl.

cc: [Environment Canada]
[US EPA]
CEC Executive Director

Secretariat of the Commission for Environmental Cooperation

Request for Information from Mexico to Develop the Factual Record in regard to Submission SEM-00-005 (Molymex II) 20 June 2002

Submission SEM-00-005 asserts that Mexico is failing to effectively enforce its environmental law with respect to the operation of the Molymex molybdenum production plant in Cumpas, Sonora. The Submitters assert the presence of risks to the health of Cumpas residents and various negative environmental impacts in that town, allegedly ensuing from molybdenum trioxide and sulfur dioxide emissions by Molymex. The Submission cites a 1995 report of the Office of the Federal Attorney for Environmental Protection (*Procuraduría Federal de Protección al Ambiente*–Profepa) expressing concern about the risks to the health of the Cumpas population arising from Molymex's emissions.

For the preparation of the factual record on this Submission, the Secretariat is requesting additional information from the Party on the effective enforcement of its environmental law in regard to environmental impact assessment of the Molymex activities initiated in 1994 (LGEEPA Articles 28 paragraph III, 29 paragraphs IV and VI, and 32); the definition of zones in Cumpas where polluting industrial facilities may be sited (LGEEPA Article 112); and sulfur dioxide emissions allegedly in violation of the ambient SO_2 concentration limits established for the protection of public health (NOM-022-SSA1/1993). In particular:

1. Provide information on any municipal, state, or federal policies or practices that may be applicable in relation to the aforementioned alleged failures, and on the manner in which they were applied in the case of Molymex.

2. In the response, the Party puts forward three arguments to dismiss the allegation of failure to effectively enforce the cited environmental impact provisions of LGEEPA (Articles 28 paragraph III, 29 paragraphs IV and VI, and 32) with respect to Molymex.

    2.1. Mexico asserts in its response that environmental impact assessment was not required when Molymex commenced its operations and that the procedure could not be applied retroactively.

2.1.1. Based on two 1924 decisions of the Mexican Supreme Court (*Suprema Corte de Justicia de la Nación*), the Submitters argue that where the public or social interest so dictates, a legal provision may be given retroactive effects.[2] The Party did not make reference to this argument in its response but merely cited a previous Supreme Court decision to the contrary. Provide additional information on this point.

2.1.2. Under Transitory Article 5 of the Regulation to the LGEEPA respecting Environmental Impact (*Reglamento de la LGEEPA en Materia de Impacto Ambiental*), in force from 8 June 1988 to 29 June 2000,[3] the Party was empowered to require Molymex to file an environmental impact statement even if the company's activities had begun prior to the coming into force of that requirement. Explain the reasons why the environmental authority decided not to use this power.

2.1.3. Since the plant's activities were interrupted in 1991, the application of the environmental impact procedure to the activities initiated in 1994 would not appear to be retroactive. Where an activity is ongoing in nature and the activity is interrupted (such as in the case of Molymex's activities in 1991), it is unclear that the application of a provision after the resumption of the activity (apparently in 1994) is retroactive. Provide additional information on this point.

2.2. Mexico argues in its response that environmental impact assessment is a purely preventive procedure. However, it would appear that the Molymex activities initiated in 1994 were different from the previous ones and that, therefore, the use of preventive mechanisms would be appropriate. According to the Submitter, the plant resumed its activities in 1994 with a 10-hearth furnace instead of a 7-hearth furnace and using a different raw material, apparently causing greater environmental impacts.

2.2.1. Describe the Molymex activities interrupted in 1991 and explain whether the interruption was total or partial.

2. See Submission, p. 7.

2.2.2. Describe the activities with which Molymex resumed its operations in 1994 and explain the differences and similarities with the activities carried out until 1991. Explain how the environmental authority took these issues into consideration in its decision not to require Molymex to conduct an environmental impact assessment.

2.2.3. The response states that there are other instruments with which the environmental authority can regulate possible environmental impacts. Detail the instruments used in this manner in the case of Molymex.

2.3. Mexico's response asserts that the environmental impact provisions were in fact enforced with respect to Molymex since the 1998 expansion project underwent assessment and obtained the relevant authorization.

2.3.1. Explain whether the environmental impact assessment for the 1998 expansion project covered, in any sense, the activities resumed in 1994.

2.3.2. Explain why the application of the environmental impact procedure to the 1998 project was not considered retroactive, as was the case with respect to the activities initiated in 1994.

3. Provide a copy of the Cumpas urban development masterplan to which the Submitter refers, indicate its period of effectiveness, and explain whether it is applicable to Molymex.[4]

4. Clarify whether that plan or another municipal urban development plan for Cumpas, Sonora defines the zones in which polluting industrial facilities may be sited.

5. Explain how the Municipality of Cumpas applied the "general criteria for protection of the atmosphere" contemplated in LGEEPA Article 112 in that urban development plan.

3. When it was repealed by a new regulation. We refer to this regulation and not the one currently in force, since it is the one that was in force when the submission was filed.
4. See Submission, p. 11 and Appendix IV.

6. Detail the location of the Molymex plant with respect to the corresponding plan (if one exists) and clarify whether or not the Molymex plant is located within an improper zone.

7. Provide information, covering the period from the commencement of operations by Molymex in 1994 to date, on the effective enforcement of Mexican Official Standard NOM-022-SSA1/1993 by Mexico with respect to Molymex in regard to sulfur dioxide emissions allegedly in violation of the ambient SO_2 concentration limits established for the protection of public health.

8. In the response and in a report dated 17 January 2001 (by the Sonora State Branch of Profepa's Office of the Deputy Attorney for Industrial Auditing, submitted to the Semarnap Legal Affairs Branch),[5] it is asserted that the company is in compliance with its air emission obligations[6] and several conditions of its operating permit. According to the report, the company has remitted its perimeter monitoring data to the authority since October 1994. Mexico's response further asserts that according to the annual results for the period 1995–2000 at each of the four perimeter monitoring stations, sulfur dioxide concentrations were within the limits of NOM-022-SSA1/1993.[7] Provide copies of these results (stack emission and ambient SO_2 concentration data) as well as the reports and other documents relating to the acts of inspection and enforcement corresponding to these assertions.

9. Clarify whether Molymex's operating permit authorized the company to produce emissions in excess of the NOM-022-SSA1-1993 standards established for the protection of human health.

10. The limit established by NOM-022-SSA1/1993 refers to ambient SO_2 concentration, whereas the limits and the deadline extension set for Molymex specifically (in *oficios* DFS-D-0986-97 and DS-SMA-UNE-LF-282) refer to emissions measured directly at the plant's stack. Explain the relationship between the SO_2 emission levels set for Molymex specifically and the observance of the ambient SO_2 concentration standard set by NOM-022-SSA1/1993 for the protection of human health.

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5. See Response, Appendix 10.
6. Specifically, this document asserts compliance with Articles 13, paragraphs I and II; 16; 17, paragraphs I–VIII; 23, and 26 of the Regulation to the LGEEPA respecting Air Pollution Prevention and Control (presumably, since the document does not specify).
7. See Response, p. 16.

11. By means of an *oficio* dated 17 June 1997, the deadline for compliance with the sulfur dioxide emission limit of 650 ppmv is extended by 1,640 days starting 31 December 1997 (i.e., until June 2002), and the plant is also authorized to operate at its installed capacity. This *oficio* further indicates that the company must comply with the ambient SO_2 emission limits set by *oficio* DFS-D-0114-97. Provide a copy of *oficio* DFS-D-0114-97.[8]

12. Provide information on the ambient SO_2 concentrations at Cumpas, Sonora from the commencement of operations by Molymex in 1994 to date.

13. Provide information on the alleged health effects or risks to the population of Cumpas or the environment which the Submitters (and Profepa in 1995) ascribed to SO_2 emissions from the Molymex plant. Detail the follow-up given to the Profepa report of 1995.

14. Provide any other technical, scientific or other information that may be relevant.

8. See Response, Appendix 8, p. 2.

Mexican Authorities Recipient of a Request for Information for the Development of the Factual Record on Submission SEM-00-005

FEDERAL

Ministry of the Environment and Natural Resources (SEMARNAT)
- Minister's Office
- International Affairs Coordination Unit (UCAI)

Office of the Federal Attorney for Environmental Protection (PROFEPA)
- Sonora State Office
- International Affairs Unit (Mexico, D.F.)

STATE

Constitutional Government of the State of Sonora

Ministry of Economic Development and Productivity
- Mining Development Branch

Sonora Ministry of Public Health and Health Services
- Director's Office
- Health Services Branch
- Environmental Health Department
- Health Regulation and Promotion Branch
- Epidemiology Directorate

Sonora State Children's Hospital

Sonora State General Hospital

MUNICIPAL

Office of the Mayor of Cumpas

APPENDIX 5

Information Requests to NGOs, JPAC and other Parties to the NAAEC

Form Letter to NGOs

4 July 2002

Re: Request for information relevant to the factual record for submission SEM-00-005 (Molymex II)

The Secretariat of the Commission for Environmental Cooperation of North America recently began the process of preparing a "factual record" regarding an assertion that Mexico is failing to effectively enforce its environmental law in relation to the operation of a molybdenum plant by the company Molymex, S.A. de C.V. ("Molymex"), located in the municipality of Cumpas, Sonora, México. This assertion was made in a "submission" filed with the Secretariat in April 2000 by the Academia Sonorense de Derechos Humanos, A.C., and Domingo Gutiérrez Mendívil.

I am writing to invite you to submit information relevant to the factual record. The attached Request for Information explains the citizen submissions process and factual records, gives background about the so-called Molymex II submission (SEM-00-005), describes the scope of the information to be included in the factual record for that submission, and provides examples of information that might be relevant. We will accept information for possible consideration in connection with the factual record **until 25 October 2002**.

We appreciate your consideration of this request and look forward to any relevant information you are able to provide. Please feel free to contact the Secretariat if you have questions. Contact information is provided at the end of the Request for Information.

Sincerely,

Legal Officer
Submissions on Enforcement Matters Unit

Enclosure

Memorandum to the Joint Public Advisory Committee

Memorandum

DATE:	28 June 2002
À / PARA / TO:	Chair, JPAC
CC:	JPAC Members, CEC Acting Executive Director, JPAC Liaison Officer
DE / FROM:	Legal Officer, Submissions on Enforcement Matters Unit
OBJET / ASUNTO / RE:	Request for information relevant to the factual record for submission SEM-00-005 (Molymex II)

As you know, the CEC Secretariat recently began the process of preparing a factual record for submission SEM-00-005 (Molymex II). This submission was filed with the Secretariat in April 2000 by the Academia Sonorense de Derechos Humanos, A.C., and Domingo Gutiérrez Mendívil. Consistent with Council Resolution 02-03, the factual record will focus on the assertion that Mexico is failing to effectively enforce Articles 28 paragraph III, 29 paragraphs IV and VI, 32 and 112 of the General Law of Ecological Balance and Environmental Protection (*Ley General del Equilibrio Ecológico y la Protección al Ambiente*—LGEEPA), governing environmental impact and the definition of zones in which polluting facilities may be sited, and Mexican Official Standard NOM-022-SSA1/1993,[1] regarding the concentration of SO_2 in ambient air, with respect to the operation of the molybdenum plant by the company Molymex, S.A. de C.V., located in the municipality of Cumpas, Sonora, Mexico ("Molymex").

I am writing to invite the JPAC to submit information relevant to the factual record, consistent with Article 15(4)(c) of the NAAEC. The attached Request for Information, which has been posted on the CEC website, gives background about the Molymex II submission, describes

1. *NOM-022-SSA1/1993 – Environmental Health. Criterion for the assessment of ambient air quality with respect to sulfur dioxide (SO_2). Standard value for sulfur dioxide (SO_2) concentration in ambient air, as a public health protection measure.* Published in the *Official Gazette of the Federation* on 23 December 1994.

the scope of the information to be included in the factual record, and provides examples of information that might be relevant. We will accept information for possible consideration in connection with the factual record until 25 October 2002.

We appreciate your consideration of this request and look forward to any relevant information you are able to provide. Please feel free to contact me at (514) 350-4321 or csbert@ccemtl.org if you have questions regarding this request or the factual record process.

Letter to the Other Parties of the NAAEC (Canada and US)

26 June 2002

Re: Invitation to provide information relevant to the factual record for submission SEM-00-005 (Molymex II)

As you know, the CEC Secretariat recently began the process of preparing a factual record for submission SEM-00-005 (Molymex II), consistent with Council Resolution 02-03. I am writing to invite the [Canadian][the United States] Party to submit information relevant to the factual record, in accordance with Article 15(4) of the NAAEC.

The attached Request for Information, which has been posted on the CEC website, gives background about the Molymex II submission, describes the scope of the information to be included in the factual record, and provides examples of information that might be relevant. We will accept information for consideration in connection with the factual record until 25 October 2002.

We appreciate your consideration of this request and look forward to any relevant information you are able to provide. Please feel free to contact me at (514) 350-4321 or csbert@ccemtl.org if you have questions regarding this request.

Sincerely,

Legal Officer
Submissions on Enforcement Matters Unit

cc: SEMARNAT
[US EPA]
[Environment Canada]
CEC Acting Executive Director

Enclosure

Nongovernmental organizations and individual recipients of requests for information for the development of the factual record in regard to Submission SEM-00-005

Academia Sonorense de Derechos Humanos, A.C.

Ciudadanos por el Cambio Democrático

Molibdenos y Metales, S.A. (Molymet)

Molymex, S.A. de C.V.

University of Arizona
- U.S. – Mexico Border Environment Program
- Udall Center for Studies in Public Policy

Universidad de Sonora
- División de Ciencias Biológicas y de la Salud
- Dirección de Investigación y Postgrado

APPENDIX 6

Information Gathered for the Development of the Factual Record on Submission SEM-00-005 (Molymex II)

Information gathered for the development of the factual record on submission SEM-00-005 (Molymex II)

No.	Document/Appendix	AUTHOR	DATE mm/dd/yy	ID	Provided to Secretariat by	Received mm/dd/yy
1	Letter to CEC requesting preparation of a factual record in the case of Molymex.	Comité Pro Defensa del Medio Ambiente de Cumpas (COPRODEMAC; Heras Durán, A.)	12/23/01	n/a	COPRODEMAC (Heras Durán, A.)	12/27/01
2	Video about Molymex, 4 minutes in length	Visual Images Productions	12/22/01	n/a	COPRODEMAC (Heras Durán, A.)	12/27/01
3	Oficio No. UCAI/3580/02 with additional information from the Environmental Assessment and Risk Branch (Dirección General de Impacto and Riesgo Ambiental).	SEMARNAT-UCAI (García Velasco, M.)	08/09/02	IP-Mex-DGIRA[1]	SEMARNAT (García Velasco, M.)	08/20/02
4	Oficio No. S.G.P.A.-DGIRA.-DIA.-0643/02 issued by the Office of the Deputy Minister of Management for Environmental Protection (Subsecretaría de Gestión para la Protección Ambiental), Environmental Assessment and Risk Branch in response to the request for information for development of the factual record.	SEMARNAT – Environmental Assessment and Risk Branch (Juárez Palacios, J.R.)	08/05/02	IP-Mex-DGIRA	SEMARNAT (García Velasco, M.)	08/20/02
5	Oficio No. UCAI/3693/02 with information from Profepa comprising thirteen Appendices.	SEMARNAT (García Velasco, M.)	08/16/02	IP-Mex-Profepa2[2]	SEMARNAT (García Velasco, M.)	08/27/02
6	Oficio O.A.I/419/02 No. 03916 to Deputy Director for Legal and Multilateral Affairs with comments and information on the Molymex plant.	PROFEPA (Munguía Aldaraca, N.)	08/14/02	IP-Mex-Profepa2	SEMARNAT (García Velasco, M.)	08/27/02
7	*Appendix No. I: Perimeter monitoring of SO_2 for 1994.*	Molymex, S.A. de C.V.	1994	IP-Mex-Profepa2	SEMARNAT (García Velasco, M.)	08/27/02
8	*Appendix No. II: Perimeter monitoring of SO_2 for 1995.*	Molymex, S.A. de C.V.	1995	IP-Mex-Profepa2	SEMARNAT (García Velasco, M.)	08/27/02
	Appendix No. III:					
9	*Perimeter monitoring of SO_2 for 1996.*	Molymex, S.A. de C.V.	1996	IP-Mex-Profepa2	SEMARNAT (García Velasco, M.)	08/27/02
10	*Oficio No. DCA-SD-XII-01-96 to SEMARNAP Federal Officer in Sonora with air quality monitoring information on sulfur dioxide and PM_{10} for November 1996.*	Molymex, S.A. de C.V. (Carvajal Galindo, A.)	12/06/96	IP-Mex-Profepa2	SEMARNAT (García Velasco, M.)	08/27/02
11	*Oficio No. DCA-SD-1-01-97 to SEMARNAP Federal Officer in Sonora with air quality monitoring information on sulfur dioxide and PM_{10} for December 1996.*	Molymex, S.A. de C.V. (Carvajal Galindo, A.)	01/08/97	IP-Mex-Profepa2	SEMARNAT (García Velasco, M.)	08/27/02

1. Information provided by Environmental Impact and Risk Branch, SEMARNAT.
2. Information provided by Federal Attorney for Environmental Protection (PROFEPA).

No.	DOCUMENT/APPENDIX	AUTHOR	DATE mm/dd/yy	ID	PROVIDED TO SECRETARIAT BY	RECEIVED mm/dd/yy
	Appendix No. IV:					
12	*Perimeter monitoring of SO_2 for 1997.*	Molymex, S.A. de C.V.	1997	IP-Mex-Profepa2	SEMARNAT (García Velasco, M.)	08/27/02
13	*Oficio No. DCA-SD-III-01-97 to SEMARNAP Federal Officer in Sonora with air quality monitoring information on sulfur dioxide, $_{PM10}$ for February 1997.*	Molymex, S.A. de C.V. (Carvajal Galindo, A.)	03/07/97	IP-Mex-Profepa2	SEMARNAT (García Velasco, M.)	08/27/02
14	*Oficio No. DCA-SD-IV-01-97 to SEMARNAP Federal Officer in Sonora with air quality monitoring information on sulfur dioxide and PM_{10} for March 1997.*	Molymex, S.A. de C.V. (Carvajal Galindo, A.)	04/03/97	IP-Mex-Profepa2	SEMARNAT (García Velasco, M.)	08/27/02
15	*Oficio No. DCA-SD-V-01-97 to SEMARNAP Federal Officer in Sonora with air quality monitoring information on sulfur dioxide, PM_{10} for April 1997.*	Molymex, S.A. de C.V. (Carvajal Galindo, A.)	05/05/97	IP-Mex-Profepa2	SEMARNAT (García Velasco, M.)	08/27/02
16	*Oficio No. DCA-SD-VI-01-97 to SEMARNAP Federal Officer in Sonora with air quality monitoring information on sulfur dioxide, PM_{10} for May 1997.*	Molymex, S.A. de C.V. (Carvajal Galindo, A.)	06/11/97	IP-Mex-Profepa2	SEMARNAT (García Velasco, M.)	08/27/02
17	*Oficio No. DCA-07-08/97-01 to Federal Officer of SEMARNAP with monitoring information for June and July 1997.*	Molymex, S.A. de C.V. (Carvajal Galindo, A.)	08/07/97	IP-Mex-Profepa2	SEMARNAT (García Velasco, M.)	08/27/02
18	*Oficio No. DCA-04-08/97-04 to SEMARNAP Federal Officer in Sonora with monitoring information for August 1997.*	Molymex, S.A. de C.V. (Carvajal Galindo, A.)	09/04/97	IP-Mex-Profepa2	SEMARNAT (García Velasco, M.)	08/27/02
19	*Oficio No. DCA-04/10/97-04 to SEMARNAP Federal Officer in Sonora with monitoring information for September 1997.*	Molymex, S.A. de C.V. (Carvajal Galindo, A.)	10/04/97	IP-Mex-Profepa2	SEMARNAT (García Velasco, M.)	08/27/02
20	*Oficio No. DCA-06-11/97-01 to SEMARNAP Federal Officer in Sonora with monitoring information for October 1997.*	Molymex, S.A. de C.V. (Carvajal Galindo, A.)	11/06/97	IP-Mex-Profepa2	SEMARNAT (García Velasco, M.)	08/27/02
21	*Oficio No. DCA-03-11/97-36 to SEMARNAP Federal Officer in Sonora with monitoring information for November 1997.*	Molymex, S.A. de C.V. (Carvajal Galindo, A.)	11/03/97	IP-Mex-Profepa2	SEMARNAT (García Velasco, M.)	08/27/02
	Appendix No. V:					
22	*Perimeter monitoring of SO_2 for 1998.*	Molymex, S.A. de C.V.	1998	IP-Mex-Profepa2	SEMARNAT (García Velasco, M.)	08/27/02
23	*Oficio No. DCA-06-02-98-07 to SEMARNAP Federal Officer in Sonora with perimeter monitoring information on SO_2 for January 1998.*	Molymex, S.A. de C.V. (Carvajal Galindo, A.)	02/06/98	IP-Mex-Profepa2	SEMARNAT (García Velasco, M.)	08/27/02
24	*Oficio No. DCA-04-03-98-10 to SEMARNAP Federal Officer in Sonora with monitoring information for February 1998.*	Molymex, S.A. de C.V. (Carvajal Galindo, A.)	03/04/98	IP-Mex-Profepa2	SEMARNAT (García Velasco, M.)	08/27/02

No.	DOCUMENT/APPENDIX	AUTHOR	DATE mm/dd/yy	ID	PROVIDED TO SECRETARIAT BY	RECEIVED mm/dd/yy
25	*Oficio No. DCA-02-04-98-01 to SEMARNAP Federal Officer in Sonora with monitoring information for March 1998.*	Molymex, S.A. de C.V. (Carvajal Galindo, A.)	04/02/98	IP-Mex-Profepa2	SEMARNAT (García Velasco, M.)	08/27/02
26	*Oficio No. DCA-17-06-98-16 to SEMARNAP Federal Officer in Sonora with monitoring information for May 1998.*	Molymex, S.A. de C.V. (Carvajal Galindo, A.)	06/17/98	IP-Mex-Profepa2	SEMARNAT (García Velasco, M.)	08/27/02
27	*Oficio No. DCA-0306/98-50 to SEMARNAP Federal Officer in Sonora with monitoring information for June 1998.*	Molymex, S.A. de C.V. (Carvajal Galindo, A.)	06/03/98	IP-Mex-Profepa2	SEMARNAT (García Velasco, M.)	08/27/02
28	*Oficio No. DCA-1008/98-77 and ISO-9002 certificate to SEMARNAP Federal Officer in Sonora with monitoring information for July 1998.*	Molymex, S.A. de C.V. (Carvajal Galindo, A.)	08/10/98	IP-Mex-Profepa2	SEMARNAT (García Velasco, M.)	08/27/02
29	*Oficio No. DCA-0809/98-80 to SEMARNAP Federal Officer in Sonora with monitoring information for August 1998.*	Molymex, S.A. de C.V. (Carvajal Galindo, A.)	09/08/98	IP-Mex-Profepa2	SEMARNAT (García Velasco, M.)	08/27/02
30	*Oficio No. DCA-0710/98-85 to SEMARNAP Federal Officer in Sonora with monitoring information for September 1998.*	Molymex, S.A. de C.V. (Carvajal Galindo, A.)	10/07/98	IP-Mex-Profepa2	SEMARNAT (García Velasco, M.)	08/27/02
31	*Oficio No. DCA-0411/98-102 to SEMARNAP Federal Officer in Sonora with monitoring information for October 1998.*	Molymex, S.A. de C.V. (Carvajal Galindo, A.)	11/04/98	IP-Mex-Profepa2	SEMARNAT (García Velasco, M.)	08/27/02
32	*Oficio No. DCA-0412/98-118. ISO-9002 Certificate to Federal Officer in Sonora with monitoring information for November 1998.*	Molymex, S.A. de C.V. (Carvajal Galindo, A.)	12/04/98	IP-Mex-Profepa2	SEMARNAT (García Velasco, M.)	08/27/02
33	*Oficio No. DCA-1101/99-06 to SEMARNAP Federal Officer in Sonora with monitoring information for December 1998.*	Molymex, S.A. de C.V. (Carvajal Galindo, A.)	01/11/99	IP-Mex-Profepa2	SEMARNAT (García Velasco, M.)	08/27/02
	Appendix No. VI:					
34	*Perimeter monitoring of SO_2 for 1999.*	Molymex, S.A. de C.V.	1999	IP-Mex-Profepa2	SEMARNAT (García Velasco, M.)	08/27/02
35	*Oficio No. DCA-0802/99-28 ISO-9002 certificate. Monitoring records for January 1999.*	Molymex, S.A. de C.V. (Carvajal Galindo, A.)	02/08/99	IP-Mex-Profepa2	SEMARNAT (García Velasco, M.)	08/27/02
36	*Oficio No. DCA-0303/99-52 Monitoring records for February 1999.*	Molymex, S.A. de C.V. (Carvajal Galindo, A.)	03/03/99	IP-Mex-Profepa2	SEMARNAT (García Velasco, M.)	08/27/02
37	*Oficio No. DCA-0904/99-94 Monitoring records for March 1999.*	Molymex, S.A. de C.V. (Carvajal Galindo, A.)	04/09/99	IP-Mex-Profepa2	SEMARNAT (García Velasco, M.)	08/27/02
38	*Oficio No. DCA-07-V-99/95 Monitoring records for April 1999.*	Molymex, S.A. de C.V. (Carvajal Galindo, A.)	05/07/99	IP-Mex-Profepa2	SEMARNAT (García Velasco, M.)	08/27/02
39	*Oficio No. DCA-14-VI-99/97 Monitoring records for May 1999.*	Molymex, S.A. de C.V. (Carvajal Galindo, A.)	06/14/99	IP-Mex-Profepa2	SEMARNAT (García Velasco, M.)	08/27/02
40	*Oficio No. DCA-12-VII-99/118 Monitoring records for June 1999.*	Molymex, S.A. de C.V. (Carvajal Galindo, A.)	07/12/99	IP-Mex-Profepa2	SEMARNAT (García Velasco, M.)	08/27/02

No.	DOCUMENT/APPENDIX	AUTHOR	DATE mm/dd/yy	ID	PROVIDED TO SECRETARIAT BY	RECEIVED mm/dd/yy
41	*Oficio No. DCA-04-VIII-99/125 Monitoring records for July 1999.*	Molymex, S.A. de C.V. (Carvajal Galindo, A.)	08/04/99	IP-Mex-Profepa2	SEMARNAT (García Velasco, M.)	08/27/02
42	*Oficio No. DCA-07-09-99/130 Monitoring records for August 1999.*	Molymex, S.A. de C.V. (Carvajal Galindo, A.)	09/07/99	IP-Mex-Profepa2	SEMARNAT (García Velasco, M.)	08/27/02
43	*Oficio No. DCA-04-IX-99/148 Monitoring records for September 1999.*	Molymex, S.A. de C.V. (Carvajal Galindo, A.)	10/04/99	IP-Mex-Profepa2	SEMARNAT (García Velasco, M.)	08/27/02
44	*Oficio No. DCA-07-XII-99/104 Monitoring records for October 1999.*	Molymex, S.A. de C.V. (Carvajal Galindo, A.)	12/07/99	IP-Mex-Profepa2	SEMARNAT (García Velasco, M.)	08/27/02
45	*Oficio No. DCA-07-12-99/175 Monitoring records for November 1999.*	Molymex, S.A. de C.V. (Carvajal Galindo, A.)	12/07/99	IP-Mex-Profepa2	SEMARNAT (García Velasco, M.)	08/27/02
46	*Oficio No Appendix No. I: Perimeter monitoring of SO_2 for 1994.. DCA-05-I-00/04 Monitoring records for December 1999.*	Molymex, S.A. de C.V. (Carvajal Galindo, A.)	01/05/00	IP-Mex-Profepa2	SEMARNAT (García Velasco, M.)	08/27/02
	Appendix No. VII:					
47	*Perimeter monitoring of SO_2 for 2000.*	Molymex, S.A. de C.V.	2000	IP-Mex-Profepa2	SEMARNAT (García Velasco, M.)	08/27/02
48	*Oficio No. DCA-08-01-00/09. Monitoring records for January 2000.*	Molymex, S.A. de C.V. (Carvajal Galindo, A.)	02/08/00	IP-Mex-Profepa2	SEMARNAT (García Velasco, M.)	08/27/02
49	*Oficio No. DCA-07-03-00/21 Monitoring information for February 2000.*	Molymex, S.A. de C.V. (Carvajal Galindo, A.)	03/07/00	IP-Mex-Profepa2	SEMARNAT (García Velasco, M.)	08/27/02
50	*Oficio No. DCA-06-04-00/31 Monitoring information for March 2000.*	Molymex, S.A. de C.V. (Carvajal Galindo, A.)	04/06/00	IP-Mex-Profepa2	SEMARNAT (García Velasco, M.)	08/27/02
51	*Oficio No. DCA-04-05-00/43 Monitoring information for April 2000.*	Molymex, S.A. de C.V. (Carvajal Galindo, A.)	05/04/00	IP-Mex-Profepa2	SEMARNAT (García Velasco, M.)	08/27/02
52	*Oficio No. DCA-06-06-00/58 Monitoring information for May 2000.*	Molymex, S.A. de C.V. (Carvajal Galindo, A.)	06/06/00	IP-Mex-Profepa2	SEMARNAT (García Velasco, M.)	08/27/02
53	*Oficio No. DCA-10-07-00/65 Monitoring information for June 2000.*	Molymex, S.A. de C.V. (Carvajal Galindo, A.)	07/10/00	IP-Mex-Profepa2	SEMARNAT (García Velasco, M.)	08/27/02
54	*Oficio No. DCA-04-08-00/71 Monitoring information for July 2000.*	Molymex, S.A. de C.V. (Carvajal Galindo, A.)	08/04/00	IP-Mex-Profepa2	SEMARNAT (García Velasco, M.)	08/27/02
55	*Oficio No. DCA-05-09-00/81 Monitoring information for August 2000.*	Molymex, S.A. de C.V. (Carvajal Galindo, A.)	09/05/00	IP-Mex-Profepa2	SEMARNAT (García Velasco, M.)	08/27/02
56	*Oficio No. DCA-05-10-00/91 Monitoring information for September 2000.*	Molymex, S.A. de C.V. (Carvajal Galindo, A.)	10/05/00	IP-Mex-Profepa2	SEMARNAT (García Velasco, M.)	08/27/02
57	*Oficio No. DCA-06-11-00/101 Monitoring information for October 2000.*	Molymex, S.A. de C.V. (Carvajal Galindo, A.)	11/06/00	IP-Mex-Profepa2	SEMARNAT (García Velasco, M.)	08/27/02
58	*Oficio No. DCA-05XII-00/113 Monitoring information for November 2000.*	Molymex, S.A. de C.V. (Carvajal Galindo, A.)	12/05/00	IP-Mex-Profepa2	SEMARNAT (García Velasco, M.)	08/27/02
59	*Oficio No. DCA-05-I-01/03 Monitoring information for December 2000.*	Molymex, S.A. de C.V. (Carvajal Galindo, A.)	01/05/01	IP-Mex-Profepa2	SEMARNAT (García Velasco, M.)	08/27/02
	Appendix No. VIII:					
60	*Perimeter monitoring of SO_2 for 2001.*	Molymex, S.A. de C.V.	2001	IP-Mex-Profepa2	SEMARNAT (García Velasco, M.)	08/27/02

No.	DOCUMENT/APPENDIX	AUTHOR	DATE mm/dd/yy	ID	PROVIDED TO SECRETARIAT BY	RECEIVED mm/dd/yy
61	*Oficio No. DCA-06-II-01/10. Perimeter monitoring of SO_2 for January 2001.*	Molymex, S.A. de C.V. (Carvajal Galindo, A.)	02/06/01	IP-Mex-Profepa2	SEMARNAT (García Velasco, M.)	08/27/02
62	*Oficio No. DCA-13-III-01/22 Monitoring information for February 2001.*	Molymex, S.A. de C.V. (Carvajal Galindo, A.)	03/13/01	IP-Mex-Profepa2	SEMARNAT (García Velasco, M.)	08/27/02
63	*Oficio No. DCA-09-IV-01/27 Monitoring information for March 2001*	Molymex, S.A. de C.V. (Carvajal Galindo, A.)	04/09/01	IP-Mex-Profepa2	SEMARNAT (García Velasco, M.)	08/27/02
64	*Oficio No. DCA-10-V-01/46. Monitoring information for April 2001.*	Molymex, S.A. de C.V. (Carvajal Galindo, A.)	05/10/01	IP-Mex-Profepa2	SEMARNAT (García Velasco, M.)	08/27/02
65	*Oficio No. DCA-12-VI-01/56. Monitoring information for May 2001.*	Molymex, S.A. de C.V. (Carvajal Galindo, A.)	06/12/01	IP-Mex-Profepa2	SEMARNAT (García Velasco, M.)	08/27/02
66	*Oficio No. DCA-09-VII-01/66. Monitoring information for June 2001.*	Molymex, S.A. de C.V. (Carvajal Galindo, A.)	07/09/01	IP-Mex-Profepa2	SEMARNAT (García Velasco, M.)	08/27/02
67	*Oficio No. DCA-09-VIII-01/76. Monitoring information for July 2001.*	Molymex, S.A. de C.V. (Carvajal Galindo, A.)	08/09/01	IP-Mex-Profepa2	SEMARNAT (García Velasco, M.)	08/27/02
68	*Oficio No. DCA-06-IX-01/80 Monitoring information for August 2001.*	Molymex, S.A. de C.V. (Carvajal Galindo, A.)	09/06/01	IP-Mex-Profepa2	SEMARNAT (García Velasco, M.)	08/27/02
69	*Oficio No. DCA-05-X-01/95 Monitoring information for September 2001.*	Molymex, S.A. de C.V. (Carvajal Galindo, A.)	10/05/01	IP-Mex-Profepa2	SEMARNAT (García Velasco, M.)	08/27/02
70	*Oficio No. DCA-09-XI-01/101 Monitoring information for October 2001.*	Molymex, S.A. de C.V. (Carvajal Galindo, A.)	11/09/01	IP-Mex-Profepa2	SEMARNAT (García Velasco, M.)	08/27/02
71	*Oficio No. DCA-10-XII-01/120 Monitoring information for November 2001.*	Molymex, S.A. de C.V. (Carvajal Galindo, A.)	12/10/01	IP-Mex-Profepa2	SEMARNAT (García Velasco, M.)	08/27/02
72	*Oficio No. DCA-09-I-01/07 Monitoring information for December 2001.*	Molymex, S.A. de C.V. (Bustamante Cerda, A.)	01/09/02	IP-Mex-Profepa2	SEMARNAT (García Velasco, M.)	08/27/02
	Appendix No. IX:					
73	*Perimeter monitoring of SO_2 for 2002.*	Molymex, S.A. de C.V.	2002	IP-Mex-Profepa2	SEMARNAT (García Velasco, M.)	08/27/02
74	*Oficio No. DAS-21-III/02-23. Perimeter monitoring of SO_2 for February 2002.*	Molymex, S.A. de C.V. (Carvajal Galindo, A.)	03/21/02	IP-Mex-Profepa2	SEMARNAT (García Velasco, M.)	08/27/02
75	*Oficio No. DAS-12-V/02-33 Monitoring information for April 2002.*	Molymex, S.A. de C.V. (Carvajal Galindo, A.)	05/14/02	IP-Mex-Profepa2	SEMARNAT (García Velasco, M.)	08/27/02
76	*Oficio No. DAS-17-VII/02-50 Monitoring information for June 2002.*	Molymex, S.A. de C.V. (Carvajal Galindo, A.)	07/17/02	IP-Mex-Profepa2	SEMARNAT (García Velasco, M.)	08/27/02
	Appendix No. X:					
77	*Procedures to verify licenses.*	PROFEPA-Sonora		IP-Mex-Profepa2	SEMARNAT (García Velasco, M.)	08/27/02
78	*Inspection Report No. 260398-SV-Q-028. Inspection Order No. PFPA-DS-SV-0095/98.*	PROFEPA-Sonora	03/26/98	IP-Mex-Profepa2	SEMARNAT (García Velasco, M.)	08/27/02
79	*Inspection Report No. 08032001-SV-Q-001 Inspection Order No. PFPA-DS-SV-0106/2001 from PROFEPA-Sonora for Molymex.*	PROFEPA-Sonora	03/08/01	IP-Mex-Profepa2	SEMARNAT (García Velasco, M.)	08/27/02

No.	Document/Appendix	Author	Date mm/dd/yy	ID	Provided to Secretariat by	Received mm/dd/yy
	Appendix No. XI:					
80	*Copies of operating licenses.*	Ministry of Social Development, Sonora Office (Chávez Méndez, E.)	1994-2000	IP-Mex-Profepa2	SEMARNAT (García Velasco, M.)	08/27/02
81	*Oficio No. DS-139-4-SPA-126 Operating license.*	Ministry of Social Development, Sonora Office (Chávez Méndez, E.)	02/11/94	IP-Mex-Profepa2; IP-Molymex	SEMARNAT (García Velasco, M.) and Molymex, S.A. de C.V. (Carvajal Galindo, A.)	08/27/02; 11/15/02
82	*Appendix XI-a: Ref. SEHS-046/C94 to Sonora State Office, Ministry of Social Development with the information filed for granting of the Molymex operating license.*	Molymex, S.A. de C.V. (Moreno Turrent, M.)	03/03/94	IP-Mex-Profepa2	SEMARNAT (García Velasco, M.)	08/27/02
83	*Appendix XI-b: Oficio No. DS-139-4-SPA-1449. Amendments to Molymex license.*	Ministry of Social Development, Sonora Office (Chávez Méndez, E.)	05/27/94	IP-Mex-Profepa2	SEMARNAT (García Velasco, M.)	08/27/02
84	*Appendix XI-c: Oficio No. DS-SMA-UNE-LF-282 to Assistant General Manager of Molymex, S.A. de C.V. with amendments to the operating license for Molymex.*	SEMARNAP, Office in Sonora (Gandara Camou, E.)	05/30/96	IP-Mex-Profepa2	SEMARNAT (García Velasco, M.)	08/27/02
85	*Appendix XI-d: Oficio No. SMA-UNE-LF-0590 to Assistant General Manager of Molymex, S.A. de C.V. with conditions on operating license.*	SEMARNAP, Office in Sonora (Gandara Camou, E.)	12/03/96	IP-Mex-Profepa2	SEMARNAT (García Velasco, M.)	08/27/02
86	*Appendix XI-e: Oficio No. DFS-D-0986-97 to Assistant General Manager of Molymex after analysis of technical and economic study, proposals, and justifications for sulfur dioxide emission control filed by Molymex as a requirement in Oficio. No. SMA-UNE-LF-0590.*	SEMARNAP, Office in Sonora (Gandara Camou, E.)	06/17/97	IP-Mex-Profepa2; IP-CCD;[3] IP-Molymex[4]	SEMARNAP (García Velasco, M.); COPRODEMAC (Baldenegro, L.L.) (O'Leary, R.M.) Molymex, S.A. de C.V. (Carvajal Galindo, A.);	08/27/02; 10/10/02; 11/15/02
87	*Appendix XI-f: Oficio No. DS-SMA-UNE-756. Environmental Registration Number MOLMK2602311 with update of Molymex operating license.*	SEMARNAT, Office in Sonora (Luna Urquídez, J.L.)	11/29/00	IP-Mex-Profepa2; IP-CCD; IP-Molymex	SEMARNAP (García Velasco, M.); COPRODEMAC (Baldenegro, L.L.) (O'Leary, R.M.) Molymex, S.A. de C.V. (Carvajal Galindo, A.);	08/27/02; 10/10/02; 11/15/02
	Appendix XII:					
88	*Appendix XII-a: Oficio No. PFPA-DS-SV-442/95. Folio No. OLC-070495-006/95. Administrative Decision No. C28/95.*	PROFEPA Office in Sonora (Celis Salgado, P.)	04/03/95	IP-Mex-Profepa2	SEMARNAT (García Velasco, M.)	08/27/02
89	*Appendix XII-b: Conditional order to rescind closing order No. PFPA-DS-SV-442/95. Folio No. OLC-070495-006/95.*	PROFEPA Office in Sonora (Celis Salgado, P.)	04/07/95	IP-Mex-Profepa2	SEMARNAT (García Velasco, M.)	08/27/02

3. Information provided by Ciudadanos por el Cambio Democrático.
4. Information provided by Molymex.

No.	DOCUMENT/APPENDIX	AUTHOR	DATE mm/dd/yy	ID	PROVIDED TO SECRETARIAT BY	RECEIVED mm/dd/yy
90	*Appendix XII-c: Oficio No. PFPA-DS-UJ-0570/2000. Decision to close Administrative File No. 28/95.*	PROFEPA, Office in Sonora (Morachis López, J.R.)	03/14/00	IP-Mex-Profepa2	SEMARNAT (García Velasco, M.)	08/27/02
	Appendix XIII:					
91	*Appendix XIII-a: Oficio No. CGAES-UEPL-016/00 from SEMARNAP Legislative Branch Liaison Unit (Unidad de Enlace con el Poder Legislativo) to Congressional Standing Committee requesting an investigation of the degree of toxicity of the minerals produced by the Molymex plant.*	SEMARNAP (Bustillos Roqueñi, J.)	02/08/00	IP-Mex-Profepa2	SEMARNAT (García Velasco, M.)	08/27/02
92	*Appendix XIII-b: Oficio No. EOO.SVI.DGIFC.-918/01 from Profepa to Academia Sonorense de Derechos Humanos.*	PROFEPA (Roque Álvarez, A.)	09/11/01	IP-Mex-Profepa2	SEMARNAT (García Velasco, M.)	08/27/02
93	*Appendix XIII-c: Oficio No. 854-98 to Assistant General Manager of Molymex granting industrial land use permit to Molymex.*	Office of the Mayor of Cumpas (Hoyos Medina, J.M.)	09/07/98	IP-Mex-Profepa2	SEMARNAT (García Velasco, M.)	08/27/02
94	*Ratification of the land use permit issued by the Municipality of Cumpas to Molymex.*	Government of the State of Sonora (Ibarra Legarreta, M.)	09/29/98	IP-Mex-Profepa2	SEMARNAT (García Velasco, M.)	08/27/02
95	Oficio: UCAI/3782/02 Response of the SEMARNAT, Federal Office in Sonora to the CEC's request for information.	SEMARNAT (García Velasco, M.)	08/20/02	IP-Mex-Semarnat-D.Sonora[5]	SEMARNAT (García Velasco, M.)	08/30/02
96	*Appendix 1a: Printed reports on sulfur dioxide concentration and meteorological parameters, October-December 1994, Molymex plant in Cumpas, Sonora.*	Molymex, S.A. de C.V.	Oct.-Dec. 1994	IP-Mex-Semarnat-D.Sonora	SEMARNAT (García Velasco, M.)	08/30/02
97	*Appendix 1b: Information in CD-ROM on Molymex monitoring data for 1995–2002.*	Molymex, S.A. de C.V.	1995-2002	IP-Mex-Semarnat-D.Sonora	SEMARNAT (García Velasco, M.)	08/30/02
98	*Appendix 2: Four tables: Number of 24-hour SO_2 exceedance days and annual arithmetic average, Ojo de Agua, Teonadepa, Cumpas and mobile stations, Cumpas, Sonora, Mexico 1995–2000.*	SEMARNAT	1995-2000	IP-Mex-Semarnat-D.Sonora	SEMARNAT (García Velasco, M.)	08/30/02
99	*Appendix 3: Update of operating license. Analysis and conclusions on license update application.*	SEMARNAT	01/29/01	IP-Mex-Semarnat-D.Sonora	SEMARNAT (García Velasco, M.)	08/30/02
100	*Appendix 4: Oficio No. DFS-D-0114-97 Information from SEMARNAT, Federal Office in Sonora, Environment Section (Subdelegación de Medio Ambiente), Environmental Standards Unit (Unidad de Normatividad Ecológica), on air quality monitoring report, May 1997.*	SEMARNAP, Office in Sonora (Gandara Camou, E.)	04/10/97	IP-Mex-Semarnat-D.Sonora	SEMARNAT (García Velasco, M.)	08/30/02

5. Information provided by SEMARNAT Office in Sonora.

No.	Document/Appendix	Author	Date mm/dd/yy	ID	Provided to Secretariat by	Received mm/dd/yy
101	Oficio No. UCAI/3830/02 with copy of oficio from Mayor (*Presidente Municipal*) of the Municipality of Cumpas, Sonora to the SEMARNAT, Federal Officer in Sonora with additional information for the development of the factual record.	SEMARNAT-UCAI (Guzmán Sandoval, H.)	08/23/02	IP-Mex-AC[6]	SEMARNAT (Guzmán Sandoval, H.)	09/04/02
102	*Appendix 1: Oficio 0446/2002 to SEMARNAT, Federal Officer in Sonora.*	Municipality of Cumpas, Sonora (Ballasteros Guzmán, R.)	08/08/02	IP-Mex-AC	SEMARNAT (Guzmán Sandoval, H.)	09/04/02
103	*Appendix 2: Municipal Development Plan 1998–2000. Municipality of Cumpas, Sonora.*	Mayor of Cumpas, Sonora (Hoyos Medina, J.M.)	12/14/98	IP-Mex-AC	SEMARNAT (Guzmán Sandoval, H.)	09/04/02
104	*Appendix 3: Oficio No. 926/98. Industrial land use authorization for the lot named "La Media Legua" and Subdivision A of the lot named "ONAVEÑO".*	Mayor of Cumpas, Sonora (Hoyos Medina, J.M.)	10/05/98	IP-Mex-AC; IP-Molymex	SEMARNAT (Guzmán Sandoval, H.) and Molymex, S.A. de C.V. (Carvajal Galindo, A.)	09/04/02; 11/15/02
105	*Appendix 4: Official Bulletin No. 13 containing publication of Molymex industrial land use authorization, Oficio No. 926/98.*	Office of the Mayor of Cumpas, Sonora	02/14/00	IP-Mex-AC; IP-Molymex	SEMARNAT (Guzmán Sandoval, H.) and Molymex, S.A. de C.V. (Carvajal Galindo, A.)	09/04/02; 11/15/02
106	Oficio No. 134/02 from Mining Development Branch, actions taken by Executive Branch in the case of Molymex, and response.	Government of Sonora, Ministry of Economic Development and Productivity (Salas Piza, G.)	08/27/02	IP-Mex-GS[7]	Government of the State of Sonora, Ministry of Economic Development and Productivity (Salas Piza, G.)	09/05/02
107	*Appendix 1: Record of agreements and commitments of 23 May 1996 between Molymex and Comité de Protección del Medio Ambiente de Cumpas with the participation of the federal, state, and municipal authorities.*	Molymex, S.A. de C.V. (Carvajal Galindo, A.) and Comité de Protección del Medio Ambiente de Cumpas (Martínez Arvizú, J.)	05/23/96	IP-Mex-GS	Government of the State of Sonora, Ministry of Economic Development and Productivity (Salas Piza, G.)	09/05/02
108	*Appendix 2: Conclusions on night time metal stack emissions (1998). Oficio No. 233/98 to Coprodemac.*	Government of Sonora, Ministry of Economic Development and Productivity (Salas Piza, G.)	10/28/98	IP-Mex-GS	Government of the State of Sonora, Ministry of Economic Development and Productivity (Salas Piza, G.)	09/05/02
109	*Appendix 3: Ambient sulfur dioxide monitoring and epidemiological risk assessment in Cumpas, Sonora, 2000: determination of blood lead levels in preschool and school-age children and adults of the Municipality of Cumpas, Sonora, 2000.*	Paz-A. Enrique, Alvarez-H. Gerardo, Velasco-C. Manuel Mada-V. Gerardo, Navarro-C. René, Ruiz Alfonso	02/00/01	IP-Mex-GS; IP-Molymex	Government of the State of Sonora, Ministry of Economic Development and Productivity (Salas Piza, G.) and Molymex, S.A. de C.V. (Carvajal Galindo, A.)	09/05/02; 11/15/02

6. Information provided by Municipality of Cumpas.
7. Information provided by Mining Development Branch, Government of the State of Sonora.

No.	Document/Appendix	Author	Date mm/dd/yy	ID	Provided to Secretariat by	Received mm/dd/yy
110	*Appendix 4: Environmental recognition award issued to Molymex by the Government of the State of Sonora and SEMARNAT.*	Government of Sonora (Hernández Armenta, J.) and SEMARNAT (Luna Urquídez, J.L.)	06/05/02	IP-Mex-GS	Government of the State of Sonora, Ministry of Economic Development and Productivity (Salas Piza, G.)	09/05/02
111	Oficio UCAI/3925/02 to the CEC with additional information from Profepa for development of the Molymex II factual record.	SEMARNAT (Guzmán Sandoval, H.)	09/02/02	IP-Mex-Profepa[8]	SEMARNAT (Guzmán Sandoval, H.)	09/13/02
112	*Appendix 1: Table of environmental investments by Molymex.*	PROFEPA	1994-2002	IP-Mex-Profepa	SEMARNAT (Guzmán Sandoval, H.)	09/13/02
	Appendix 2:					
113	*List of ISO certificates.*	Molymex, S.A. de C.V. (Carvajal Galindo, A.)	08/16/02	IP-Mex-Profepa	SEMARNAT (Guzmán Sandoval, H.)	09/13/02
114	*ISO 14001 certificate, environmental management system EBE 01066. Validity period: 04/04/2002–31/05/2005*	SGS International Certification Services E.E.S.V. (Anciaux, G.)	04/04/02	IP-Mex-Profepa; IP-Molymex	SEMARNAT (Guzmán Sandoval, H.); Molymex, S.A. de C.V. (Carvajal Galindo, A.)	09/13/02; 10/08/02
115	*ISO 9001:2000 certificate, quality system QBE-97241. Initially certified as of 12/1997. Validity period 11/04/2002–30/04/2005.*	SGS International Certification Services E.E.S.V. (Anciaux, G.)	04/11/02	IP-Mex-Profepa; IP-Molymex	SEMARNAT (Guzmán Sandoval, H.); Molymex, S.A. de C.V. (Carvajal Galindo, A.)	09/13/02; 10/08/02
116	*Clean Industry Award for environmental compliance.*	Government of the State of Sonora and SEMARNAT	06/05/02	IP-Mex-Profepa; IP-Molymex	SEMARNAT (Guzmán Sandoval, H.); Molymex, S.A. de C.V. (Carvajal Galindo, A.)	09/13/02; 10/08/02
117	*Oficio No. BOO.A.A.-D.G.O. 2290/00 to Molymex establishing the term of the Agreement signed with Profepa, i.e., until 28 June 2002.*	PROFEPA (De la Cruz Nogueda, J.)	08/14/00	IP-Mex-Profepa	SEMARNAT (Guzmán Sandoval, H.)	09/13/02
	Appendix 3:					
118	*Oficio No. DGPCA.0604/02 to Director, International Affairs Office, with List of Appendices in relation to the Agreement on Actions Ensuing from the Environmental Audit (Convenio de Concertación de Acciones Resultantes de la Auditoría Ambiental) between Profepa and Molymex S.A. de C.V.*	PROFEPA (Thomas Torres, L.)	08/16/02	IP-Mex-Profepa	SEMARNAT (Guzmán Sandoval, H.)	09/13/02
119	*Letter on information to be submitted to the CEC.*	Molymex, S.A. de C.V. (Carvajal Galindo, A.)	08/19/02	IP-Mex-Profepa	SEMARNAT (Guzmán Sandoval, H.)	09/13/02
120	*Appendix 3a: Agreement and Plan of Works and Activities Ensuing from the Environmental Audit, 25 June 1999, between Profepa and Molymex S.A. de C.V.*	Molymex, S.A. de C.V. (Carvajal Galindo, A.)	08/19/02	IP-Mex-Profepa	SEMARNAT (Guzmán Sandoval, H.)	09/13/02

8. Information provided by Federal Attorney for Environmental Protection (PROFEPA).

No.	Document/Appendix	Author	Date mm/dd/yy	ID	Provided to Secretariat by	Received mm/dd/yy
	Appendix 3b:					
121	*Oficio No. PFPA-DS-SAA-012/2002 Follow-up Inspection Visit Order from Profepa to Molymex.*	PROFEPA (Claussen Iberry, O.)	01/24/02	IP-Mex-Profepa	SEMARNAT (Guzmán Sandoval, H.)	09/13/02
122	*Oficio No. PFPA-DS-SAA-017/2002 attesting that on 6 February 2002, a follow-up visit was conducted to verify compliance with the action plan.*	PROFEPA (Claussen Iberry, O.)	02/11/02	IP-Mex-Profepa	SEMARNAT (Guzmán Sandoval, H.)	09/13/02
123	*Minutes of the working meeting between Profepa and Molymex S.A. de C.V. to review the environmental audit files for the latter's facilities.*	SEMARNAT (Bustamante Cerda, A.)	02/06/02	IP-Mex-Profepa	SEMARNAT (Guzmán Sandoval, H.)	09/13/02
124	*Oficio No. PFPA-DS-SAA-313/2001 attesting that on 21 November 2001, a follow-up visit to Molymex facilities was conducted to verify compliance with the action plan.*	PROFEPA (Claussen Iberry, O.)	11/23/01	IP-Mex-Profepa	SEMARNAT (Guzmán Sandoval, H.)	09/13/02
125	*Minutes of the working meeting between Profepa and Molymex S.A. de C.V. to review the environmental audit files for the latter's facilities.*	SEMARNAT (Bustamante Cerda, A.)	11/21/01	IP-Mex-Profepa	SEMARNAT (Guzmán Sandoval, H.)	09/13/02
	Appendix 3c:					
126	*Oficio PFPA-DS-SJ-0281/2002 Administrative Decision without sanction, Administrative File No. 202/2001 and official notice.*	PROFEPA (Claussen Iberry, O.)	03/19/02	IP-Mex-Profepa	SEMARNAT (Guzmán Sandoval, H.)	09/13/02
127	*Oficio PFPA-DS-SJ-0586/2001 Administrative Decision without sanction, Administrative File No. 20/2001 and official notice.*	PROFEPA (Claussen Iberry, O.)	03/11/02	IP-Mex-Profepa	SEMARNAT (Guzmán Sandoval, H.)	09/13/02
	Appendix 3d:					
128	*Oficio No. S.A.A.-D.G.O.C.A.-0870/02 concluding the commitments acquired as a result of the Coordination Agreement of 25 June 1999 between Profepa and Molymex, S.A. de C.V.*	PROFEPA (Álvarez Larrauri, L.R.)	06/03/02	IP-Mex-Profepa	SEMARNAT (Guzmán Sandoval, H.)	09/13/02
129	*Note on Clean Industry Certificate to Molymex, S.A. de C.V.*	PROFEPA (Álvarez Larrauri, L.R.)	03/11/02	IP-Mex-Profepa	SEMARNAT (Guzmán Sandoval, H.)	09/13/02
130	*Note confirming to Molymex that the company is being awarded the Clean Industry Certificate.*	PROFEPA (Álvarez Larrauri, L.R.)	06/03/02	IP-Mex-Profepa	SEMARNAT (Guzmán Sandoval, H.)	09/13/02
131	*Appendix 3e: Oficio No. S.A.A.-D.G.O.C.A. – 0226/02 to Profepa Officer in State of Sonora requesting various information on Molymex.*	PROFEPA (Álvarez Larrauri, L.R.)	02/18/02	IP-Mex-Profepa	SEMARNAT (Guzmán Sandoval, H.)	09/13/02
132	*Appendix 3f: Oficio No. PFPA-DS-SAA-030/2002 to Director, Audit Operation and Control, Office of the Deputy Attorney for Environmental Auditing (Subprocuraduría de Auditoría Ambiental), providing the information requested.*	PROFEPA Office in Sonora (Claussen Iberry, O.)	03/04/02	IP-Mex-Profepa	SEMARNAT (Guzmán Sandoval, H.)	09/13/02

No.	Document/Appendix	Author	Date mm/dd/yy	ID	Provided to Secretariat by	Received mm/dd/yy
133	Complaint filed with Director, Environmental Complaints, Profepa, informing latter of sampling conducted and observations.	Heras Durán, A.	09/26/02	n/a	Heras Durán, A.	10/01/02
134	Oficio No. D-0020/2001-220238 to Alianza Cívica with report of results of sampling conducted in Cumpas, Sonora; locator map of Molymex and air quality monitoring stations; and information on molybdenum toxicology.	SEMARNAT, Sonora Office (Luna Urquídez, J.L.)	05/17/01	IP-Mex-Semarnat-D.Sonora	SEMARNAT, Sonora Office (Luna Urquídez, J.L.)	10/08/02
135	Report of results of sampling conducted in Cumpas, Sonora; locator map of Molymex and air quality monitoring stations; and information on molybdenum toxicology.	SEMARNAT (Gutiérrez Avedoy, V.J.)	undated	IP-Mex-Semarnat-D.Sonora	SEMARNAT, Sonora Office (Luna Urquídez, J.L.)	10/08/02
136	Shipping document for shipping of molybdenum concentrate imported from Japan into Mexico.	Locher Evers International (Locher, C.)	04/15/02	n/a	Heras Durán, A.	10/08/02
137	Letter to United States Customs requesting names of companies exporting molybdenum raw materials for processing by Molymex plant.	COPRODEMAC (Heras-Duran, A.)	03/01/02	n/a	Heras Durán, A.	10/08/02
138	Response by United States Customs Service, document No. FOI 02-2600-0003 to Coprodemac.	Arizona Customs Management Center (Sweeney, B.)	03/15/02	n/a	Heras Durán, A.	10/08/02
139	Public complaint filed with Federal Justice Department (Ministerio Público Federal).	Asociación de Organismos No Gubernamentales del Estado de Sonora (O'Leary Franco, R.M; Pavlovich Robles, F.; Gutiérrez Mendívil, D.)	03/18/02	n/a	Heras Durán, A.	10/08/02
140	Request to Notary Public of Cumpas to certify that Molymex is producing continuous night time emissions of smoke and gases from the metal stack, which lacks any filtering device, and that said emissions originate directly from its furnaces.	COPRODEMAC (Heras-Durán, A.; Montaño Frisby, V.; Hoyos García, J.M.)	09/02/02	n/a	Heras Durán, A.	10/08/02
141	Attestation that the Notary Public of Cumpas refused to notarize a document presented to him stating that Molymex is in violation of Mexican environmental law by emitting toxic gas and smoke from its metal stack.	COPRODEMAC (Heras-Durán, A.; Montaño Frisby, V.; Hoyos García, J.M.; Hernández Hernández, B.; Córdova Vásquez, J.M.; Vega Germán, M.)	09/02/02	n/a	Heras Durán, A.	10/08/02
142	List of signatures of residents of the Municipality of Cumpas who assert that the Government of Mexico is failing to effectively enforce its environmental law with respect to the molybdenum plant operated by Molymex.	COPRODEMAC (Gallego Quintero, A.)	10/09/02	n/a	Heras Durán, A.	10/08/02
143	Letter to the CEC complaining of the situation in Cumpas caused by Molymex's actions.	n/a	10/00/02	n/a	COPRODEMAC (Heras Durán, A.)	10/08/02

No.	Document/Appendix	Author	Date mm/dd/yy	ID	Provided to Secretariat by	Received mm/dd/yy
144	Video of sampling of Molymex stack emissions.	COPRODEMAC (Gallego Quintero, A.)	04/00/98	n/a	COPRODEMAC (Heras Durán, A.)	10/08/02
145	Video: Sampling and Molymex stack emissions. Meeting with authorities, 1998.	COPRODEMAC (Gallego Quintero, A.)	04/28/98	n/a	COPRODEMAC (Heras Durán, A.)	10/08/02
146	Video of demonstration in front of Molymex, arrest of NGO leaders on 19 December 1999, expansion of Molymex in July 2000 and demonstration on Environment Day 2000.	COPRODEMAC (Gallego Quintero, A.)	12/18/99	n/a	COPRODEMAC (Heras Durán, A.)	10/08/02
147	Document to Governor of the State of Sonora demanding the immediate closing and relocation of Molymex.	COPRODEMAC	01/23/00	n/a	COPRODEMAC (Heras Durán, A.)	10/08/02
148	Letter to Coprodemac stating opinion on soil analysis results obtained by the XRF method and sent by Coprodemac; various Internet articles relating to molybdenum toxicity.	University of Arizona, Department of Soil, Water, and Environmental Science (Artiola, J.)	06/06/00	n/a	COPRODEMAC (Heras Durán, A.)	10/08/02
149	Various newspaper articles.	COPRODEMAC	12/22/99	n/a	COPRODEMAC (Heras Durán, A.)	10/08/02
150	Video on Molymex smoke in Cumpas.	COPRODEMAC (Heras Durán, A.)	02/15/02	n/a	COPRODEMAC (Heras Durán, A.)	10/08/02
151	Report on application of resources provided by Molymex, 1997–2000.	Municipality of Cumpas, Sonora (Hoyos Medina, J.)	09/00/99	n/a	Molymex, S.A. de C.V. (Carvajal Galindo, A.)	10/08/02
152	Molymex pamphlets – Sustainable Development – Molybdenum and Sulfuric Acid.	Molymex, S.A. de C.V. (Carvajal Galindo, A.)	03/00/02	n/a	Molymex, S.A. de C.V. (Carvajal Galindo, A.)	10/08/02
153	Bimonthly newsletter, El Amanecer Serrano, Molymex plant public relations, July 2001.	Molymex, S.A. de C.V. (Carvajal Galindo, A.)	07/00/01	n/a	Molymex, S.A. de C.V. (Carvajal Galindo, A.)	10/08/02
154	Bimonthly newsletter, El Amanecer Serrano, Molymex plant public relations, August 2002.	Molymex, S.A. de C.V. (Carvajal Galindo, A.)	08/00/02	n/a	Molymex, S.A. de C.V. (Carvajal Galindo, A.)	10/08/02
155	Bimonthly newsletter, El Amanecer Serrano, Molymex plant public relations, December 2001.	Molymex, S.A. de C.V. (Carvajal Galindo, A.)	12/00/01	n/a	Molymex, S.A. de C.V. (Carvajal Galindo, A.)	10/08/02
156	Clean Industry Certificate No. O/I/26/089 pursuant to LGEEPA Article 38 Bis Paragraph IV.	PROFEPA (Campillo García, J.)	07/10/02	n/a	Molymex, S.A. de C.V. (Carvajal Galindo, A.)	10/08/02
157	Newsletter of the International Molybdenum Association, London, United Kingdom.	International Molybdenum Association	07/00/02	n/a	Molymex, S.A. de C.V. (Carvajal Galindo, A.)	10/08/02
158	Photos of the Molymex plant.	Molymex, S.A. de C.V. (Carvajal Galindo, A.)	undated	n/a	Molymex, S.A. de C.V. (Carvajal Galindo, A.)	10/08/02
159	Documentation filed with the CEC for the Molymex II factual record – Molymex vs. Cumpas, presentation with 4 photos and photocopies of local newspaper articles on Molymex in Cumpas, Sonora.	Ciudadanos por el Cambio Democrático (Baldenegro, L.L.; O'Leary, R.M.)	10/10/02	IP-CCD	COPRODEMAC (Baldenegro, L.L.; O'Leary, R.M.)	10/10/02

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	Section 1 (CDE):					
160	Oficio No. DS.139-4-SPA-1449 to Molymex giving notice of amendments to operating license, issued in Oficio No. DS.139-4-SPA-126 of 11 February 1994, by Sonora Office.	Ministry of Social Development, Sonora Office (Chávez Méndez, E.)	05/27/94	IP-CCD	COPRODEMAC (Baldenegro, L.L.; O'Leary, R.M.)	10/10/02
161	Letter to SEMARNAP Federal Officer in Sonora supplemental to Oficio No. DCA-IX-010-/96.	Molymex, S.A. de C.V.	10/04/96	IP-CCD	COPRODEMAC (Baldenegro, L.L.; O'Leary, R.M.)	10/10/02
162	Oficio No. 001 from Coprodemac to SEMARNAP with conditions for siting of Molymex in Cumpas.	COPRODEMAC (Gallego Quintero, A.)	10/04/96	IP-CCD	COPRODEMAC (Baldenegro, L.L.; O'Leary, R.M.)	10/10/02
163	Oficio No. DS-SMA-UNE-LF-500 to Molymex. Environmental impact assessment for Molymex operating license – Results of technical assessment.	SEMARNAP, Office in Sonora (Gandara Camou, E.)	04/03/96	IP-CCD	COPRODEMAC (Baldenegro, L.L.; O'Leary, R.M.)	10/10/02
164	Oficio No. 6. List of proposals of priority works and signed agreement in which Molymex undertakes to perform the agreement under terms set by the environmental and health authorities.	COPRODEMAC (Gallego Quintero, A.)	05/23/96	IP-CCD	COPRODEMAC (Baldenegro, L.L.; O'Leary, R.M.)	10/10/02
165	Application for authorization to SEMARNAP Office in Sonora to conduct testing of all systems, equipment, facilities and personnel of the Molymex plant.	COPRODEMAC (Gallego Quintero, A.)	03/14/97	IP-CCD	COPRODEMAC (Baldenegro, L.L.; O'Leary, R.M.)	10/10/02
166	Oficio No. DS-SMA-UNE-CM-591 to Molymex, S.A. de C.V. Response on report of ambient air quality monitoring of May 1997.	SEMARNAP, Office in Sonora (Gandara Camou, E.)	06/20/97	IP-CCD	COPRODEMAC (Baldenegro, L.L.; O'Leary, R.M.)	10/10/02
167	Oficio No. DFS-D-0114-97 to Molymex authorizing the testing period under the terms indicated.	SEMARNAP, Office in Sonora (Gandara Camou, E.)	04/10/97	IP-CCD	COPRODEMAC (Baldenegro, L.L.; O'Leary, R.M.)	10/10/02
168	Oficio No. DS-SMA-UNE-CM-454 proceeding with the environmental contingency plan during the testing period, epidemiological monitoring program, and siting of mobile air quality monitoring station.	SEMARNAP, Office in Sonora (Gandara Camou, E.)	04/25/97	IP-CCD	COPRODEMAC (Baldenegro, L.L.; O'Leary, R.M.)	10/10/02
169	Oficio 0013 to Ministry of Public Health, State of Sonora, requesting result of toxic chemical study of industrial waste from Molymex plant in Cumpas, Sonora.	COPRODEMAC (Gallego Quintero, A.)	08/31/97	IP-CCD	COPRODEMAC (Baldenegro, L.L.; O'Leary, R.M.)	10/10/02
170	Oficio No. DS-SMA-UNE-CM-879 to Molymex attesting that the SO_2 and PM_{10} concentrations for the month of September 1997 as measured at the Ojo de Agua, Teonadepa, Cumpas and mobile stations are within the limits set out in standards NOM-022-SSA1-1993 and NOM-025-SSA1-1993.	SEMARNAP, Federal Office in Sonora (Gandara Camou, E.)	10/16/97	IP-CCD	COPRODEMAC (Baldenegro, L.L.; O'Leary, R.M.)	10/10/02

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171	Oficio No. DS-SMA-UNE-CM-940 to Molymex attesting that the SO_2 and PM_{10} concentrations for the month of October 1997 as measured at the Ojo de Agua, Teonadepa, Cumpas and mobile stations are within the limits set out in standards NOM-022-SSA1-1993 and NOM-025-SSA1-1993.	SEMARNAP, Federal Office in Sonora (Gandara Camou, E.)	11/28/97	IP-CCD	COPRODEMAC (Baldenegro, L.L.; O'Leary, R.M.)	10/10/02
172	Document produced by Coprodemac after a civic meeting at which the mining/metallurgical complex of the Molymex plant was rejected.	COPRODEMAC (Gallego Quintero, A.)	03/19/98	IP-CCD	COPRODEMAC (Baldenegro, L.L.; O'Leary, R.M.)	10/10/02
173	Oficio No. 437/98 to Coprodemac, result of meeting of the representatives of the state government, SEMARNAP, Profepa and the Ministry of Health with the Mayor of Cumpas, Sonora.	Office of the Mayor of Cumpas, Sonora (Hoyos Medina, J.M.)	05/06/98	IP-CCD	COPRODEMAC (Baldenegro, L.L.; O'Leary, R.M.)	10/10/02
174	Request to Office of the Mayor of Cumpas, Sonora that he arrange a hearing with the state governor in order to resolve the problems with Molymex.	COPRODEMAC (Gallego Quintero, A.)	05/07/98	IP-CCD	COPRODEMAC (Baldenegro, L.L.; O'Leary, R.M.)	10/10/02
175	Oficio No. DS-SMA-UNE-CM-476 giving notice that the Sonora Federal Office will validate the air quality reports in the Municipality of Cumpas until a review of the operation and maintenance of the monitors is conducted.	SEMARNAP (Gandara Camou, E.)	05/08/98	IP-CCD	COPRODEMAC (Baldenegro, L.L.; O'Leary, R.M.)	10/10/02
176	Oficio No. SG-06-06 to SEMARNAP officer on SINALP laboratory assessment.	Molymex, S.A. de C.V. (Carvajal Galindo, A.)	06/05/98	IP-CCD	COPRODEMAC (Baldenegro, L.L.; O'Leary, R.M.)	10/10/02
177	Results of CRETIB test No. 803604 for Molymex.	Laboratory of Grupo Microanálisis, S.A. de C.V. (Hernández, N.; Escobar M., R.)	06/05/98	IP-CCD	COPRODEMAC (Baldenegro, L.L.; O'Leary, R.M.)	10/10/02
178	Invitation to the residents of Cumpas to support Coprodemac against Molymex.	COPRODEMAC (Gallego Quintero, A.)	undated	IP-CCD	COPRODEMAC (Baldenegro, L.L.; O'Leary, R.M.)	10/10/02
179	Oficio No. 0017 to SEMARNAP Federal Officer in Sonora requesting a meeting with the officials and ministers of the state and federal bodies (SEMARNAP, Profepa, Health, and state government).	COPRODEMAC (Gallego Quintero, A.)	03/12/98	IP-CCD	COPRODEMAC (Baldenegro, L.L.; O'Leary, R.M.)	10/10/02
180	Cumpas residents' declaration of support for Coprodemac.	COPRODEMAC (Gallego Quintero, A.)	04/07/98	IP-CCD	COPRODEMAC (Baldenegro, L.L.; O'Leary, R.M.)	10/10/02
181	Request to the Mayor of Cumpas that all the officials responsible for each ministry and agency make an appearance.	COPRODEMAC (Gallego Quintero, A.)	04/22/98	IP-CCD	COPRODEMAC (Baldenegro, L.L.; O'Leary, R.M.)	10/10/02
182	Application to Chief of Police of Cumpas to hold demonstrations in protest against Molymex.	COPRODEMAC (Gallego Quintero, A.)	04/23/98	IP-CCD	COPRODEMAC (Baldenegro, L.L.; O'Leary, R.M.)	10/10/02

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183	Petition to Mayor of Cumpas to meet with the governmental entities of Sonora, SEMARNAP, Ministry of Health, and Profepa.	COPRODEMAC (Gallego Quintero, A.)	04/27/98	IP-CCD	COPRODEMAC (Baldenegro, L.L.; O'Leary, R.M.)	10/10/02
184	Request to SEMARNAP State Officer for a copy of the Molymex operating license.	COPRODEMAC (Gallego Quintero, A.)	04/30/98	IP-CCD	COPRODEMAC (Baldenegro, L.L.; O'Leary, R.M.)	10/10/02
185	Letter to Mayor of Cumpas asking that he request that the Governor of Sonora visit Cumpas and enforce the LGEEPA and its air pollution prevention and control regulation.	COPRODEMAC (Gallego Quintero, A.)	04/30/98	IP-CCD	COPRODEMAC (Baldenegro, L.L.; O'Leary, R.M.)	10/10/02
186	Oficio No. 054-90 to Assistant General Manager of Molymex giving notice of decision to grant industrial land use permit.	Office of the Mayor of Cumpas (Hoyos Medina, J.)	09/07/98	IP-CCD	COPRODEMAC (Baldenegro, L.L.; O'Leary, R.M.)	10/10/02
187	Oficio No. 001 to National Institute of Ecology (Instituto Nacional de Ecología) explaining the problems that the residents of Cumpas have with Molymex.	COPRODEMAC (Gallegos Quintero, A.)	10/04/98	IP-CCD	COPRODEMAC (Baldenegro, L.L.; O'Leary, R.M.)	10/10/02
188	Request for support from the SEMARNAP Federal Officer to send information to the National Institute of Ecology on the environmental problems existing in Cumpas as a result of the operation of the Molymex plant.	COPRODEMAC (Gallego Quintero, A.)	11/05/98	IP-CCD	COPRODEMAC (Baldenegro, L.L.; O'Leary, R.M.)	10/10/02
189	Request to Mayor of Cumpas to exhibit to Coprodemac the land use permit obtained by Molymex.	COPRODEMAC (Gallegos Quintero, A.)	10/25/98	IP-CCD	COPRODEMAC (Baldenegro, L.L.; O'Leary, R.M.)	10/10/02
190	Oficio No. PFPA-DS-UDQ-649/99 File No. 9601/002/2623 on request for certified copies of the memo by Patricia Celis Salgado, biologist.	PROFEPA, Office in Sonora (Morachis López, R.)	12/09/99	IP-CCD	COPRODEMAC (Baldenegro, L.L.; O'Leary, R.M.)	10/10/02
191	Report on the problems associated with the Molymex company, located in Cumpas.	PROFEPA, Office in Sonora (Celis Salgado, P.)	04/01/95	IP-CCD	COPRODEMAC (Baldenegro, L.L.; O'Leary, R.M.)	10/10/02
192	Oficio No. SSS-DGRFS-00-239 Sanitary inspection visit to Molymex.	Sonora Health Services (Reyes Salazar, G.A.)	02/28/00	IP-CCD	COPRODEMAC (Baldenegro, L.L.; O'Leary, R.M.)	10/10/02
193	Oficio No. DS-UAJ-033/2000 to Director, Legal Affairs, Government of the State of Sonora, with legal information on Molymex in Cumpas.	SEMARNAP, Office in Sonora (Ruiz Rubio, J.C.)	04/17/00	IP-CCD	COPRODEMAC (Baldenegro, L.L.; O'Leary, R.M.)	10/10/02
194	Press release: "Inauguración de la Planta de Ácido Sulfúrico de Molymex por el Gobernador" (Governor inaugurates Molymex sulfuric acid plant).	Government of the State of Sonora	03/19/02	IP-CCD	COPRODEMAC (Baldenegro, L.L.; O'Leary, R.M.)	10/10/02
195	Invitation to the inaugural ceremony for the Cumpas sulfuric acid plant.	Government of the State of Sonora	03/00/02	IP-CCD	COPRODEMAC (Baldenegro, L.L.; O'Leary, R.M.)	10/10/02

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196	Communications denouncing Molymex.	n/a	undated	IP-CCD	COPRODEMAC (Baldenegro, L.L.; O'Leary, R.M.)	10/10/02
	Section 2:					
197	Oficio No.: SSP/DGSS-97 File No. 0000744 to SEMARNAP State Officer in Sonora in relation to the epidemiological monitoring activities and a descriptive report of epidemiological patterns of acute respiratory infection in two rural communities of Sonora 1994–1996, produced by the Ministry of Public Health in response to a request from Coprodemac.	Government of the State of Sonora (Rivera Claisse, E.)	09/09/97	IP-CCD	COPRODEMAC (Baldenegro, L.L.; O'Leary, R.M.)	10/10/02
198	Sanitary license No.97-AR39E held by Molymex.	Ministry of Public Health (Ruibal Corella, J.A.)	09/10/97	IP-CCD	COPRODEMAC (Baldenegro, L.L.; O'Leary, R.M.)	10/10/02
199	Oficio No. 00157 File No. SSP/DGSS/2000 to Minister of Government (Secretario de Gobierno) with the list of actions that the analysis group of the Ministry of Public Health suggests as avenues for future work.	Health Services Branch, State of Sonora (Linares Negrete, M.R.)	02/28/00	IP-CCD	COPRODEMAC (Baldenegro, L.L.; O'Leary, R.M.)	10/10/02
200	Medical diagnosis.	Centro Médico Nacozari (Pérez, V.)	10/30/96	IP-CCD	COPRODEMAC (Baldenegro, L.L.; O'Leary, R.M.)	10/10/02
201	File No. SSP/DGSS-98 to Justice Department officer with statistical information on the principal causes of mortality and mortality rates.	Health Services Branch, State of Sonora (Linares Negrete, M.R.)	06/09/98	IP-CCD	COPRODEMAC (Baldenegro, L.L.; O'Leary, R.M.)	10/10/02
202	Letter to Governor of the State of Sonora in which the people of Cumpas demand the enforcement of the environmental laws, primarily, the full extent of Article 34 so as to deny authorization for the Molymex expansion.	COPRODEMAC (Gallego Quintero, A.)	09/02/98	IP-CCD	COPRODEMAC (Baldenegro, L.L.; O'Leary, R.M.)	10/10/02
203	Letter to Minister of Health of the State of Sonora and Director of the Cumpas Health Center requesting a public meeting for delivery of a general report to the community of Cumpas on human health harm caused by sulfur dioxide and suspended solid particle pollution, and to present in writing the epidemiological monitoring activities so as to precisely establish a cause-effect relationship between the air pollution in Cumpas and the possible harm to public health noted in Oficio SSP/DGSS-97.	COPRODEMAC (Community of Cumpas, Sonora)	03/01/99	IP-CCD	COPRODEMAC (Baldenegro, L.L.; O'Leary, R.M.)	10/10/02
204	26 health reports on blood lead levels in the residents of Cumpas and 5 pages of photos of the persons in question.	Ministry of Public Health, Epidemiology Division	02/25/00	IP-CCD	COPRODEMAC (Baldenegro, L.L.; O'Leary, R.M.)	10/10/02

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	Section 3:					
205	Document to Legislative Assembly, Second Commission on Ecology and Environment and First Commission on Public Assistance and Health, Congress of the State of Sonora.	Congress of Sonora	11/11/99	IP-CCD	COPRODEMAC (Baldenegro, L.L.; O'Leary, R.M.)	10/10/02
206	Technical report on citizen complaint requesting total and final closing of Molymex.	PROFEPA (Maytorena Fontes, F.)	11/22/99	IP-CCD	COPRODEMAC (Baldenegro, L.L.; O'Leary, R.M.)	10/10/02
207	Certification that technical report is a true copy of the original filed under No. 9601/002/2623 of the Petitions and Complaints Unit (Unidad de Denuncias and Quejas).	PROFEPA–Sonora (Morachis López, J.R.)	12/09/99	IP-CCD	COPRODEMAC (Baldenegro, L.L.; O'Leary, R.M.)	10/10/02
208	Newspaper articles (3) on Molymet case in Chile and e-mail from Alianza por una Mejor Calidad de Vida, RAP-Chile.	n/a	05/00/00	IP-CCD	COPRODEMAC (Baldenegro, L.L.; O'Leary, R.M.)	10/10/02
209	Request for information on Molymet in Chile.	Alianza por una mejor calidad de vida, RAP-Chile (Rozas de García de la Huerta, M.E.)	03/04/00	IP-CCD	COPRODEMAC (Baldenegro, L.L.; O'Leary, R.M.)	10/10/02
	Section 4:					
210	Agricultural complaints. Estimates of impact caused by sulfur dioxide pollutants from copper smelting operations on agriculture in Sonora, Mexico.	Border Ecology Project (Williams, W.)	04/00/86	IP-CCD	COPRODEMAC (Baldenegro, L.L.; O'Leary, R.M.)	10/10/02
211	Letter of support for Coprodemac.	Sociedad de Praderas "Los Cuervos" del Ejido de Cumpas	05/02/98	IP-CCD	COPRODEMAC (Baldenegro, L.L.; O'Leary, R.M.)	10/10/02
212	Petition of support for Coprodemac.	Residents of Los Hoyos Ejido	05/03/98	IP-CCD	COPRODEMAC (Baldenegro, L.L.; O'Leary, R.M.)	10/10/02
213	Community agricultural complaint to SEMARNAP and Profepa.	COPRODEMAC	10/05/98	IP-CCD	COPRODEMAC (Baldenegro, L.L.; O'Leary, R.M.)	10/10/02
	Section 5:					
214	Petition to Governor of the State of Sonora regarding Molymex with 4 pages of additional signatures.	Southern Arizona People's Law Center, Tucson, Arizona (Broce, M.)	02/05/00	IP-CCD	COPRODEMAC (Baldenegro, L.L.; O'Leary, R.M.)	10/10/02
215	Petition on Molymex to President of the United Mexican States.	Southern Arizona People's Center, Tucson, Arizona, USA (Broce, M.)	03/25/00	IP-CCD	COPRODEMAC (Baldenegro, L.L.; O'Leary, R.M.)	10/10/02
216	Report, "Pollution and International Capital in the Sonora Desert: The Molymex Plant at Cumpas".	DataCenter	02/00/00	IP-CCD	COPRODEMAC (Baldenegro, L.L.; O'Leary, R.M.)	10/10/02
217	Oficio No. SG-019-2000 Response to Southern Arizona People's Law Center of Tucson, Arizona.	Ministry of Government, State of Sonora (Vucovich, O.)	02/14/00	IP-CCD	COPRODEMAC (Baldenegro, L.L.; O'Leary, R.M.)	10/10/02

No.	Document/Appendix	AUTHOR	DATE mm/dd/yy	ID	Provided to Secretariat by	Received mm/dd/yy
	Section 6:					
218	"Determination of molybdenum contamination in soils in the vicinity of Cumpas, Sonora" along with Oficio IC184/2000.	Division of Engineering, Universidad de Sonora (Moreno Turrent, M.; Tiburcio Munive, G.)	10/15/00	IP-CCD; IP-Molymex	COPRODEMAC (Baldenegro, L.L.; O'Leary, R.M.) and Molymex (Carvajal Galindo, A.)	10/10/02; 11/25/02
219	"Determination of blood lead levels in preschool and school-aged children and adults in the Municipality of Cumpas, Sonora".	Ministry of Public Health of Sonora	03/00/02	IP-CCD	COPRODEMAC (Baldenegro, L.L.; O'Leary, R.M.)	10/10/02
	Section 7:					
220	Analysis of molybdenum concentration.	Kennecott Utah Copper Corporation	11/28/95	IP-CCD	COPRODEMAC (Baldenegro, L.L.; O'Leary, R.M.)	10/10/02
221	Articles on Molymex.	Various newspapers	07/18/02	IP-CCD	COPRODEMAC (Baldenegro, L.L.; O'Leary, R.M.)	10/10/02
222	Letter of complaint to Director of *El Imparcial.*	(Quijada Abril, H.)	16/12/02	IP-CCD	COPRODEMAC (Baldenegro, L.L.; O'Leary, R.M.)	10/10/02
223	Propaganda against Molymex.	Comité Pro Medio Ambiente de Cumpas	undated	IP-CCD	COPRODEMAC (Baldenegro, L.L.; O'Leary, R.M.)	10/10/02
224	Letter to "Programa detrás de la noticia" (Behind the News program) requesting denial of support for the installation of furnaces at the Molymex plant.	COPRODEMAC (Gallego Quintero, A.)	06/00/98	IP-CCD	COPRODEMAC (Baldenegro, L.L.; O'Leary, R.M.)	10/10/02
225	Propaganda against Molymex.	COPRODEMAC (O'Leary de Lizárraga, R.M.)	undated	IP-CCD	COPRODEMAC (Baldenegro, L.L.; O'Leary, R.M.)	10/10/02
226	Letter requesting help in the case against Molymex from the group "Entre Líneas".	COPRODEMAC	06/00/98	IP-CCD	COPRODEMAC (Baldenegro, L.L.; O'Leary, R.M.)	10/10/02
227	Press Bulletin No. 20/99 of the Academia Sonorense de Derechos Humanos, A.C. regarding Molymex	Academia Sonorense de Derechos Humanos, A.C. (Gutiérrez Mendívil, D.)	12/11/99	IP-CCD	COPRODEMAC (Baldenegro, L.L.; O'Leary, R.M.)	10/10/02
228	Text titled "Defiende la salud desde una cárcel" (Defending health from a jail cell).	COPRODEMAC (O'Leary de Lizárraga, R.M.)	12/24/99	IP-CCD	COPRODEMAC (Baldenegro, L.L.; O'Leary, R.M.)	10/10/02
229	Letter to people of Sonora against Molymex.	Alianza por Sonora	12/22/99	IP-CCD	COPRODEMAC (Baldenegro, L.L.; O'Leary, R.M.)	10/10/02
230	Letter of support to people of Cumpas against Molymex.	Various Mexican groups	12/00/99	IP-CCD	COPRODEMAC (Baldenegro, L.L.; O'Leary, R.M.)	10/10/02
231	Request to Governor of the State of Sonora for immediate closing and subsequent relocation of Molymex.	COPRODEMAC	01/23/00	IP-CCD	COPRODEMAC (Baldenegro, L.L.; O'Leary, R.M.)	10/10/02

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232	Press Bulletin No. 04/2000 "Ordenan al Municipio de Cumpas Resolver sobre Petición de Clausura de Molymex" (Order to Municipality of Cumpas to resolve petition to close Molymex)	Academia Sonorense de Derechos Humanos, A.C. (Gutiérrez Mendívil, D.)	01/31/00	IP-CCD	COPRODEMAC (Baldenegro, L.L.; O'Leary, R.M.)	10/10/02
233	Letter to the people of Cumpas against Molymex.	COPRODEMAC	undated	IP-CCD	COPRODEMAC (Baldenegro, L.L.; O'Leary, R.M.)	10/10/02
234	Letter to the President of Mexico, the Governor of the State of Sonora, and the federal, state, and municipal authorities requesting a final closing order for the Molymex plant.	Various Mexican groups	07/00/00	IP-CCD	COPRODEMAC (Baldenegro, L.L.; O'Leary, R.M.)	10/10/02
235	Letter to domestic and foreign physicians and medical workers.	Asociación de Organismos no Gubernamentales del Estado de Sonora	10/18/01	IP-CCD	COPRODEMAC (Baldenegro, L.L.; O'Leary, R.M.)	10/10/02
236	Letter to Luisa Durán de Lagos against Molymex.	COPRODEMAC (O'Leary de Lizárraga, R.M.)	10/29/01	IP-CCD	COPRODEMAC (Baldenegro, L.L.; O'Leary, R.M.)	10/10/02
237	Request to Governor of the State of Sonora to respond to the demands of the residents of Cumpas, respect the NGOs of Cumpas and Hermosillo.	Southern Arizona People's Law Center, Tucson, Arizona	02/05/00	IP-CCD	COPRODEMAC (Baldenegro, L.L.; O'Leary, R.M.)	10/10/02
238	Press Bulletin No. 11/2000, "Molymet-Chile será reubicada por ser un peligroso foco de contaminación" (A dangerous pollution source, Molymet-Chile will be relocated).	Academia Sonorense de Derechos Humanos, A.C. (Gutiérrez Mendívil, D.)	05/12/00	IP-CCD	COPRODEMAC (Baldenegro, L.L.; O'Leary, R.M.)	10/10/02
239	Letter to Television News reporting the cases of two children with blood lead contamination.	Medina de González, A.	03/13/01	IP-CCD	COPRODEMAC (Baldenegro, L.L.; O'Leary, R.M.)	10/10/02
240	Letter to Television News reporting the cases of three children with blood lead contamination.	Grijalva de Hoyos, D.	03/12/01	IP-CCD	COPRODEMAC (Baldenegro, L.L.; O'Leary, R.M.)	10/10/02
241	Letters to Television News requesting their help with the problem in Cumpas.	Grijalva, R.; de Abril, M.A.	03/12/01	IP-CCD	COPRODEMAC (Baldenegro, L.L.; O'Leary, R.M.)	10/10/02
242	Six letters to Television News requesting help with the problem in Cumpas.	de Grijalva, L.; Ramos de Hoyos, L.; Bremont, B.; De Gallego, E.; López Martínez, A.; Montaño de Montijo, M.	03/13/01	IP-CCD	COPRODEMAC (Baldenegro, L.L.; O'Leary, R.M.)	10/10/02
243	Oficio DG/004/DI/0795/2001 in response to letter from Rosa María O'Leary Franco on Molymex.	PROFEPA (Gómez Rodríguez, J.A.)	08/23/01	IP-CCD	COPRODEMAC (Baldenegro, L.L.; O'Leary, R.M.)	10/10/02
244	Comments to the Environmental Petitions, Complaints, and Social Participation Branch (*Dirección General de Denuncias Ambientales, Quejas y Participación Social*).	Ciudadanos por el Cambio Democrático (O'Leary de Lizárraga, R.M.)	undated	IP-CCD	COPRODEMAC (Baldenegro, L.L.; O'Leary, R.M.)	10/10/02

No.	Document/Appendix	Author	Date mm/dd/yy	ID	Provided to Secretariat by	Received mm/dd/yy
245	Letter to Molibdenos y Metales on behalf of the residents of Cumpas, Sonora.	Asociación de organismos no gubernamentales del estado de Sonora (O'Leary de Lizárraga, R.M.)	10/29/01	IP-CCD	COPRODEMAC (Baldenegro, L.L.; O'Leary, R.M.)	10/10/02
246	"Small Sonoran Community In Danger From Smelter!"	Southern Arizona Alliance for Economic Justice	undated	IP-CCD	COPRODEMAC (Baldenegro, L.L.; O'Leary, R.M.)	10/10/02
247	Certified copy of criminal proceeding No. 13/2002 and *amparo* proceeding No. 26/200, complaint action filed.	Academia Sonorense de Derechos Humanos, A.C. (Gutiérrez Mendívil, D.)	10/10/02	n/a	Academia Sonorense de Derechos Humanos, A.C. (Gutiérrez Mendívil, D.)	10/10/02
248	Manuscript of speech in Cumpas and copy of complaint sent to Director, Environmental Complaints, PROFEPA.	Heras Durán, A.	10/30/02	n/a	COPRODEMAC (Heras Durán, A.)	11/01/02
249	Complaint to Director, Environmental Complaints, PROFEPA that wastewater from Molymex is dumped into the Cumpas oxidation lagoon.	COPRODEMAC (Heras Durán, A.)	03/27/02	n/a	COPRODEMAC (Heras Durán, A.)	11/01/02
250	Oficio No. DG/004/DI/0494/2002. File No. 0203/068/DI/26 stating that the complaint has been recorded in the Citizen Complaint Response System (*Sistema de Atención a la Denuncia Popular*) and that it was relayed to the National Water Commission Branch (*Dirección General de la Comisión Nacional del Agua*).	PROFEPA (Villar Alvelais, E.)	04/19/02	n/a	COPRODEMAC (Heras Durán, A.)	11/01/02
251	Photos of vegetation in the vicinity of Molymex.	COPRODEMAC (Heras Durán, A.)	02/16/02	n/a	COPRODEMAC (Heras Durán, A.)	11/01/02
252	Information submitted for the development of the draft factual record on submission SEM-00-005 Molymex II.	Molymex, S.A. de C.V. (Carvajal Galindo, A.)	11/12/02	IP-Molymex	Molymex, S.A. de C.V. (Carvajal Galindo, A.)	11/15/02
	Appendix 1:					
253	*Oficio No. DS-SMA-UNE-LF-282 Operating license.*	SEMARNAP, Office in Sonora (Gandara Camou, E.)	05/30/96	IP-Molymex	Molymex, S.A. de C.V. (Carvajal Galindo, A.)	11/15/02
254	*Oficio No. DS.139-4-SPA-1449 Modifications and amendments to the Molymex operating license.*	Ministry of Social Development, Sonora Office (Chávez Méndez, E,)	05/27/94	IP-Molymex	Molymex, S.A. de C.V. (Carvajal Galindo, A.)	11/15/02
	Appendix 2:					
255	*Oficio No. DS-SMA-UNE-1097 SEMARNAP Attestation of Receipt. Molymex Expansion Project.*	National Institute of Ecology, Environmental Land Use Planning and Impact Branch	10/09/98	IP-Molymex	Molymex, S.A. de C.V. (Carvajal Galindo, A.)	11/15/02
256	*Oficio No. D.O.O.DGOEIA. 000445. Environmental Impact Authorization for Molymex Expansion Project.*	INE, Environmental Land Use Planning and Impact Branch (Butrón Madrigal, L.)	01/29/99	IP-Molymex	Molymex, S.A. de C.V. (Carvajal Galindo, A.)	11/15/02

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257	*Appendix 3: Response from United Mexican States regarding SEM submission.*	SEMARNAT (Lichtinger, V.)	01/18/01	IP-Molymex	Molymex, S.A. de C.V. (Carvajal Galindo, A.)	11/15/02
	Appendix 4:					
258	*Official Bulletin No. 5 Sect. I, containing the Municipal Development Plan 1998/2000 and the Certificate of Approval of the Municipal Development Plan.*	Office of the Mayor of Cumpas (Soto Wendlandt, P.)	01/15/98	IP-Molymex	Molymex, S.A. de C.V. (Carvajal Galindo, A.)	11/15/02
	Appendix 5:					
259	*Oficio No. PFPA-DS-SJ-0588/2001 Administrative Decision without sanction, Administrative File No. 20/2001.*	PROFEPA, Office in Sonora, Legal Affairs Section (Clausen Iberri, O.)	06/19/02	IP-Molymex	Molymex, S.A. de C.V. (Carvajal Galindo, A.)	11/15/02
260	*Oficio No. PFPA-DS-UJ-2601/99 Inspection results.*	PROFEPA, Office in Sonora, Legal Affairs Section (Morachis López, J.R.)	12/14/98	IP-Molymex	Molymex, S.A. de C.V. (Carvajal Galindo, A.)	11/15/02
261	*Inspection Report in Cumpas No. 08032001-SV-Q-001, Inspection Order No. PFPA-DS -SV-0106/2001.*	PROFEPA, Office in Sonora (Luviano Silva, S.; Rosas Valdez, J.D.)	03/09/01	IP-Molymex	Molymex, S.A. de C.V. (Carvajal Galindo, A.)	11/15/02
262	*Oficio No. DS-SMA-UNE-CM-1091 attesting that the calibration, maintenance, and perimeter monitoring activities, the computing equipment, and the telemetry equipment of the network comply with the applicable environmental law.*	SEMARNAP, Office in Sonora (Ruiz Rubio, J.C.)	10/05/98	IP-Molymex	Molymex, S.A. de C.V. (Carvajal Galindo, A.)	11/15/02
263	*Appendix 6: Oficio No. PFPA-DF-UJ-2572/99, Administrative Decision, Administrative File. No. 080/96.*	PROFEPA, Office in Sonora, Legal Affairs Unit (Morachis López, J.R.)	02/28/00	IP-Molymex	Molymex, S.A. de C.V. (Carvajal Galindo, A.)	11/15/02
264	*Appendix 7: Photos of Molymex plant.*	Molymex, S.A. de C.V.		IP-Molymex	Molymex, S.A. de C.V. (Carvajal Galindo, A.)	11/15/02
265	*Appendix 9: Schematic flowchart of Molymex process.*	Technical Department	undated	IP-Molymex	Molymex, S.A. de C.V. (Carvajal Galindo, A.)	11/15/02
266	*Appendix 10: Oficio No. DS-SMA-UNE-LF-0071 giving authorization to conduct the relevant air emission measurements by applying the method of NOM-AA-56-1980.*	SEMARNAP, Office in Sonora (Gandara Camou, E.)	01/10/97	IP-Molymex	Molymex, S.A. de C.V. (Carvajal Galindo, A.)	11/15/02
267	*Appendix 11: Oficio No. DS-SMA-UNE-019 giving notice that the study titled "Assessment of particle emissions and trace metals in the gas scrubbing system stack of the molybdenum sulfide roasti ng plant" complies, in content and form, with the stipulations of condition no. 6 of the updated operating license.*	SEMARNAT, Federal Office in Sonora (Luna Urquídez, J.L.)	01/16/02	IP-Molymex	Molymex, S.A. de C.V. (Carvajal Galindo, A.)	11/15/02

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268	*Appendix 12. Record of Agreements and Commitments between Molymex and the Comité de Protección del Medio Ambiente de Cumpas, with the participation of federal, state, and municipal authorities.*	Molymex, S.A. de C.V.; Office of the Mayor of Cumpas, Ministry of Health, SEMARNAP, COPRODEMAC, Asociación Civil Pro Defensa del Empleo	05/23/96	IP-Molymex	Molymex, S.A. de C.V. (Carvajal Galindo, A.)	11/15/02
269	*Appendix 13. Photos of the Ojo de Agua station. View to the north, south, east and west. Photos of the Teonadepa station to the south and west. Photos of the Cumpas station, view to the north and south.*	n/a	undated	IP-Molymex	Molymex, S.A. de C.V. (Carvajal Galindo, A.)	11/15/02
	Appendix 14:					
270	*Graphs of 6-hour average SO_2 emissions from Molymex stack, 1994–2002.*	Environmental and Safety Department, Ambient Air Quality		IP-Molymex	Molymex, S.A. de C.V. (Carvajal Galindo, A.)	11/15/02
271	*Assessment of pollutant emissions from the molybdenum sulfide roasting plant operated by Molymex, S.A. de C.V.*	Sampling Servicios Ambientales Múltiples e Ingeniería, S.A. de C.V. (Cruzado Martínez, A.)	10/00/00	IP-Molymex	Molymex, S.A. de C.V. (Carvajal Galindo, A.)	11/15/02
272	*Calibration certificate.*	CNM Centro Nacional de Meteorología (Pérez Castorena, A.)	11/25/99	IP-Molymex	Molymex, S.A. de C.V. (Carvajal Galindo, A.)	11/15/02
	Appendix 15:					
273	*Oficio No. DS-SGPA-UGA-687 giving notice that, based on report remitted by Molymex further to air quality monitoring conducted by Molymex in Cumpas, the SO_2 levels for July 2002 are within the limits set out in standards NOM-022-SSA1-1993 and NOM-025-SSA1-1993.*	SEMARNAT, Federal Office in Sonora, Office of the Deputy Director of Management for Environmental Protection (Luna Urquídez, J.L.)	09/12/02	IP-Molymex	Molymex, S.A. de C.V. (Carvajal Galindo, A.)	11/15/02
274	*Oficio No.DS-SGPA-UGA-619 giving notice that based on reports remitted by Molymex further to air quality monitoring conducted by Molymex in Cumpas, the SO_2 and PM_{10} levels for the period from October 1999 to June 2002 are within the limits set out in Mexican Official Standard NOM-022-SSA1-1993.*	SEMARNAT, Office in Sonora (Luna Urquídez, J.L.)	08/29/02	IP-Molymex	Molymex, S.A. de C.V. (Carvajal Galindo, A.)	11/15/02
275	*Oficio No. DFS-SMA-UNE-838 giving notice that the company's monitoring reports for 1998 and up to September 1999 will be remitted to the National Institute of Ecology for validation.*	SEMARNAP, Office in Sonora (Ruiz Rubio, J.C.)	12/16/99	IP-Molymex	Molymex, S.A. de C.V. (Carvajal Galindo, A.)	11/15/02
276	*Oficio No. DFS-SMA-UNE-CM-259 notifying the company that the ambient air quality monitoring report on SO_2 and PM_{10} levels for January 1998 indicates that the levels are within the limits set out in Mexican Official Standards NOM-022-SSA1-1993 and NOM-025-SSA1-1993.*	SEMARNAP, Office in Sonora (Gandara Camou, E.)	02/23/98	IP-Molymex	Molymex, S.A. de C.V. (Carvajal Galindo, A.)	11/15/02

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277	*Oficio No. DS-SMA-UNE-CM-123 notifying Molymex that it must request authorization in writing from the Sonora Office for any change to the air quality monitoring program and that it will evaluate the air quality monitoring reports filed by Molymex on SO_2 and PM_{10} levels for December 1997.*	SEMARNAP, Office in Sonora (Gandara Camou, E.)	01/21/98	IP-Molymex	Molymex, S.A. de C.V. (Carvajal Galindo, A.)	11/15/02
278	*Oficio No. DS-SMA-UNE-CM-985 on report of ambient air quality monitoring for SO_2 and PM_{10} levels for November 1997.*	SEMARNAP, Office in Sonora (Gandara Camou, E.)	12/12/97	IP-Molymex	Molymex, S.A. de C.V. (Carvajal Galindo, A.)	11/15/02
279	*Oficio No. DS-SMA-UNE-CM-940 on report of ambient air quality monitoring for SO_2 and PM_{10} levels for October 1997.*	SEMARNAP, Office in Sonora (Gandara Camou, E.)	11/28/97	IP-Molymex	Molymex, S.A. de C.V. (Carvajal Galindo, A.)	11/15/02
280	*Oficio No. DS-SMA-UNE-CM-879 on report of ambient air quality monitoring for SO_2 and PM_{10} levels for September 1997.*	SEMARNAP, Office in Sonora (Gandara Camou, E.)	10/16/97	IP-Molymex	Molymex, S.A. de C.V. (Carvajal Galindo, A.)	11/15/02
281	*Oficio No. DS-SMA-UNE-CM-825 on report of ambient air quality monitoring for SO_2 and PM_{10} levels for August 1997.*	SEMARNAP, Office in Sonora (Gandara Camou, E.)	09/22/97	IP-Molymex	Molymex, S.A. de C.V. (Carvajal Galindo, A.)	11/15/02
282	*Oficio No. DS-SMA-UNE-CM-591 on report of ambient air quality monitoring for SO_2 and PM_{10} levels for May 1997.*	SEMARNAP, Office in Sonora (Gandara Camou, E.)	06/20/97	IP-Molymex	Molymex, S.A. de C.V. (Carvajal Galindo, A.)	11/15/02
283	*Oficio No. DS-SMA-UNE-CM-493 on report of ambient air quality monitoring for SO_2 and PM_{10} levels for March and April 1997.*	SEMARNAP, Office in Sonora (Gandara Camou, E.)	05/08/97	IP-Molymex	Molymex, S.A. de C.V. (Carvajal Galindo, A.)	11/15/02
284	*Oficio No. DS-SMA-UNE-CM-328 to Assistant General Manager of Molymex, S.A. de C.V., with information on report of ambient air quality monitoring for SO_2 and PM_{10} levels for February 1997.*	SEMARNAP, Office in Sonora (Gandara Camou, E.)	04/28/97	IP-Molymex	Molymex, S.A. de C.V. (Carvajal Galindo, A.)	11/15/02
285	*Oficio No. DS-SMA-UNE-CM-119 on report of ambient air quality monitoring for SO_2 and PM_{10} levels for December 1996.*	SEMARNAP, Office in Sonora (Gandara Camou, E.)	01/30/97	IP-Molymex	Molymex, S.A. de C.V. (Carvajal Galindo, A.)	11/15/02
286	*Oficio No. DS-SMA-UNE-CM-118 on report of ambient air quality monitoring for SO_2 and PM_{10} levels for November 1996.*	SEMARNAP, Office in Sonora (Gandara Camou, E.)	01/27/97	IP-Molymex	Molymex, S.A. de C.V. (Carvajal Galindo, A.)	11/15/02
287	*Oficio No. DS-SMA-UNE-CM-533 on report of ambient air quality monitoring for SO_2 and PM_{10} levels for September 1996.*	SEMARNAP, Office in Sonora (Gandara Camou, E.)	12/03/96	IP-Molymex	Molymex, S.A. de C.V. (Carvajal Galindo, A.)	11/15/02
288	*Oficio No. DS-SMA-UNE-CM-565 on report of ambient air quality monitoring for SO_2 and PM_{10} levels for October 1996.*	SEMARNAP, Office in Sonora (Gandara Camou, E.)	11/19/96	IP-Molymex	Molymex, S.A. de C.V. (Carvajal Galindo, A.)	11/15/02

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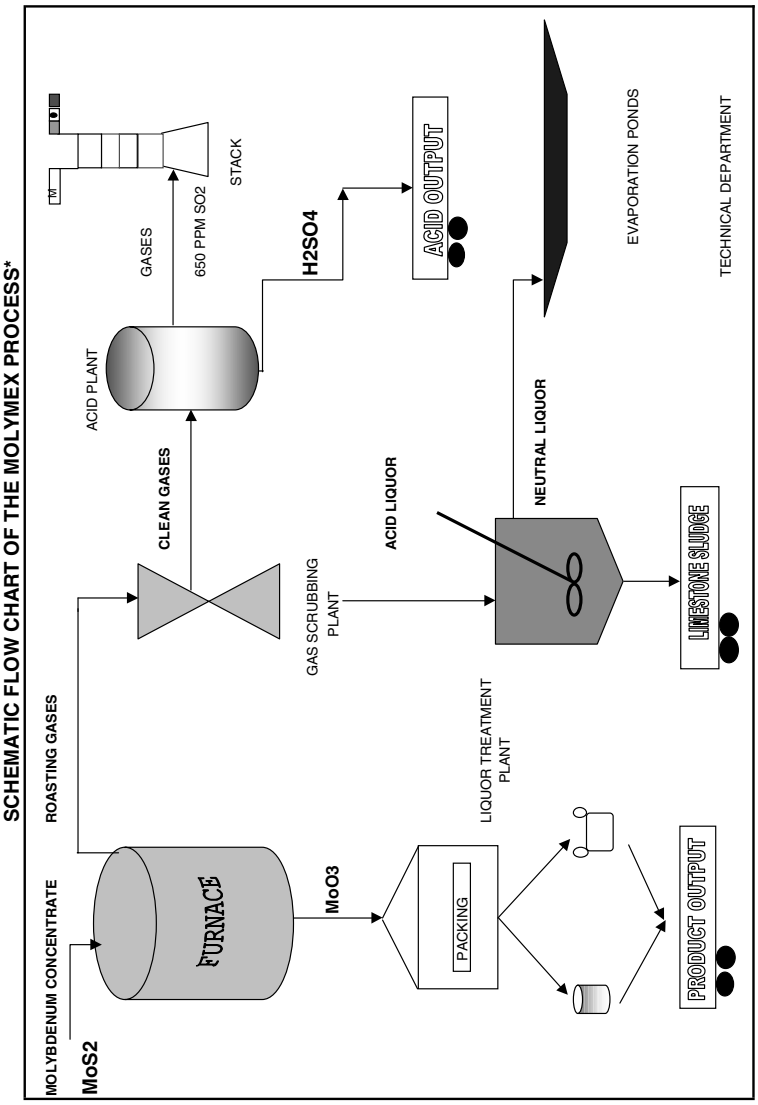
289	*Oficio No. DS-SMA-UNE-CM-447 on report of ambient air quality monitoring on SO_2, PM_{10} and meteorological data (partial) for July and August 1996.*	SEMARNAP, Office in Sonora (Gandara Camou, E.)	09/23/96	IP-Molymex	Molymex, S.A. de C.V. (Carvajal Galindo, A.)	11/15/02
290	*Oficio No. DSMA-UNE-CM-355 on report of ambient air quality monitoring on SO_2, PM_{10} and meteorological data for October, November and December 1995; January, February, March and June 1996.*	SEMARNAP, Office in Sonora (Gandara Camou, E.)	08/30/96	IP-Molymex	Molymex, S.A. de C.V. (Carvajal Galindo, A.)	11/15/02
	Appendix 16:					
291	*Environmental impact assessment of air quality as affected by gas emissions relating to Molymex plant expansion plan.*	Molymex, S.A. de C.V.	08/00/98	IP-Molymex	Molymex, S.A. de C.V. (Carvajal Galindo, A.)	11/15/02
292	*Summary of meteorological information, Molymex station, Cumpas.*	Molymex, S.A. de C.V.	00/00/95	IP-Molymex	Molymex, S.A. de C.V. (Carvajal Galindo, A.)	11/15/02
293	*Topography of area around Molymex plant.*	Molymex, S.A. de C.V.	undated	IP-Molymex	Molymex, S.A. de C.V. (Carvajal Galindo, A.)	11/15/02
294	*Printouts of dispersion model.*	ISCST	07/00/86	IP-Molymex	Molymex, S.A. de C.V. (Carvajal Galindo, A.)	11/15/02
	Appendix 18:					
295	*Technical information on results of Cumpas soil molybdenum levels study, results of ambient sulfur dioxide monitoring and risk assessment for Cumpas, results of blood lead levels study, list of morbidity and mortality incidents recorded in the Municipality of Cumpas, Sonora, during 2000. File No. SSS/DGSS/2001 to General Manager of Molymex.*	Government of the State of Sonora, Ministry of Public Health, Epidemiology Division (Cruz Ochoa, J.B.)	03/26/01	IP-Molymex	Molymex, S.A. de C.V. (Carvajal Galindo, A.)	11/15/02
296	*Oficio No. DCA-23-VI/00-61 to SEMARNAP State Officer in Sonora with report of activities carried out by Molymex in the context of "Cumpas Environment Week".*	Molymex, S.A. de C.V. (Carvajal Galindo, A.)	06/23/00	IP-Molymex	Molymex, S.A. de C.V. (Carvajal Galindo, A.)	11/15/02
297	*Appendix 19: Report of activities carried out by Molymex in the context of "Cumpas Environment Week".*	Molymex, S.A. de C.V. (Carvajal Galindo, A.)	06/05/02	IP-Molymex	Molymex, S.A. de C.V. (Carvajal Galindo, A.)	11/15/02
	Appendix 20:					
298	*Letter to SEMARNAP Federal Officer in Sonora with appendices in support of Molymex's actions in favor of the environment.*	COPRODEMAC (Gallego Quintero, A.)	05/23/97	IP-Molymex	Molymex, S.A. de C.V. (Carvajal Galindo, A.)	11/15/02
299	*ISO 9002 certification for quality system QBE-97241. Initially certified as of 12/1997. Validity period 01/02/2001–15/12/2003.*	SGS International Certification Services E.E.S.V. (D'Haese, G.)	02/01/01	IP-Molymex	Molymex, S.A. de C.V. (Carvajal Galindo, A.)	11/15/02

No.	DOCUMENT/APPENDIX	AUTHOR	DATE mm/dd/yy	ID	PROVIDED TO SECRETARIAT BY	RECEIVED mm/dd/yy
300	*Letter of congratulations for achievement of Profepa Clean Industry Certification.*	Municipality of Cumpas, Sonora (Ballesteros Guzmán, R.)	09/12/02	IP-Molymex	Molymex, S.A. de C.V. (Carvajal Galindo, A.)	11/15/02
301	*Report of fourth environment week held by Molymex and participation in the event "Mining and the Environment" held by the Mining Industry Association of Sonora. Photographs.*	Molymex, S.A. de C.V.	06/05/02	IP-Molymex	Molymex, S.A. de C.V. (Carvajal Galindo, A.)	11/15/02
302	*Appendix 21: Document titled "Derecho al Desarrollo, Derechos Humanos and Democracia en Mexico" (Right to development, human rights, and democracy in Mexico).*	Rodríguez Espinoza, H.	00/00/01	IP-Molymex	Molymex, S.A. de C.V. (Carvajal Galindo, A.)	11/15/02
	Appendix 22:					
303	*Illustrative pamphlet of achievements of the Fondo de Apoyo Comunitario de Cumpas (community support fund), with photos.*	Municipality of Cumpas, Sonora	09/00/99	IP-Molymex	Molymex, S.A. de C.V. (Carvajal Galindo, A.)	11/15/02
304	*Articles from the newspaper El Amanecer Serrano, 2000–2001.*	Molymex, S.A. de C.V.	1997-2001	IP-Molymex	Molymex, S.A. de C.V. (Carvajal Galindo, A.)	11/15/02
305	"Disposiciones de Orden Público e Interés Social" (Provisions for public order and the public interest), legal precedents referring to the retroactive application of public order provisions.	Academia Sonorense de Derechos Humanos, A.C. (Gutiérrez Mendívil, D.)	undated	Information provided to the Secretariat by Domingo Gutiérrez Mendívil	Academia Sonorense de Derechos Humanos, A.C. (Gutiérrez Mendívil, D.)	11/18/02
306	Technical opinion on SO_2 emissions. Final report.	Acosta y Asociados (Acosta, G.)	02/03/03	Acosta y Asociados[9]	Acosta y Asociados (Acosta, G.)	02/03/03
307	Oficio No. SSS-DGRFS-02-448 to Molymex corresponding to Final Technical Report. Assessment of health risks arising from environmental agents (physical, chemical, biological) as per NOM-048-SSA1-1993.	Ministry of Public Health and Sonora Health Services (Cruz Ochoa, J.B.)	12/17/02	IP-Molymex2[10]	Molymex, S.A. de C.V. (Carvajal Galindo, A.)	02/19/03

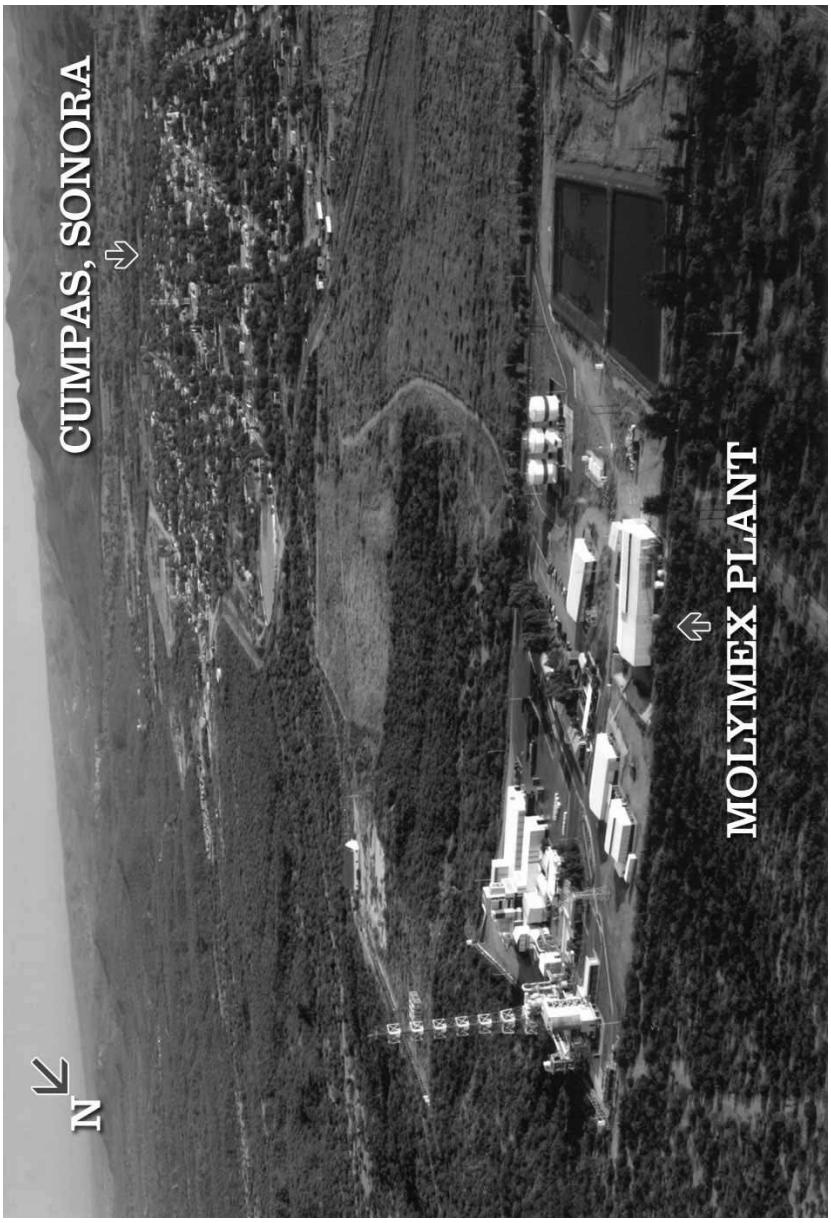
9. Technical opinion on SO_2 emissions.
10. Information provided by Molymex.

APPENDIX 7

Schematic Flow Chart of the Molymex Process and Photo of the Molymex Plant



* Information provided by Molymex, 15 november 2002, appendix 9.


CUMPAS, SONORA
MOLYMEX PLANT
N

APPENDIX 8

Summary of Specifications Contained in Molymex's Operating Permits

Summary of Specifications Contained in Molymex's Operating Permits

Date and number	Authorized activities and equipment	Obligations	Emission limits and deadlines
First OP, 11 February 1994, DS-139-4-SPA-126	- Vertical 10-hearth roasting furnace, 5.4864 m diameter - Diesel consumption of approximately 25 m^3/month - Annual production of 113.4 tons of molybdenum trioxide	- Operate vapor recovery system - Quantify pollutant emissions - Air Quality Monitoring Program for Sulfur Dioxide, breathable particles, and weather data	- 99 % particle collection efficiency at resumption of operations - 6-hour average SO_2 emission limit of 0.065 % in volume, 24-hour average of 0.13 % ppm - 50 mg/m^3 particle limit - 20 % opacity in visible emissions
First amendment to first OP, 27 May 1994, DS-139-4-SPA-1449	- Vertical 10-hearth furnace - 92 m^3/month diesel - Annual production of 7,500 tons of molybdenum trioxide	- Design, installation, and operation of an Air Quality Monitoring Network for SO_2 and solid particles (4 stations) - Raise the stack to a height sufficient to comply with NOM-022-SSA1-1993 and NOM-024-SSA1-1993 - Determine the air emissions produced by the main roasting furnace stack - Conduct morbidity and mortality studies and vegetation impact studies - NOM-CCAT-006-ECOL/1993[1] for solid particles, instead of 99 % efficiency requirement for particle control system	- 6-hour average SO_2 limit of 0.065 % - 50 mg/m^3 particle limit - 20 % opacity in visible emissions - Comply with pollutant limits set out in applicable standards by 1 May 2005 - The monitoring network must operate at least two months prior to the commissioning of the plant.
Second amendment to first OP, 3 April 1996, DS-SMA-UNE-LF-500	The annual production capacity increase to 7,500 tons of molybdenum trioxide was temporarily suspended until the company complied with the stipulated contaminant limits.	Install a sulfuric acid plant or, failing that, another SO_2 emission control alternative proposed by the company.	- 50 Ug/m^3N solid particle limit as of 1 September 1997 - 4 g/m^3N liquid particle limit as of 1 May 1996 - 80 mg/m^3N liquid particle limit as of 1 September 1997 - 650 ppmv SO_2 limit as of 1 October 1997.

1. Establishing air emission limits for solid particles from fixed sources; DOF, 22 October 1993. On 29 November 1994, this standard was renumbered NOM-043-ECOL-1993.

Date and number	Authorized activities and equipment	Obligations	Emission limits and deadlines
Second OP, 30 May 1996, DS-SMA-UNE-LF-282	- Vertical 10-hearth furnace and 92 m^3/month diesel - Molybdenum trioxide production of 2 tons/hour - 7,500 tons/year of molybdenum trioxide; dry material load into furnace was limited to 21,400 kg/day until compliance with pollutant limits set out in applicable standards - Incorporates agreements and commitments of 23 May 1996	- Reductions and restrictions on roasting furnace load - Relocate or recondition monitoring stations located at Cumpas and Ojo de Agua - Operate a mobile monitoring station - Install and operate a particle control system (gas scrubbing plant) - Raise stack height - Measure air emissions from roasting process - Install a sulfuric acid plant or conduct a technical and economic study with justification of proposed solutions - Conduct 3-year vegetation morbidity, mortality and impact studies - Safety measures for diesel storage tank - Operate an alarm system - Contingency plan - File stack gas flow studies and measurements	- 6-hour average SO_2 limit of 0.065 % as of 31 December 1997 - 50 mg/m^3 solid particle limit as of 9 June 1997 - 80 mg/m^3 liquid particle limit as of 9 June 1997 - 4 g/m^3N liquid particle limit as of 1 May 1996 - Install sulfuric acid plant by 31 December 1997
First amendment to second OP, 17 June 1997, DFS-D-0986-97	Authorization to operate roasting furnace at installed production capacity.		- 6-hour average SO_2 limit of 0.065 % – the compliance deadline for this limit was postponed by 1640 calendar days starting 31 December 1997 (until June 2002) - Observe ambient SO_2 limits set out in DFS-D-0114-97[2]

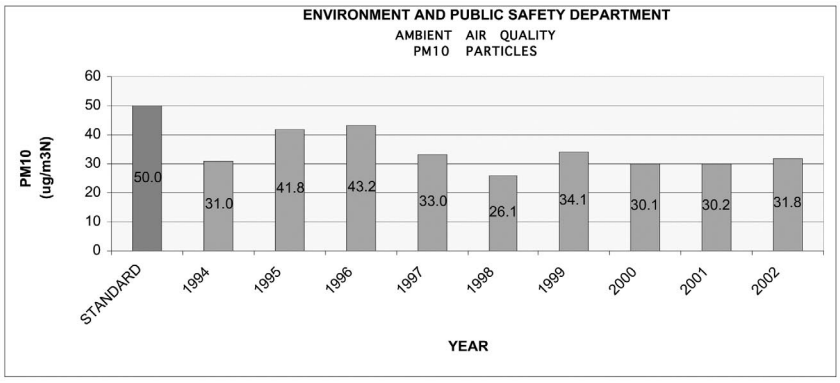
2. The Secretariat requested Mexico but did not obtain, a copy of this *oficio*, which is mentioned in *oficio* DFS-D-0986-97.

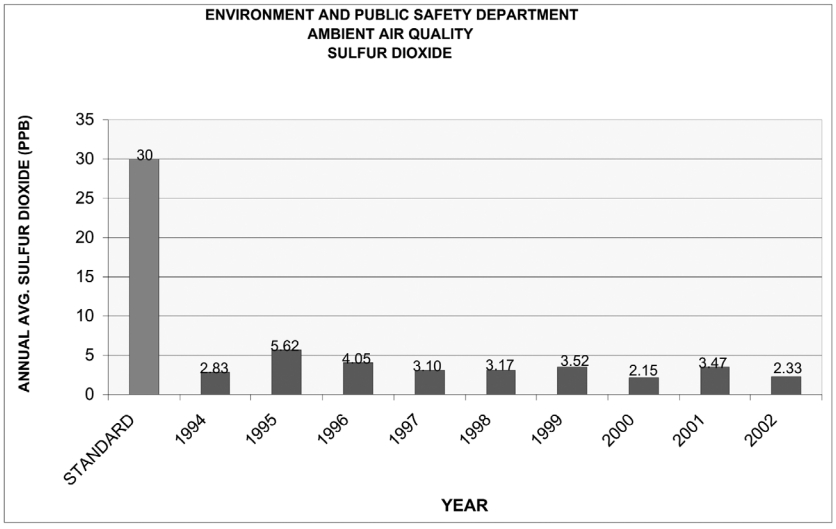
Date and number	Authorized activities and equipment	Obligations	Emission limits and deadlines
Third OP (in force), 29 November 2000, DS-SMA-UNE-756	- Vertical 10-hearth roasting furnace with capacity of 2 tons/ hour of molybdenum trioxide, which may operate with 4 additional hearths (14 hearths) - Additional vertical 14-hearth roasting furnace, 6.5 m diameter, with capacity of 2.015 tons/hour of molybdenum trioxide - Molybdenum waste treatment plant - Consumption of 180 m^3/month of diesel, 60 tons of liquid gas - Consumption of 13.5 tons/month of anhydrous ammonia	- File monthly report of hourly molybdenum sulfide loads per day - Install and operate a continuous monitoring system for gas emissions from roasting process - Semiannual direct measurements of solid and liquid particles at stack - Install emergency alarm system - Implement contingency plan - Perform physi-cochemical analysis of particles under 10 microns - Conduct a study to estimate human health risk - Continue with perimeter monitoring at the 4 stations and file monthly reports of results obtained	- 0.065 % SO_2, compliance deadline extend to 31 December 2001 - 50 mg/m^3N solid particle limit as of 31 December 2001 - 80 mg/m^3N liquid particle limit as of 31 December 2001

APPENDIX 9

Graphs of 6-hour Average SO_2 Stack Emissions

Graphs of 6-hour Average SO_2 Stack Emissions





* Information provided by Molymex, 15 November 2002, appendix 14.

APPENDIX 10

Periods without Data in Perimeter Monitoring Reports

NO. OF PERIODS WITHOUT DATA AND PRINCIPAL PERIODS OF OCCURRENCE[1]

OJO DE AGUA STATION

	1995	1996	1997	1998	1999	2000	2001	2002
Jan	120* (0:00 on 1st to 16:00 on 9th)	1	0	0	0	2	5	6
Feb	89 (18:00 on 7th to 15:00 on 10th)	2	20 (10:00–17:00 on 13th)	0	0	1	2	1
Mar	245 (majority between 1st and 10th)	8	10 (10:00–15:00 on 14th)	50 (0:00 on 4th to 23:00 on 5th)	1	1	17 (10:00–23:00 on 31st)	2
Apr	3	5	5	3	49 (29th–30th)	0	62 (0:00 on 1st to 13:00 on 2nd, 15:00 on 19th to 14:00 on 20th)	2
May	3	33 (17:00 on 16th to 12:00 on 17th)	4	0	0	0	18 (15:00–21:00 on 23rd)	4
Jun	0	3	11	2	57 (22:00 on 1st to 4:00 on 4th)	26 (0:00–23:00 on 28th)	6	2
Jul	6 (11:00–16:00 on 27th)	193 (18:00 on 25 to 23:00 on 31st)	1	33 (12:00–21:00, on 1st)	3	0	8	5 (16:00–18:00 on 2nd)
Aug	32 (10:00–23:00 on 4th)	576 (0:00 on 1st to 23:00 on 24th)	2	2	4 (19:00–21:00 on 28th)	68 (18:00 on 18th to 10:00 on 21st)	9	
Sep	6	19 (17:00 on 22nd to 9:00 on 23rd)	480 (6th–25th)	0	0	3	2	4
Oct	1	85 (24th–28th)	4	11 (0:00–6:00 on 9th)	0	1	18 (2:00–6:00 and 14:00–16:00 on 24th)	
Nov	17 (19:00 on 3rd to 8:00 on 4th)	9 (10:00–18:00 on 6th)	1	7 (12:00–18:00 on 9th)	7 (9:00–12:00 on 24th)	0	13 (0:00–8:00 on 14th)	
Dec	0	1	0	14 (15:00 on 24th to 4:00 on 25th)	1	0	2	

* = The plant was commissioned on 9 January.

1. Acosta y Asociados, Technical Opinion on SO_2 Emissions, Submission SEM-00-005 (Molymex II), Appendix B.

NO. OF PERIODS WITHOUT DATA AND PRINCIPAL PERIODS OF OCCURRENCE

TEONADEPA STATION

	1995	1996	1997	1998	1999	2000	2001	2002
Jan	115* (0:00 on 6th to 11:00 on 9th)	33 (5:00 on all 31 days)	0	0	1	1	7 (11:00–15:00 on 17th)	0
Feb	224 (various periods)	42 (5:00 from 1st–26th)	1	0	1	1	2	0
Mar	351 (various)	27 (5:00 from 11th–29th)	1	48 (0:00 on 4th to 23:00 on 5th)	4	1	3 (8:00–10:00 on 24th)	0
Apr	0	1	1	2	2	0	0	0
May	5	11 (13:00 from 9th–13th)	0	0	0	0	7 (16:00–21:00 on 23rd)	0
Jun	4 (12:00–15:00 on 16th)	0	6	0	0	1	0	0
Jul	13 (0:00–9:00 on 17th)	7	120 (10th–14th)	0	28 (21:00 on 26th to 23:00 on 27th)	0	2	0
Aug	253 (20:00 on 21st to 23:00 on 31st)	2	0	15 (21:00 on 17th to 11:00 on 18th)	5	3	1	
Sep		24 (0:00–23:00 on 1st)	1	23 (19:00 on 18th to 11:00 on 19th)	0	0	4	20 (2:00–21:00 on 23rd)
Oct	288 (0:00 on 1st to 19:00 on 12th)	0	0	13 (0:00–5:00 on 9th)	0	1	0	
Nov	69 (13:00 on 20th to 23:00 on 21st)	0	1	0	6 (9:00–13:00 on 24th)	0	9 (0:00–8:00 on 14th)	
Dec	50 (5:00 from 4th –31st)	1	0	15 (14:00 on 24th to 4:00 on 25th)	2	0	1	

* = The plant was commissioned on 9 January.

NO. OF PERIODS WITHOUT DATA AND PRINCIPAL PERIODS OF OCCURRENCE

CUMPAS STATION

	1995	1996	1997	1998	1999	2000	2001	2002
Jan	119* (0:00 on 6th to 15:00 on 9th)	10 (16:00–23:00 on 13th)	0	27 (24:00 on 9th)	0	1	12 (11:00–16:00 on 17th)	10 (8:00–15:00 on 18th)
Feb	145 (20:00 on 8th to 17:00 on 10th)	17 (5:00 from 24th–29th)	0	0	0	1	12 (12:00–18:00 on 16th)	0
Mar	307 (23:00 on 5th to 18:00 on 9th)	33 (5:00 from 1st–29th)	2	50 (0:00 on 4th to 23:00 on 5th)	2	4	14 (13:00–23:00 on 31st)	18 (18:00 on 7th to 11:00 on 8th)
Apr	0	4	2	0	0	2	13 (0:00–12:00 on 1st)	2
May	5	3	3	14 (0:00–13:00 on 18th)	9 (19:00 on 20th to 3:00 on 21st)	5	8 (15:00–21:00 on 23rd)	1
Jun	0	5	37 (17:00 on 22nd to 11:00 on 23rd)	0	0	6 (17:00–19:00 on 26th)	17 (19:00 on 17th to 10:00 on 18th)	1
Jul	0	13	17 (21:00 on 4th to 13:00 on 5th)	52 (15:00 on 18th to 11:00 on 20th)	2	5	14 (8:00–10:00 on 22nd)	2
Aug	19 (12:00 on 15th to 4:00 on 16th)	3	15 (0:00–11:00 on 11th)	2	7	6 (17:00–19:00 on 26th)	8	
Sep	6	0	3	0	0	2	3	8 (0:00–6:00 on 13th)
Oct	0	24 (13:00 on 27th to 11:00 on 28th)	0	10 (0:00–5:00 on 9th)	2	3	3	
Nov	16 (18:00 on 3rd to 9:00 on 4th)	0	1	0	4	2	10 (0:00–8:00 on 14th)	
Dec	23 (0:00–13:00 on 22nd)	0	0	15 (14:00 on 24th to 4:00 on 25th)	57 (28th–29th)	1	1	

* = The plant was commissioned on 9 January.

NO. OF PERIODS WITHOUT DATA AND PRINCIPAL PERIODS OF OCCURRENCE

MOBILE STATION

	1995	1996	1997	1998	1999	2000	2001	2002
Jan			1	0	0	0	7 (12:00–16:00 on 17th)	0
Feb			1	0	0	1	2	0
Mar			2	48 (0:00 on 4th to 23:00 on 5th)	1	1	3 (8:00–10:00 on 24th)	0
Apr			3	1	1	1	3	47 (13:00 on 6th to 11:00 on 8th)
May			25 (0:00–23:00 on 31st)	0	0	0	8 (16:00–21:00 on 23rd)	0
Jun			0	72 (3rd, 8th and 9th)	34 (14:00 on 20th to 23:00 on 21st)	17 (21:00 on 17th to 13:00 on 18th)	15 (21:00 on 13th to 11:00 on 14th)	32 (7:00 on 8th to 14:00 on 9th)
Jul			5 (0:00–4:00 on 1st)	0	1	107 (13:00 on 5th to 23:00 on 9th)	85 (20:00 on 6th to 9:00 on 9th), (0:00–23:00 on 13th)	0
Aug			1	1	48 (30th–31st)	35	13 (19:00 on 18th to 9:00 on 19th)	
Sep		7 (0:00–6:00 on 7th)	9	24 (on 15th)	0	15 (0:00–14:00 on 1st)	2	20 (23:00 on 3rd to 4:00 on 4th, 0:00–7:00 on 13th)
Oct		7 (5:00–11:00 on 29th)	0	9 (0:00–5:00 on 9th)	96 (15th–18th)	0	8 (15:00–19:00 on 7th)	
Nov		0	1	14 (0:00–13:00 on 19th)	26 (0:00–23:00 on 20th)	0	9 (0:00–8:00 on 14th)	
Dec		74 (0:00 on 1st to 23:00 on 3rd)		15 (14:00 on 24th to 4:00 on 25th)	1	12 (0:00–10:00 on 21st)	8 (12:00–18:00 on 27th)	

APPENDIX 11

Occurrences of Negative Values in Perimeter Monitoring Reports

OCCURRENCE OF NEGATIVE VALUES* IN PERIMETER MONITORING REPORTS

OJO DE AGUA STATION

	1995	1996	1997	1998	1999	2000	2001	2002
Jan	0	4	242	233	8	236	290	274
Feb	0	113	244	267	174	151	108	84
Mar	0	12	228	284	13	22	0	50
Apr	0	7	463	298	64	30	48	0
May	0	5	531	336	57	10	262	0
June	26	21	468	198	99	230	29	7
July	79	43	355	277	118	142	65	0
Aug	0	97	348	47	73	107	177	
Sep	42	417	135	52	0	0	213	0
Oct	23	194	543	167	102	99	24	
Nov	249	110	589	8	26	10	0	
Dec	0	50	242	4	129	53	151	

TEONADEPA STATION

	1995	1996	1997	1998	1999	2000	2001	2002
Jan	214	195	75	319	94	85	46	95
Feb	0	36	30	306	47	195	357	0
Mar	0	101	38	176	150	25	107	1
Apr	4	7	145	268	101	173	111	360
May	0	0	232	561	412	144	137	368
June	0	0	244	470	327	137	0	97
July	0	15	290	95	0	0	45	3
Aug	0	145	177	37	225	5	436	
Sep		0	341	36	252	0	141	97
Oct	212	0	395	0	342	92	0	
Nov	310	0	190	0	64	0	0	
Dec	305	61	183	30	82	0	165	

* Acosta y Asociados in the report, "Technical opinion on SO_2 Emissions, Submission SEM-00-005 (Molymex II)," Appendix C.

OCCURRENCE OF NEGATIVE VALUES IN PERIMETER MONITORING REPORTS

CUMPAS STATION

	1995	1996	1997	1998	1999	2000	2001	2002
Jan	49	484	491	390	151	77	248	85
Feb	0	374	429	482	39	136	296	283
Mar	0	387	377	285	112	253	157	108
Apr	8	449	601	103	69	222	87	0
May	0	582	602	108	154	290	8	0
June	122	500	551	239	288	260	0	0
July	334	382	611	135	261	175	0	0
Aug	169	205	232	1	305	237	107	
Sep	42	0	513	62	259	231	0	2
Oct	52	21	597	3	237	6	4	
Nov	466	551	633	11	48	296	0	
Dec	507	549	550	6	100	218	19	

MOBILE STATION

	1995	1996	1997	1998	1999	2000	2001	2002
Jan			144	320	20	98	122	6
Feb			298	210	9	0	48	0
Mar			264	8	39	128	54	0
Apr			180	125	114	199	115	0
May			74	66	32	376	72	0
June			367	299	439	232	27	0
July			255	243	415	578	246	0
Aug			415	0	253	356	425	
Sep		160	165	0	212	420	239	24
Oct		109	38	5	167	0	0	
Nov		101	161	0	13	0	0	
Dec		171		7	184	0	79	

APPENDIX 12

Minimum and Maximum Perimeter Monitoring Reported Values

MINIMUM* AND MAXIMUM PERIMETER MONITORING REPORTED VALUES

OJO DE AGUA STATION

	1995	1996	1997	1998	1999	2000	2001	2002
Jan	0	-1.2	-2.8	-1.9	-1.1	-4.2	-3.1	-2.8
Feb	0	-4.7	-31.2	-0.8	-3	-0.6	-1.4	-1.3
Mar	0	-0.3	-33.1	-5.5	-1	-0.5	0	-1.7
Apr	0	-0.3	-9	-9.5	-23	-1.6	-2.5	0
May	0	-0.5	-8.2	-7.4	-1.2	-0.6	-2.7	0
June	-0.5	-0.5	-107	-9.5	-5.1	-0.7	-0.4	-1.2
July	-1.6	-10	-12.6	-11.6	-4.8	-1.1	-8.3	0
Aug	0	-2.7	-10.6	-2.2	-0.6	-2.5	-59.1	
Sep	-0.6	-2.3	-7.5	-2.3	0.4	0	-6.2	0
Oct	-0.2	-1.7	-14.5	-5.9	-1.6	-2.6	-0.5	
Nov	-1.9	-1.9	-12.7	-0.6	-0.8	-0.4	0	
Dec	0.2	-0.7	-2.8	-0.2	-3.8	-4.5	-1.9	

TEONADEPA STATION

	1995	1996	1997	1998	1999	2000	2001	2002
Jan	-8.1	-3	-0.3	-1.1	-1.2	-4.3	-0.5	-0.6
Feb	0	-76.1	-0.3	-0.9	-0.8	-15.3	-1	0.1
Mar	0	-6.9	-0.3	-0.5	-7	-0.4	-0.9	-0.1
Apr	-0.6	-0.2	-0.4	-1.5	-3.6	-0.7	-1.1	-2
May	0	0	-1.7	-1.9	-8.2	-2.9	-0.9	-1.7
June	0	0.2	-2	-1.2	-2.9	-1.6	0.5	-1
July	0	-0.4	-10.3	-3.6	0	0.5	-0.6	-0.2
Aug	0	-15.1	-11.6	-0.9	-3.8	-1.9	-1.2	
Sep		0	-6	-1	-1.6	0.1	-0.4	-2.9
Oct	-11.9	0.7	-6.5	0	-1.6	-2.1		
Nov	-10	0.8	-1	0.2	-0.4	0.2	0	
Dec	-5.9	-0.4	-0.9	-0.9	-2.7	0.2	-0.6	

* Acosta y Asociados, Technical Opinion on SO_2 Emissions, Submission SEM-00-005 (Molymex II), Appendix D.

MINIMUM PERIMETER MONITORING REPORTED VALUES

STATION CUMPAS

	1995	1996	1997	1998	1999	2000	2001	2002
Jan	-3.6	-4.7	-7.5	-4.2	-3.3	-2.8	-3.7	-1.5
Feb	0	-47.4	-14.3	-2.1	-1	-1	-2.1	-3.1
Mar	0	-3.2	-5.3	-2.2	-7.5	-3	-1.5	-3.1
Apr	-1.4	-3.4	-9.8	-1.3	-0.9	-1.4		0
May	0	-3.5	-6.9	-1.9	-1.4	-9.9	-0.3	0
June	-3.3	-7.1	-8.3	-5.1	-1.4	-4.3	0	0
July	-3	-11.7	-8.4	-5.9	-8.6	-2.6	0	0
Aug	-1.7	-3.2	-9.1	-0.1	-4.1	-5.2	-3	
Sep	-0.6	1	-15.6	-1.2	-1.7	-4.7	0	-0.2
Oct	-2.8	-3.6	-12.8	-0.3	-6	-0.3	-0.5	
Nov	-4.9	-3.5	-9.8	-0.5	-1.6	-2.5	0	
Dec	-3.7	-2.4	-5.6	-0.6	-4.2	-3	-0.4	

MOBILE STATION

	1995	1996	1997	1998	1999	2000	2001	2002
Jan			-2	-4.3	-0.5	-4.2	-1	-0.1
Feb			-2.2	-3.7	-0.3	0	-1.2	0.3
Mar			-2.4	-1	-2.8	-1.5	-0.4	0.2
Apr			-3.8	-6.1	-1.8	-1.7	-1	0
May			-2.3	-0.8	-0.4		-0.8	0.8
June			-21.8	-7.5	-5.5	-1.2	-0.4	0
July			-7	-9.7	-3.3	-1.3	-1.5	0.2
Aug			-4.5	0	-1.9	-0.9	-1.8	
Sep		-2.5	-5	0	-1.4	-1.2	-1.3	-0.2
Oct		-1.4	-1.3	-0.2	-0.8	0.4	0	
Nov		-1.2	-8	0	-2.8	0.1	0	
Dec		-43.6		-0.3		0	-1.1	

MAXIMUM** PERIMETER MONITORING REPORTED VALUES

OJO DE AGUA STATION

	1994	1995	1996	1997	1998	1999	2000	2001	2002
Jan		136.3	112.5	47	20	188.1	99.6	72.8	13
Feb		82.1	116.8	299.2	38.9	96.5	107.7	98.8	15.8
Mar		259.2	148.8	103.9	57.5	144.9	108.6	136.8	22
Apr		179.3	163.6	94.4	48.3	117	96.1	109.4	7.3
May		118.1	136.2	87.7	69.7	88.1	9.5	123.7	5.6
June		291.5	73.5	128.9	83.8	63	20.3	100.4	6
July		171.4	97.7	84	125.3	60.9	88.1	95.6	22
Aug		190.6	116.3	244.4	58.9	58.6	20.6	72.8	
Sep		199.4	55.4	63.6	78.2	102.5	44.6	138.6	14.6
Oct		93.2	67.4	52.9	63	131.4	54.2	114.5	
Nov		156.9	99	51.6	149.8	88.7	106.4	82.4	
Dec		132	69.8	47	160.2	244.2	98.3	67.6	

TEONADEPA STATION

	1994	1995	1996	1997	1998	1999	2000	2001	2002
Jan		21.5	26.7	47.1	12.2	29.7	139.8	40.9	13.3
Feb		205.8	24	81	33	91.2	70.4	15	17.9
Mar		198.4	19.8	40.4	38.4	47.9	21.9	30.3	31.6
Apr		24.2	25.6	26.4	43	196.8	68.4	24.5	5.8
May		178.8	19.8	55.8	23.6	41.4	18.4	42.6	6.9
June		48.7	33.9	120.3	26.7	128.5	7.2	33	4.9
July		269.8	67.3	148	62.1	137	26.4	20.6	5.3
Aug		50.7	22.1	116.7	48.7	83.8	28.9	68.9	
Sep			39.5	62.2	30.5	61.7	24.6	33.4	13.8
Oct		289.8	13.2	35.3	24.3	102	38.2	46.2	
Nov		24.3	58.7	49.9	24.6	67.9	117.8	33.6	
Dec		69.3	24.9	38.6	90.9	62.5	39	25.1	

** Acosta y Asociados, Technical Opinion on SO_2 Emissions, Submission SEM-00-005 (Molymex II), Appendix E.

MAXIMUM PERIMETER MONITORING REPORTED VALUES

CUMPAS STATION

	1994	1995	1996	1997	1998	1999	2000	2001	2002
Jan		214.8	184.6	61.2	24	82.4	104.3	83.9	15.3
Feb		209.9	210.9	55.5	71.6	66.9	100	63.9	26.2
Mar		123.9	146.8	31.9	69.1	69.9	51.8	23.9	31.7
Apr		119.2	272.6	53.4	66.2	78.1	94.8	121.3	12.3
May		132.3	136.6	117.3	67	84.2	46.6	95.1	11.2
June		103	105.8	54.9	89.5	115.2	14.7	122	7.5
July		43.9	40	101.9	74.2	125.9	93.6	102.1	5.4
Aug		164.7	59.6	138.5	87.6	119.6	56.4	108.8	
Sep		199.4	82.5	67.4	53	78.5	44.9	91.6	24.8
Oct		183.2	46.6	40	77.7	111.6	82.1	126.3	
Nov		210.5	72.6	90.1	94.1	79.2	135.9	143.3	
Dec		131.8	74.9	64.3	123.1	166.6	124.5	62.2	

MOBILE STATION

	1994	1995	1996	1997	1998	1999	2000	2001	2002
Jan					80.3	79.4	113	132.9	15
Feb					184.1	92.9	79.7	198.2	26.3
Mar					226.7	56	60.2	67.2	32.9
Apr					148.6	61.2	109.8	123.7	8.7
May					75	37.4	13.3	122.4	7.1
June				75	192	77.4	2.5	73.7	7.5
July				260.2	82.5	183.2	13.2	73.5	14.1
Aug				191.3	146.4	135	5.5	89.5	
Sep			314.1	156	118	78	30.7	87.8	13
Oct			240.1	167.9	237.1	118.6	9.5	112.9	
Nov			159.2	170	163	77.8	14.9	162.8	
Dec			368.6		180.8		110.2	58.4	

ATTACHMENT 1

Council Resolution 04-07

Washington, D.C., 24 September 2004

COUNCIL RESOLUTION 04-07

Instruction to the Secretariat of the Commission for Environmental Cooperation to make public the Factual Record for Submission SEM -00-005 (Molymex II)

THE COUNCIL:

SUPPORTIVE of the process provided for in Articles 14 and 15 of the North American Agreement on Environmental Cooperation (NAAEC) regarding submissions on enforcement matters and the preparation of factual records;

HAVING RECEIVED the final factual record for Submission SEM-00-005;

NOTING that pursuant to Article 15(7) of the NAAEC, the Council is called upon to decide whether to make the factual record publicly available; and

AFFIRMING its commitment to a timely and transparent process;

HEREBY DECIDES:

TO MAKE PUBLIC and post on the registry the final factual record for Submission SEM-00-005 and;

TO ATTACH to the final factual record comments provided by the Parties to the Secretariat on the draft factual record.

APPROVED BY THE COUNCIL:

_____
Judith E. Ayres
Government of the United States of America

_____
José Manuel Bulás Montoro
Government of the United Mexican States

_____
Norine Smith
Government of Canada

ATTACHMENT 2

Comments of Mexico

UCAI/2958/04

Mexico City, 1 July 2004

MR. WILLIAM KENNEDY
EXECUTIVE DIRECTOR
COMMISSION FOR ENVIRONMENTAL COOPERATION
OF NORTH AMERICA

In response to your letter of May 17 and pursuant to Article 15(5) of the North American Agreement on Environmental Cooperation, I hereby submit the comments of this Coordinating Unit on the draft factual record for Submission SEM-00-005/ Molymex II:

1. The expert retained to develop the factual record gives the document a critical slant on the effectiveness of the environmental law. This is contrary to the factual record's purpose of producing a listing of the facts without making recommendations, proposing sanctions, or reaching conclusions. It is therefore proposed to delete the second paragraph under the heading **1.2 Assertions on the Enforcement of Environmental Impact Law** as well as the first sentence of the third paragraph from the same heading. Likewise, it is proposed to delete the first sentence under the heading **5.4.3 Unresolved Matters of Law.**

2. There are various typographical and semantic errors in certain sentences. Please find attached copies of the pages of the draft factual record on which corrections are necessary.

I trust this is satisfactory.

YOURS SINCERELY,

MA. TERESA BANDALA MEDINA
DIRECTOR OF
INTERNATIONAL COOPERATION

JLR

S/Ref.