

RESPONSE TO PUBLIC COMMENTS

Permit No. AZ0026387 – January Mine Hermosa Project

Applicant: South32 Hermosa Inc.
1860 East River Road, Suite 200
Tucson, AZ 85718

Permit Action:

Final permit decision and response to comments received on the permit public noticed on November 28, 2023. The public comment period closed on January 12, 2024. A public hearing was held on January 11, 2024. Following is ADEQ’s response to comments received on the subject permit.

Prepared By:

Rachel Heinz
AZPDES Permits Unit
Arizona Department of Environmental Quality
1110 W. Washington St., 5415B
Phoenix, AZ 85007
602-771-4508

Date: July 3, 2024

Comments received during the public comment period are summarized below in italics. The comments are followed by ADEQ’s response. Comments may have been shortened or paraphrased for presentation in this document; a copy of the unabridged comments is available upon written request from the ADEQ Records Center, recordscenter@azdeq.gov.

Comments 1-18 Patagonia Area Resource Alliance (PARA) Comments Written and Oral Comments

Comments 1-18 were submitted by Patagonia Area Resource Alliance (PARA), Arizona Mining Reform Coalition, Borderlands Restoration Network, Center for Biological Diversity, Earthworks, Friends of the Santa Cruz River, Friends of Sonoita Creek, Sierra Club (Grand Canyon Chapter), and Tucson Audubon. PARA also submitted a summary of their comments.

The following individuals also attached or incorporated PARA’s comments and/or comment summary with their comments: Cholla Rose Duir, Gary Townsend, Murphy Musick, Sharon Calvert, Ryan Civic, Jonathan White, Terri Engel, Mary Ellen Kazda, Valerie Neale, Nancy McCoy, Ralph Schmitt, Pamela Lemke, Kerry Schwartz, Michelle White, Melanie Morrison, Skye Leone, Susan Patla, Nancy Coyne, Randall Moore, Denise FOREST, Dawn Busse, Chester Busse, David Fain, Lynn Davison, Margaret Faucher, Marc Faucher, Carol Milligan, Jay Thompson, Eric Findeis, Mark Willaman, Ann Gosline, Blue Evening Star, Gerald Rodman, Cameron Falconer, Cornelia OCONNOR, Edward Pirl, Laura S Monti,

Celinas Ruth, Robin Lucky, MagiCa Castillo, Martha Fisher, Jeanette Joy, Miriam Gilbert, Julie Holding, Sean Manion, Gary Levine, Orion Niles, Julie Arma, Anita Conner, Caleb Weaver, Tina Brubaker, Joe Harding, Yuri Hauswald, Emily Kachorek, Z S, DaMaeAn Steinhardt, O'Breean Mikael, Gayle Perrine, Robert Speckels, Dr. Gregg Gorton, Kazarian Giannangelo, and Karene Bennett.

Comment 1:

A new source determination must be made for the January Mine Hermosa Project as the first step in the permit evaluation process and before an AZPDES permit may be issued. ADEQ must determine these new facilities to be legal "new sources" of discharge – before issuing this renewed Permit. A new source determination must be made for the facility as the first step in the permit evaluation process. ADEQ must revise the Permit to acknowledge that this mine is expected to go into production during the life of this Permit. ADEQ continues to mislead the public by vaguely describing South32's activities as no more than an exploratory project. As a new source, the mine is subject to all modern performance standards and requirements of the Clean Water Act. ADEQ's workaround proposal to only allow discharge from "historic tailings" into Alum Gulch is absurd. It ignores documented facts about how South32 has operated this mine site for years. It also disregards the well-known fact documented by both South32 and ADEQ that the tailings pile and mine seepage from this pile includes dangerous new sources of pollutants. Indeed, the tailings pile has, for years, been used by South32 to hold many tons of new waste rock, exploration rock, treatment plant waste, and potentially acid-generating material. ADEQ's tortured analysis and conclusion that the only mine seepage that will be discharged to Alum Gulch from the tailings pile will come from historic tailings is wildly inaccurate and misleading to the public. ADEQ must revise this provision – before issuing this renewed Permit.

ADEQ Response:

ADEQ's AZPDES permitting process includes a determination of whether a facility is a "new source." ADEQ has considered if any "new source" requirements are applicable to this facility (see New Source Considerations section of the fact sheet).

Per 33 U.S.C. § 1316 (a)(2) and 40 CFR Part 122.2, a new source "means any building, structure, facility, or installation from which there is or may be a 'discharge of pollutants,' the construction of which commenced: (a) After promulgation of standards of performance under section 306 of CWA which are applicable to such source, or (b) After proposal of standards of performance in accordance with section 306 of CWA which are applicable to such source, but only if the standards are promulgated in accordance with section 306 within 120 days of their proposal." Effluent limitation guidelines applicable to ore mining and dressing, 40 CFR Part 440, Subpart J were promulgated on December 3, 1982. Therefore, any sources of discharge that predate December 3, 1982 are existing sources.

On July 7, 2023, in accordance with the Arizona Court of Appeals' decision in *San Carlos Apache Tribe v. State of Arizona* decision, South32 notified ADEQ that it was no longer seeking approval to discharge from Outfall 001 to Alum Gulch either a) tailings seepage or runoff once dry stack tailings from a future mill are added to the existing tailings storage facility, or b) water from new shafts or declines advanced at the site to further ongoing exploration and potential future production from Outfall 001. ADEQ updated the permit accordingly.

Based on South32's July 7, 2023 letter, Part I.A.1.b. of the permit states that "the only allowable discharges from Outfall 001 are drainage water from historic workings associated with January Adit, drainage water from historic tailings, and stormwater." The permit does not authorize

South32 to discharge into Alum Gulch water from any materials that are not included in the definition of “historic.” “Historic” is defined in Appendix A. Part B of the permit as follows: “for the purposes of this permit, historic means created before December 3, 1982, which is the date effluent limitation guidelines applicable to ore mining and dressing (40 C.F.R. Part 440, Subpart J) were promulgated.”

On June 27, 2024, the Arizona Supreme Court vacated the Court of Appeals’ “new source” analysis in *San Carlos*. The decision provided a clear process for determining whether a construction is a “new source”. While this decision provides South32 with other discharge options, the permit was not revised in response to the decision and instead limits discharges in accordance with South32’s July 7, 2023 letter. In order to change discharging locations, South32 would be required to submit a permit modification.

ADEQ determined that a new source analysis is not needed for discharges from Outfall 002 to Lower Harshaw Creek for the following reasons:

1. Lower Harshaw Creek is not impaired. Therefore, there is no new source prohibition for discharges to Lower Harshaw Creek. Upper Harshaw Creek has an EPA-approved TMDL for copper and pH. See ADEQ’s response to comment 4 for more information about the Upper Harshaw Creek TMDL. The discharge from January Mine Hermosa Project will be downstream of the segment covered by the TMDL. See ADEQ’s response to comment 3 regarding the location of Outfall 002.
2. The WQBELs established in the permit are more stringent than the new source performance standards (see Numeric Water Quality Standards section below).

ADEQ acknowledges that the mine may go into production during the life of the permit. As stated above, the permit only allows discharges from existing sources to Alum Gulch. If the mine goes into production, these discharge restrictions remain in place. Effluent limitations and monitoring requirements remain effective for all discharges. ADEQ’s description of exploration activities in the fact sheet reflects the current activities at the facility at the time the fact sheet was written. During consideration of this comment, ADEQ decided to remove the notification requirement for new tailings previously listed in Part IV.C. The notification indicated that new tailings were the only material that could create a new source. ADEQ acknowledges that other materials or actions may create a new source.

Furthermore, please note, the permit contains water quality-based effluent limitations (WQBELs). Wasteload allocations (WLAs) from the Alum Gulch TMDL are included for parameters where the WLAs are more stringent than WQBELs (for Outfall 001). The limitations in the permit, based on the WLAs and WQBELs, are more stringent than the new source performance standards (NSPS).

See also ADEQ’s response to comments 2 and 4.

Comment 2:

The outdated Alum Gulch TMDL (for cadmium, copper, pH, and zinc) must be updated and a new Alum Gulch TMDL study must be completed on the new lead impairment in Alum Gulch – before ADEQ issues the renewed Permit.

ADEQ Response:

This permit only authorizes discharges to Outfall 001 related to historic mine drainage water and tailings, which predate promulgation of pertinent mining Effluent Limitation Guidelines on December 3, 1982. Therefore, any prohibitions or restrictions on new sources or new dischargers are not relevant to Outfall 001 because all discharges are from existing sources. Furthermore, the Arizona Supreme Court vacated the Court of Appeals' new source and TMDL analyses in *San Carlos* that prohibited new sources from discharging into impaired waters prior to a TMDL being written. ADEQ may authorize discharges from new sources prior to completing a TMDL in accordance with A.A.C. R18-9-A903(7).

The Alum Gulch TMDL is an EPA-approved TMDL. ADEQ must implement the current TMDL in applicable AZPDES permits. Alum Gulch has been listed as impaired for lead during Arizona's 2022 Clean Water Act Assessment. Per 33 United States Code section 1313(d) and Arizona Revised Statutes 49-235, a TMDL is required by law for Arizona's list of impaired waters, including Alum Gulch. ADEQ will update the Alum Gulch TMDL to include the new lead impairment. As stated above, existing sources may continue to discharge to impaired waters. A water quality-based effluent limitation (WQBEL) for lead is included in the permit to ensure the discharge meets surface water quality standards.

Comment 3:

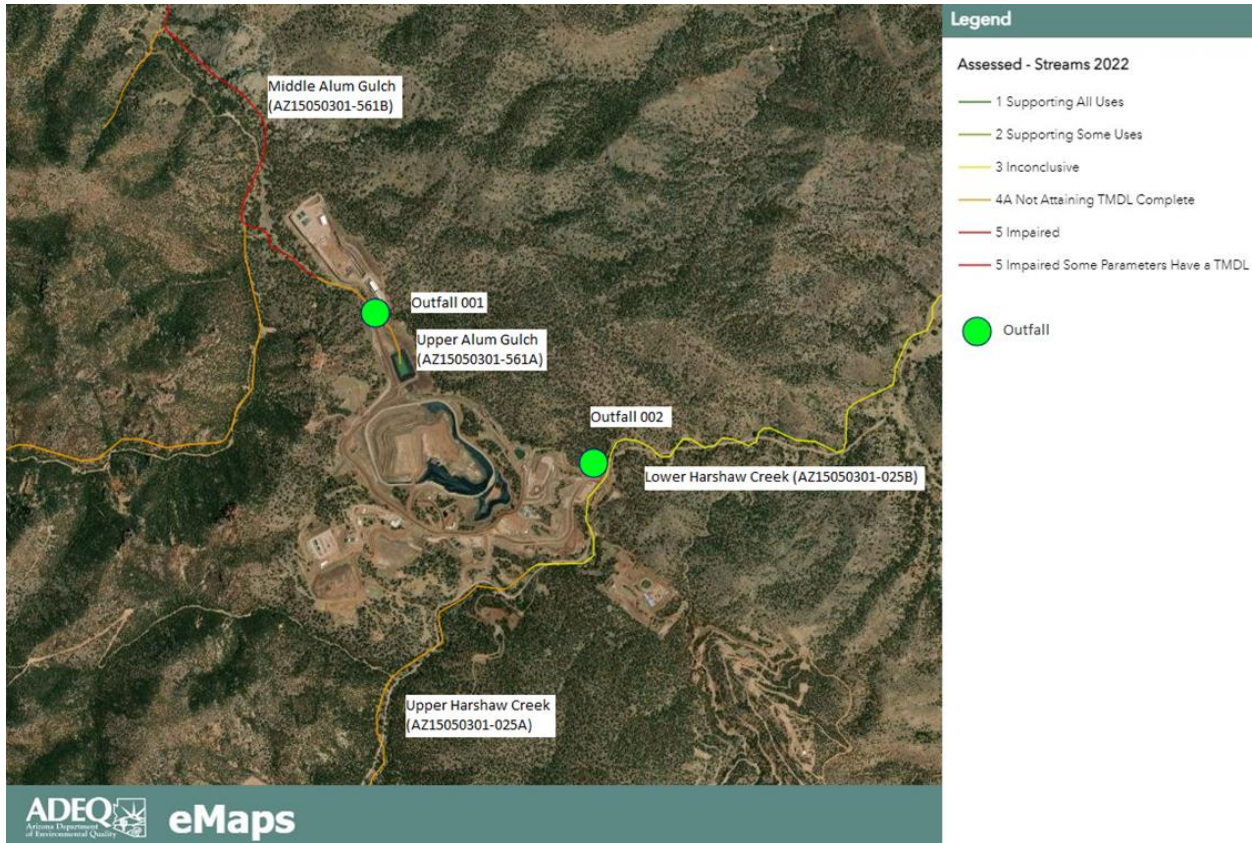
ADEQ claims without basis that the discharge location (Outfall 002) is in Lower Harshaw Creek. However, PARA has provided ADEQ with extensive evidence and documentation showing that Outfall 002 is actually constructed in Upper Harshaw Creek which is listed as impaired for various pollutants under Arizona's Clean Water Act 303(d) list. Accordingly, ADEQ must revise its grossly outdated TMDL for Upper Harshaw Creek before issuing this renewed Permit.

ADEQ Response:

Per ADEQ's 2022 Clean Water Act Assessment, Upper Harshaw Creek, from the headwaters of Harshaw Creek at 31°27'43.9" N, 110°43'21.1" W to 31°27'43.9" N, 110°43'21.1" W, is impaired. Lower Harshaw Creek from 31°27'43.9" N, 110°43'21.1" W to the confluence with Sonoita Creek at 31°32'35.91" N, 110°44'45.12" W, is not impaired. Outfall 002 is located at 31° 27' 57" N, 110° 43' 12" W, which is in Lower Harshaw Creek. Updating the TMDL for Upper Harshaw Creek is not relevant to this permit because the discharge location is Lower Harshaw Creek.

In 2014, ADEQ divided Harshaw Creek into Lower and Upper Harshaw Creek per an internal memorandum. ADEQ assigns each surface water reach an identification number known as a Waterbody Identification Number or WBID. ADEQ previously had one WBID for Harshaw Creek (15050301-025). The memorandum stated that Harshaw Creek would be divided into two segments, Upper Harshaw Creek (15050301-025A) and Lower Harshaw Creek (15050301-025B), based on the evidence that the lower portion of Harshaw Creek is not impaired, as described in the Harshaw Creek TMDL. Section 2.3 of the Harshaw Creek TMDL states, "The 3-mile long subject reach is primarily ephemeral with a perennial spring located approximately 50 ft. above the downstream end of the listed reach." Section 2.7 of the Harshaw Creek TMDL states, "Lower Harshaw Creek, starting at the downstream end of the study reach and continuing approximately 11 miles to its mouth on Sonoita Creek, is not included on the 303[d] List and, therefore, not addressed in this TMDL." As supported by the TMDL, the impairment ends upstream of Outfall 002, and Outfall 002 is in Lower Harshaw Creek.

See also map of the receiving waters and assessment status as of the 2022 Clean Water Act Assessment:



Comment 4:

ADEQ must acknowledge the impairments in Lower Harshaw Creek and prepare a TMDL for Lower Harshaw before it can issue the proposed AZPDES permit.

ADEQ Response:

Per 33 United States Code section 1313(d) and ARS 49-235, a total maximum daily load must be developed for water bodies on the 303(d) list (Arizona’s list of impaired waters) in accordance with the state’s priority rankings. Lower Harshaw Creek is not on the 303(d) list. Therefore, no TMDL is required for Lower Harshaw Creek.

See ADEQ’s response to comment 3 regarding the location of Outfall 002.

Comment 5:

ADEQ must acknowledge that South32 is discharging to Harshaw Creek under an expired AZPDES permit and revise this Permit accordingly to include this discharge data in calculating permit limits – before issuing this renewed permit.

ADEQ Response:

ADEQ does acknowledge that South32 is discharging to Lower Harshaw Creek, as authorized by their administratively continued AZPDES permit (see ADEQ's response to comment 18). The permit and fact sheet reflect the data available at the time they were written.

Comment 6:

Patagonia Area Resource Alliance (PARA) referenced and attached their comments on 2024 Clean Water Act Assessment.

ADEQ Response:

ADEQ acknowledges that PARA commented on ADEQ's 2024 Clean Water Act Assessment (Assessment). ADEQ addressed those comments in a response to comments document for the Assessment. The response to comments was published in the Arizona Administrative Register (A.A.R.) on December 8, 2023. ADEQ will not address comments regarding the Assessment in this response to comments as they are out of scope for this public notice and response to comments regarding the January Mine Hermosa Project. The 2024 Assessment had a public notice and comment period from June 28, 2023 through September 11, 2023.

Comment 7:

ADEQ must complete a TMDL for the zinc impairment in Sonoita Creek before issuing the draft permit. ADEQ must perform a waste load allocation for the discharges to Sonoita Creek. This is required by the Clean Water Act so that South32's discharges will not further contaminate or degrade these downstream surface waters but rather can support the future restoration of water quality in the Creek.

ADEQ Response:

ADEQ is not required to complete a TMDL for Sonoita Creek prior to issuing the permit because South32 does not propose to discharge to Sonoita Creek. The prohibition on issuing an AZPDES permit to a new source or new discharger in 40 Code of Federal Regulations (C.F.R.) § 122.4(i)(1)-(2) and Arizona Administrative Code (A.A.C.) R18-9-A903(A)(7) does not apply to water segments downstream of the discharge location.

Furthermore, the 2024 Clean Water Act Assessment determined Sonoita Creek is no longer impaired and delisted Sonoita Creek from the 303(d) list. This removes the requirement to complete a TMDL. The 2024 Clean Water Act Assessment and Appendices are available on ADEQ's website (<https://www.azdeq.gov/notices/extended-comment-period-begins-draft-2024-clean-water-act-assessment>).

Comment 8:

ADEQ must revise the Draft Permit to require monitoring for manganese and sulfate in order to protect human health and the drinking water systems and infrastructure of the Town of Patagonia and residents of the area before issuing this renewed Permit. ADEQ should specify discharge limits for all 15 of the EPA's National Secondary Drinking Water Regulations (NSDWR) contaminants.

ADEQ Response:

In response to this comment, ADEQ added assessment levels for manganese to Tables 2.a and 2.b of the permit. An assessment level differs from a discharge limit in that an exceedance of an assessment level is not a permit violation. Instead, assessment levels serve as triggers, alerting ADEQ when there is cause for re-evaluation of Reasonable Potential for exceeding a water quality standard, which may result in new permit limitations. Reasonable Potential Analysis is

how ADEQ analyzes whether a pollutant could cause or contribute to a SWQS exceedance. Assessment levels are based on Arizona's surface water quality standards (SWQS). ADEQ also added monitoring requirements for manganese to Tables 4.a. and 4.b.

There are no SWQS for sulfate; therefore, The AZPDES program does not have authority to require monitoring for sulfate.

ADEQ has no legal authority to implement NSDWRs as effluent limitations in AZPDES permits. NSDWRs are non-enforceable guidelines for public water systems per 40 C.F.R. 143.1.

Arizona does have SWQS applicable to the DWS or "Domestic Water Source" designated use in A.A.C. R18-11 Appendix A. DWS means the use of a surface water as a source of potable water. Treatment of a surface water may be necessary to yield a finished water suitable for human consumption. To be regulated under DWS standards, the water in question must have a designated use as a DWS or "Domestic Water Source" in accordance with A.A.C. R18-11-104(B). For the DWS designation to apply, the specific surface water must have a drinking water intake located along it. Neither Harshaw Creek nor Alum Gulch has a DWS designated use per A.A.C. R18-11 Appendix B.

Comment 9:

Assessment Level (AL) monitoring should be done at least monthly, not quarterly. These results could mask or conceal high concentrations that otherwise "may trigger evaluation of Reasonable Potential (RP) by ADEQ."

ADEQ Response:

ADEQ sets monitoring frequencies based on numerous factors. ADEQ assesses the type of facility, the design capacity, treatment method used, compliance history, location of discharge and the type of pollutant being monitored per the NPDES Permit Writers Manual, Section 8.1.3.

ADEQ increased the monitoring frequency for ALs for Outfall 002 to monthly based on this comment and other comments regarding the need for more frequent monitoring. ADEQ agrees that monthly monitoring would provide sufficient data to assess the discharge. Monthly monitoring is appropriate for a discharge of this volume from a major facility. Limited data is currently available for Outfall 002, and monthly monitoring will provide data to characterize the discharge and identify any action level exceedances. AL monitoring for Outfall 001 remains quarterly. Quarterly monitoring remains sufficient to assess the level of pollutants in the discharge from Outfall 001. Discharge from Outfall 001 is expected to be lower frequency and volume than discharges from Outfall 002.

The reporting of monthly or quarterly average values will not affect RP determinations because ADEQ does not use monthly average values to determine RP. When ADEQ determines RP, ADEQ examines the results of each individual sample per the EPA's Technical Support Document for Water Quality-based Toxics Control (TSD, see Numeric Water Quality Standards Section of the fact sheet).

Comment 10:

The use of ANFO (ammonium nitrate-fuel oil) produces highly elevated concentrations of nitrate (nitrate/nitrite as N) and ammonia in mine-influenced water from mines. Therefore, determining

nitrate+nitrite (as N) and ammonia is recommended for the Assessment Level parameters (rather than Total Kjeldahl nitrogen).

ADEQ Response:

The permit does contain assessment level monitoring for nitrate+nitrite. Total Kjeldahl Nitrogen (TKN) is the sum of ammonia nitrogen and organic nitrogen; therefore, ADEQ believes TKN will provide adequate information regarding the presence of ammonia in the effluent.

ADEQ may modify the permit and impose additional monitoring requirements and/or effluent limitations if concentrations of nitrate/nitrite and/or TKN in the effluent cause concern. Per Part IV.A, "this permit may be modified per the provisions of A.A.C. R18-9-B906, and R18-9-A905 which incorporates 40 C.F.R. Part 122. This permit may be reopened based on newly available information; to add conditions or limits to address demonstrated effluent toxicity; to implement any EPA-approved new Arizona water quality standard; or to re-evaluate reasonable potential (RP), if Assessment Levels in this permit are exceeded." Such a modification would undergo a public notice and comment period.

Comment 11:

Discharge characterization testing should be done at least monthly to capture seasonal variation.

ADEQ Response:

ADEQ sets monitoring frequencies based on numerous factors. ADEQ assesses the type of facility, the design capacity, treatment method used, compliance history, location of discharge and the type of pollutant being monitored per the NPDES Permit Writers Manual, Section 8.1.3.

In response to this comment, ADEQ updated the frequency for discharge characterization testing for WTP2 (Outfall 002) to monthly with the exception of Whole Effluent Toxicity (WET). A monthly sampling frequency will provide sufficient data to characterize the effluent for this facility.

The frequency of discharge characterization remains at once every 6 months for WTP1 (Outfall 001). Sampling at a frequency of once every 6 months will provide adequate data during the permit term and will capture variability for a facility of this size.

For information about WET monitoring frequencies, see ADEQ's response to comment 12.

Comment 12:

Whole Effluent Toxicity (WET) monitoring should be more frequent and it is unclear why daily Maximum Action Levels for Acute Toxicity are listed as "N/A" in Table 3.

ADEQ Response:

In response to this comment, ADEQ changed the daily maximum action level to "fail." The reporting of both a daily max and monthly median results when monitoring frequency is one time per month or less is a convention of discharge monitoring report (DMR) format. Acute toxicity is a 96-hour test with results of pass/fail. If an acute test fails, the permittee must perform follow-up testing per footnote 3 of Tables 3.a. and 3.b. and Part III.E of the permit.

ADEQ increased the frequency of WET monitoring for Outfall 002 to quarterly (see Table 3.b.) based on this comment and other comments expressing the WET monitoring frequency was too infrequent. ADEQ determined that more frequent monitoring is necessary to assess whole effluent toxicity from Outfall 002 due to the following reasons: 1. continuous discharge pattern, 2. design flow of the treatment system (6.48 MGD), and 3. the absence of WET test results and thus an RP assessment of “indeterminate.” Monitoring frequency is based on design capacity to obtain sufficient data to protect surface water quality.

ADEQ determined that a WET sampling frequency of one time per year remains appropriate for Outfall 001 according to the expected discharge frequency and flow.

ADEQ removed the provision to complete WET testing for both WTPs within 6 months of commencing discharge because: 1. WET testing is required for Outfall 001 at a frequency of one time per year whether the facility is discharging or not (Tables 3.a. and 4.a.); therefore, ADEQ will have WET data available for each year regardless of when discharge commences and 2. Discharge from Outfall 002 has commenced as authorized by the existing AZPDES permit.

Comment 13:

Ambient water temperature and dissolved oxygen concentration monitoring requirements are unclear. The Draft Permit at 9 (Part I(E)(3)) states that “The discharge shall not cause an increase in the ambient water temperature of more than 3.0 degrees Celsius.” However, it is unclear how ADEQ intends to implement and enforce this provision. The Draft Permit at 9 (Part I(E)(4)) states that the discharge “shall not cause the dissolved oxygen concentration in the receiving water to fall below 6mg/L for Alum Gulch (Outfall 001) and shall not fall below 3 mg/L from 3 hours after sunrise to sunset and 1 mg/L from sunset to 3 hours after sunrise for Harshaw Creek (Outfall 002), unless the percent saturation of oxygen remains equal to or greater than 90%.” Again, it is not clear how ADEQ intends to implement and enforce this provision.

ADEQ Response:

The permittee is required to monitor and report temperature for discharge characterization. Narrative standards do not have end-of-pipe monitoring requirements but are still enforceable by ADEQ. Any non-compliance with the temperature and dissolved oxygen permit requirements is a permit violation. Compliance may be assessed by ADEQ during inspections, see ADEQ’s response to comment 30 for more information about inspections.

Comment 14:

The phrase Local storm event in part I.E.5 [The discharge shall not cause the receiving water to exceed 80 mg/L (Alum Gulch, Outfall 001 only) for suspended sediment concentration, except during or within 48 hours after a local storm event.] of the draft permit is not defined.

ADEQ Response:

A.A.C. R18-11-109(D)(2) states that samples collected during or within 48 hours of a local storm event should not be used to determine the suspended sediment concentration. A.A.C. R18-11-109(D)(2) does not define a local storm event. ADEQ uses the common dictionary definitions when terms are not otherwise defined. A local storm event means precipitation in the immediate area.

Comment 15:

Hardness data must be updated. For Outfall 001, a hardness of 100 mg/L should be used to calculate permit limits. WTP1 uses ultrafiltration, which typically results in a discharge with low solute concentrations, including calcium and magnesium (the primary components of hardness). Because of the ultrafiltration step, WTP1 effluent will have a substantially lower hardness than the influent. For Outfall 002, the hardness used to calculate permit limits should be updated now that actual hardness data is available.

ADEQ Response:

Hardness data is available for Outfall 001 (WTP1) from January 2023 to March 2023. The effluent hardness ranged from 743 mg/L to 1040 mg/L, and the average effluent hardness value was 828 mg/L. The influent hardness data from January Adit ranged from 1990 mg/L to 2290 mg/L. The influent hardness from the underdrain collection pond (UDCP) ranged from 1140 mg/L to 1360 mg/L. ADEQ agrees the treatment processes at WTP1, including ultrafiltration, result in effluent hardness values lower than the influent. However, the data demonstrates that the effluent hardness is much higher than 100 mg/L. The effluent hardness from WTP1 was used to calculate permit limits for Outfall 001.

A hardness value of 400 mg/L is the maximum allowable hardness value that can be used to calculate standards, per Title 18, Chapter 11, Article 1, Appendix B, footnote d(ii). If the measured hardness value is greater than 400 mg/L, ADEQ must use 400 mg/L instead of the actual hardness values. Therefore, ADEQ used 400 mg/L to calculate the applicable water quality standards and any assessment levels or limits for the hardness dependent metals for Outfall 001 (Upper Alum Gulch). The use of 400 mg/L results in more stringent limits than the limits that would be calculated if the actual average hardness value (828 mg/L) was used.

The hardness of the influent that will be treated by WTP2 was estimated by South32 to range from 258-340 mg/L. Therefore, the lower range of the estimated WTP2 influent hardness, the more protective concentration of 258 mg/L, was used to calculate the applicable water quality standards and any assessment levels or limits for the hardness dependent metals (cadmium, copper, lead, nickel, silver and zinc) for Outfall 002 (Harshaw Creek).

On July 18, 2023, South32 also provided additional information regarding WTP2 treatment processes. WTP2 is not designed to reduce hardness, and it does not significantly reduce hardness incidentally during treatment. Furthermore, South32 provided results from a pilot campaign which demonstrate the hardness values remained consistent during the treatment process.

As of January 19, 2024, there is one effluent hardness result for Outfall 002. The effluent hardness was 277 mg/L. ADEQ believes this result supports its assertion that the lower range of influent hardness (258 mg/L) is a reasonable estimate of the effluent hardness. The permit continues to have permit limits based on the lower range of the influent; this results in more stringent limits than using the single effluent data point available.

Comment 16:

Total recoverable and dissolved concentrations must be reported for metals. Measuring both dissolved and total recoverable metals in effluent samples for one year will provide a site-specific dataset to supplement translator studies conducted by the permittee.

ADEQ Response:

ADEQ is not requiring measurement of dissolved metals at this time. Measurement of total recoverable metals remains in the permit, except for chromium VI.

Metals in water exist in dissolved and suspended forms, the combination of the two forms is known as total or total recoverable. In accordance with 40 C.F.R. 122.45(c), all effluent metals concentrations, with the exception of chromium VI, shall be measured as total recoverable metals. A number of metals have SWQS for the dissolved form of the metal (cadmium, chromium VI, copper, lead, mercury, nickel, silver, and zinc). ADEQ uses default metal translators to calculate total recoverable WQBELs and ALs from dissolved SWQS, per the EPA's *The Metals Translator: Guidance for Calculating A Total Recoverable Permit Limit from A Dissolved Criterion*. The translator represents the ratio of the dissolved metal to the total metal.

A site-specific translator may also be determined per *The Metals Translator: Guidance for Calculating A Total Recoverable Permit Limit from A Dissolved Criterion*. A site-specific translator describes the relationship between the dissolved and total recoverable forms of the metal for a specific waterbody downstream of the mixed effluent and receiving water. This translator is determined using data collected from the site.

Part IV.B. of the permit provides the option of a site-specific translator study. Submitting such a study is optional and up to the discretion of South32. The permit requires South32 to submit a sampling analysis plan to ADEQ for approval prior to collecting samples for the study. If South32 submits a sampling analysis plan, ADEQ will review it and ensure an appropriate number of dissolved and total recoverable samples will be obtained over an appropriate time frame before the translator study is conducted. Reporting of dissolved concentrations is not required for permit compliance.

Comment 17:

PARA is gravely concerned with the environmental destruction associated with South32's mine activities, particularly its dewatering activities in this region, which are specifically designed to dewater the aquifer for industrial extractive purposes. Given the importance of the Patagonia Mountains and the existence of immense biodiversity in this region, the depletion of the aquifer will almost certainly harm or even destroy numerous springs and seeps, and other surface water features, at a time when the existence of these critical water resources and the habitat they support are already under pressure from drought and climate change. The groundwater-dependent ecosystems (GDE) are valuable, and the loss of these GDEs should not be lightly brushed aside by ADEQ or South32. While these comments are directed at the ADEQ's potential issuance of a renewed AZPDES Permit to South32 to discharge mine dewatering and depressurization waters to Alum Gulch and Harshaw Creek, it must be acknowledged that the water to be permanently removed from these aquifers is currently an important part of the function and health of this important and biodiverse place.

ADEQ Response:

The AZPDES program does not have authority to regulate groundwater pumping. See ADEQ's response to comment 19.

Comment 18:

The existing AZPDES Permit expired on January 7, 2023 and the provision in Arizona Administrative Code (A.A.C.) R18-9-B904(C) does not apply because the permitted activity is not “of a continuing nature.”

ADEQ Response:

South32’s existing permit is not expired. The existing permit is administratively continued per Arizona Administrative Code R18-9-B904(C) as explained below.

Per R18-9-B904(C), a permit may be continued beyond its expiration date if: 1. The permittee has submitted a complete application for an AZPDES individual permit at least 180 days before the expiration date of the existing permit and the permitted activity is of a continuing nature; and 2. The Department is unable, through no fault of the permittee, to issue an AZPDES individual permit on or before the expiration date of the existing permit.

South32 submitted a timely renewal application on July 11, 2022, within 180 days before the expiration of the existing permit. The permitted activity is of a continuing nature because they are seeking renewed permit coverage for the same authorized discharges that they are currently permitted for. There is no requirement in R18-9-B904(C) or the Clean Water Act that the facility begin discharging and continue discharging to meet the criteria of “a continuing nature.” ADEQ was unable, through no fault of the permittee, to issue an AZPDES individual permit on or before the expiration date of the existing permit. Therefore, the existing South32 AZPDES permit is continued by law.

Comment 19**Comment Letter Circulated by the Sky Island Alliance
Written Comment**

Comment 19 or a slight variation was submitted by:

Hannah A, Kathi Abbott, Gail Abend, Sara Abrams, Leif Abrell, Leeann Ackerman, Brent Adams, Donna Adams, Terry Adams, Mary Adams, Emily Akowski, Bianka Alban, Holly Albrecht, Fernanda Aldaz, Eric Aldrich, Autumn Alexander, Julie Alintoff, Neale Allen, MaryHolly Allison, Tarbous Ally, Moath Alsayar, Mabel Alsina, Pamela Alvesteffer, Ceanne Alvine, Ella Anderson, Claire Anderson, Craig Anderson, Anne Anderson, Eric Anderson, Kim Antieau, Lindsay Appel, Katy Arvizu, Sonia D. Astorga, Carolin Atchison, James Austin, Crissi Avila, Anthony Avila, Onur Azeri, Ashley Azzone, Neil Bachman, April Bachman Leonard, Kenneth Bader, JOSEPH BAIL, Mike Baker, Anika Bakken, Katrina Bakken, Clarice Bales, Jonah Barber, Autumn Barger, Angelica Barragan, Cynthia Barstad, Taylor Barter, Benjamin Bartholome, Shanon Batchelor, Laa Bauer, BOB BAUMAN, Steve Baumann, Nick Beauregard, Niya Begay, Robert Behrstock, Molly Beilstein, STEPHANIE BELL, Logan Bell, Skylar Benedict, Alice Bennett, Duncan Benning, Gregory Benoist, David Benterou, Lon Berg, Liz Bergum, Bart Berlin, Alan Berman, Karen Bernauer, Luke Bertelsen, Amanda Betz, Dirk Beving, Brian Bewick, Sabrina Bhat, Bettina Bickel, LK Bingham, Suvi Birch, Jill Bishop, Nicholas Bishop, Jordan Black, Danielle Blackwell, Ellen Bledsoe, John Bloch, Thomas Boggan, Ella Boker, Murray Bolesta, Cori Bomgardner, Sharon Bonini, Martha Boose, Eric Borg, Erin Botz, Caroline Bowes, Helene Bowles, Jasmine Boyd, Kelsey Bradley, Veronica Bradley, BLAKE BRADY, Rick Bramhall, Susan Brandes, Angel Breault, Lucia Breault-Evans, Gillian Brewer, Clinton Bright, Fern Bromley, Alexandria Brown, Stephen Brown, Kalyn Brown, Patrick Brown, Riley Brown, Christie Brown, Tina

Brubaker, Elizabeth Bruckheimer, janay brun, Gillian Bryant, Melissa Bryant, Bradford Brycr, Laura Buchanan, Barbara Buck, Dave Buckert, Judy Buckert, Dave Burnett, Deidra Bustos, Patrick Butler, Ava Butler, Maureen Buttner, Omar Caballero, Jodi Cable, Brittany Cafazzo, Kate Callahan, anne campbell, Fanny Cantu, Louis Cardona, Rebecca Carniello, Ingrid Carpenter, donna carpenter-bertolini, Dillon Carrillo, Megan Carter, Tricia CarterSpurio, Pam Case, Nancy Chaffee, Christine Chalumeau, aleisha chamberlain, Tammy Chambers, Scott Chambers, Tiff Chang, Joshua Chapple, Donna Chesner, Moriah Childers, D G Chilson, joseph ciaramitaro, Annette Cicconetti, James Cieslak, Mary Clark-Kuebler, Francesca Claverie, Philip Clevinger, Keith Cliver, Steve Clough, Lany Clough, Lex Coburn, Patricia Coghlan, Howard Cohen, Sarah Cole, Nora Collins, Francis Colwell, Michael Connelly, Sally Connelly, Anita CONNER, Maria Conners, Richard Connors, David Contreras, Connie Cook, Alejandro Cooper, James Cornell, Chrysta Coronado, Heather Cossette, LAURA COUCHMAN, Wylie Cox, Jane Cox, Rebecca Craft, Jeanne Crane, Matthew Creek, Max Cronyn, Mari Crook, Christian Cross, Laure Crown, Blake Croysdale, Christine Cummins, John Curry, Christine Curtis, Heather Cutlip, Madison Daniels, Robyn Darnell, Karrie David, Diane W Davidson, Kat Davis, Patience Davis, Keely Davis, Liane Davis, Deshawn Davis, Michael Day, Michael Dayton, Cerelda De Heus, Vanessa Dearing, Rebecca DeBoer, Caitlin Deighan, Sierra Delgado, Rachel DeLozier, James DeWolf, Fernando Diaz, Kathy Dick, Virginia Dickinson, Keri Dixon, Britt Dobroslovic, Mary Doll, Stephan Donovan, Karen Dotson, Patricia Downer, Lynne Downes, Diana Doyle, Derek Drabicki, Constance Dry, Steve DuBay, kathy dubbs, Jesus Duenas, Garry Duffy, McKenna Dukes, Amanjyot Dusanjh, Anna Dusold, Kristen Dymment, Anna Dysart, Larry East, Laura Eaton, Ron & Jan Eckstein, Elsie Edmiston, Gabe Ehlert, William Eimers, Sherry Eisler, Fernanda Elias, Matt Elliott, Tira Ellis, Jeanne Emmerson, Terri Engel, Savannah Engelking, Carl Englander, Diana Englert, Leslie Ann Epperson, vadi erdal, Matthew Erickson, Brian Erickson, Ozlem Erol, alma espinosa, Lupita Estrella Garcia, jna etra, Robert Evans, Douglas Everett, Ann Ewing, Sammantha Fabish, Jenn Falcon, Lisa Falk, Susan Faubion, Margaret Faucher, Ginny Fay, Peter Feldman, Gloria Fenner, Dennis Fesenmyer, Karen Figueroa, Zackary Finster, Lynne Firestone, Aimee Firth, Beverly Fisher, Elizabeth Fistel, Lee Fister, Anthony Ford, Liza Fotz, Richard Franklin, Melissa Fratello, Margot Fray, Geologist Fred, HOWARD FREDERICK, Pa Frederick, Donna Freeman, Judy Freeman, Joshua Freeman, Gregory Freeman, Stephanie Frizzell, Chris Frost, Ashley Fruhwirth, Lena Frushon, Ada Fryer, MARYANNE FULTON, Laura Galvan, Nancy Gammon, Cheyene Garcia, Alfredo Garcia, Emily Gardner, Faith Garfield, Norma Jean Gargas, Cynthia Garman, James Gaskill, Chelsea Gay, John Gesme, Sarah Ghusson, Emily Ghusson, Sandra Gianotti, Bill Gilchrist, Regina Gillis, Nicolas Glatt, kathleen glatz, kathy glatz, Zoë Goehring, Taylor Goforth, Elliott Goldner, Wolfgang Golser, Sydney Goltry, Maria Gomez Murphy, Anne Gondor, Lyvier Gonzales, Zoraida Gonzalez, Matt Goode, John Goraj, Catherine Gorman, Gregg Gorton, Patty Gosselin, Sophia Grady, Giovanni Granados, Tina Greenawalt, Wade Greene, Jess Greenwood, Jimmy Gribbin, Gordon and Joan Griffes, Matt Griffiths, Rey Grivois, madeline guendel, Colin Guiley, Julia Hackett, Rebecca Hagen, Janice Haggerty, Sandra Haire, Joan Hall, Joseph Hall, Claudia Halsell, Carolyn Hancock, Adam Hannuksela, Elysia Hansel, Mary Ann Hanson-Germond, Aileen Hardcastle, Spencer Harding, Jessie Harlan, Lisa Harmon, nancy Haro, Dennis Hart, Paula Hartgraves, Steven Hastings, Dani Hawle, Philip Hedrick, Alice Henderson, Dianna Henderson, Susan Hennessy, James Henriksen, Deborah Herczog, Eric Herman, Brandon Herman, Dulce Hermsillo, Jennifer Hernandez, Veronica Heron, Brooke Herr-Cardillo, Brooks Herr-Cardillo, Mia Herrera, Elizabeth Herring, Jerry Hester, Alicia Higgs, blake hilburn, Anne Hinnendael, Terra Hockett, Hilary Hodges, Natalie Hoffman, Melissa Hoffman, Christine Hogan, Clarissa Holguin, Courtney Holman, Colin Holmes, Eric Hough, Brian Howard, george howard, Laura Howe, Paul Huddy, Mallory Hughson, Jeff Humphrey, Cynthia Hunter, Meghan Hurley, Victoria Infante, Patricia Isaacson, Oscar Islas Jr., Catherine Itule, Natasha Ivanov, Sky Jacobs, Edith Jacobsen, Jacqueline Jacqueline Fortin, Jamela Jafari, Nadia Jai, Jessica James, Kathleen James, Kristi Jenkins, Mark Jennings, Laura Jensen, Christine Jimenez, Beth Johannessen, Ciera Johnson, Collin Johnson, Robert Johnson, Cheryl Johnson, Holly Johnson, Richard Johnson, Mark Johnston, Brian Jones, Patsy Jones,

Barbara Jones, Sean Jones, Karoline Jones, Tomas Jonsson, Kathleen Juracka, Smith Jury, Leonora Kabala, John Kachorek, Aaron Kachorek, Joel Kaletta, Summers Kalishman, Paula Kamps, Elizabeth Kane, Carl Kanun, Wyatt Kanyer, Alfred Kaszniak, Elizabeth Kaszniak, Prudence Katze, Julie Kauffman, Andrew Kayner, Allison Kelley, Leyla Khalif-scott, Sumita Khanna, Jessica Kiener, Sandra Kight, Keith Kleber, Tammy Klein, Maurita Kling, MARY KLINKEL, Alison Knutson, Kathryn Koch, David Koch, Brittini Koski, Alex Kosmider, Daniel Kozlak, Cynthia Krakowski, Julie Kramer, Cindy Kreiman, Rebecca Kruchten, Richard Krueger, Nicholas LaBelle, Jan Labiner, Jessica Lackey, Jeff Ladderud, Roma Lamor, Alina Landa, Linda Langer, Rhianyon Larson, Dona LaSchiava, Chad Lash, Sebastian Lauber, Lika Lawson, Allison Leach, Efrain Leal, Efrain Leal, Melanie Leandro, Talia Lee, Eugenia Lee, Cassidy Lee, Ariel Léger, Kate Lemke, Pam Lemke, Gabriel Leon, Skye Leone, Kai Lepley, Gary Levine, Kayla Lewis, Harry Lex, Grace Liatti, Joyce Libdan, Don Lightner, Diane Liguori, Marcia Lincoln, Nikita Lindgren, Catherine Lipscomb, Sandra Long, Karen Lopez, Roberto Lopez, Alexa Lopezlira, Marigold Love, Diane Love, Jim Loveland, Mia Lozano, Deborah Lucas, Pauline Lucas, Lucy Lucero, Karen Lucero, Robin Lucky, Sarah Lynch, Mary Lyons, N M, Jennifer MacKay, Glenn MacRae, Katie Macyshyn, Rosemary Mahoney, Jennifer Majchrzak, Marc Majewski, Laurel Major, Brannon Mamula, Danny Mandel, Jacqueline Mann, Ramon Manriquez, Ramón Manriquez, Francine Manspeaker, Steven Mantani, Karina Marcano, Kathleen Martin, James Martin, Karen Martin, Alina Martin, Christy Martin, Cecilia Martinez, Brad Mascal, Luke Maskarinec, Loren Mason-Gere, Sherry Massie, Carol Masuda, Betina Mattesen, Shanai Matteson, Jacques Mauger, Jeffrey Maxcy, Matthew Mayer, Rose Mazzarella, Gary McCormick, Katelynn McCorquodale, Hannah McCreight, Teal McFarland, Grace McGuire, MaryJo McIntosh, Troy Mckaskle, Martha McKee, Janey McLean, John McLean, Cecilia McNicoll, Samantha Meader, Vic Meadow, Andrew Means, Julia Mehrer, Verena Meiser, Brandon Meister, Katie Mena, Jackie Mendelson, Mark Menefee, Grace Merritt, Jennifer Merritt, Daniel Meyer, Anna Meyer, Emil Meyers, Rebecka Meyers, Rick Mick, Deborah Milillo, Michael Milillo, Ruth Miller, Kaily Miller, Carrie Miller, Cindi Miller, Lee Miller, Logan Miller, Jordan Mills, Andrea Miritello, Kristina Misch, Gregory Mishaga, Emily Moddelmog, Bruce Moehlman, Marianne Moesch, Joseph Mogul, Kristi Mohn, Molly Molloy, Josh Mongerson, Timothy Moore, Denise Moreno, Blanche Moreno, Kate Morgan, Anna Morris, John Moss, Allegra Mount, Ted Mouras, Donna Mueller, MP Mullarkey, Sherry Mullens, Tamara Muller, George Munoz, Angela Murphy, Andrew Murray, Rana Mustafa, Eric Myers, Ted Myers, Thomas Nelson, Juno Neubaum, Lucas Neves, Alexa Ng, Ryan Niccum, Cherry Niel, Ezekiel Nierenberg, Molly Niven, Sherrie Nixon, Sherrie Nixon, Dylan Nolan, Belinda Norby, Sonya Norman, Mary Normandia, Gabriel Norzagaray, James Notestine, Shala Obenchain, Kayly Ober, Lisa O'Brien, Kathy O'Brien, Amy Oliver, Scott Olmstead, Kathy Olmstead, Victor Ong, Jesus Orduno, Omar Ore-Giron, Dana Orozco, Valerie Osborne, Donna Owens, Irelia Ozaeta, Kevin Pakulis, Aleesa Palmer, JOHN PALTING, Nicole Parks, Chris Parsons, John Parsons, Joan Patch, Taylor Paxson, Annikah Peabody, Caryl Pearson, Nancy Pearson, Pamela Pelletier, Sandra Pena, Brittany Pena, Cynthia Pena, Trevor Perelson, Marisa Pesa, Pamela Pesqueira, Gillian Peterson, Susan Petti, Henley Phillips, Judy Phillips, Nancy Phillips, Kayla Pierpaoli, Beth Pirl, Frank Pitts, Sharon Poessel, Maria Polanco, Christopher Polley, Kenneth Porter, Pat Poulsen, Elaine Powers, Mel Preston, Colin Price, Jon Prochera, Jonathan Prochera, Robert Proctor, Roberto Puerta, Eph Pyfrom, Richard Quade, Paulo Quadri, Melissa Quercia, Lindsey Quesinberry, Alia Raderstorf, Marcia Radke, Heather Raftery, Daryl Ragan, Luis Ramos, Sean Randall, Eva Randolph, Rebecca Mendoza, Susanne Reddoch, Dr Lisa Redpath, Janet Reedle, Patricia Rees, Julie Regalado, Vanessa Register, Lydia Rennalls, Dolores Restrepo Macias, Timothy Reynolds, Janet Reynolds, Abby Rhinehart, Bill Richards, Tom Richardson, Alford Richman, Christine Riebock, Joshua Riechers, Justin Risley, JAY RITCHEY, Madaline Ritter, Christine Robie, Maria Sofia Robledo Rower, Angie Rocha, Ken Rodgers, Maritza Rodriguez, Eryc Rodriguez, Larissa Rodriguez, Makena Roeswood, Randy Rogers, Laurel Rohrer, Micheal Rohrer, Esmeralda Roman, Michael Ross, Lloyd & Noreen Rossa, Brit Rosso, Richard Roth, Janet Rothers, Rose Ann Rowlett, James Rozelle, Jordan Ruiz, Rachel Runnalls, Debora Runyon, Hela Russell, Katerina Sacoman, Carl Sadlier, Kara Sajeske, Luis

Salgado, Justin Samuels, steve sanchez, Nicole Sanderson, Elaine Santo, David Sarich, Moira Sartin, Silas Saunders, Cynthia Sayre, Christine Sbragia, Stephanie Scavelli, Josh Schachter, Melissa Schanta, Kyle schanta, Eric Scheuering, Sylvia Schick Young, Thomas Schmidt, John Schoen, Mary Sky Schoolcraft, Anastasia Schubert, Delores Schultz, Ben Schultz, Cheryl Schultz, Sophie Schwarz, Gabriel Scott Buechler, Susan Screven, Tracy Sear, Sharon Segal, Peter Segal, Jana Segal, Dominique Sevi, Elizabeth Shadle, Carolyn Shafer, Eve Shapiro, Susen G. Sharkey, Shawna Shawnté, Nathan Sheinbein, Koren Sherrick, Jamie Shields, Jeanine Shimatsu, Catlow Shipek, Ross Shipley, Michael Shores, Patty Short, Susan Silverman, Emma Simonson, Emily Simonson, Wendy Sims, Sheila Slaughter, THOMAS SLAWSON, aminah Slor, Tyler Smith, Sarah Smith, Benicia Smith, Tobias Smith, Eric Smith, Malory Smith, Kenneth Smith, Jeff Smith, Fran Smitherman, Joseph Snowdon, Linda Snyder, Laurie Soderholm, William Soland, Robin Solari, Jody Solow, Lynn Sommerfeld, Rohan Sorta, David Sosna, Michael Sousa, Deb Sparrow, Barbara Spiers, Richard Spotts, Alexis Stark, david steadman, Peggy Steffens, Carrie Stern, Estelle Stern-Eilers, Kathryn Stewart, Trevor Stewart, Frank Stieber, Linda Stitt, Michael Stock, Owyn Stokes, tim storer, Caleb Strand, Jack Strasburg, Philip Strickland, Selma Stultz, Sam Stumpf, Linda Moon Stumpff, Elsa Suarez, Carmen Suarez, Molly Sugar, Virginia Svec, Conny Swacha, Virgil Swadley, Sarah Swallow, Shannon Sweeney, Larry Swenson, Michael Tackett, David Tang, Stephen Tateishi, Barbara Taylor, Matthew Taylor, Coral Taylor, Kristina Ten, Samuel Tepe, Katz Tepper, Diana Terrazas-Lugo, Esther Teyechea, Jake Teyechea, Catherine Theiler, Joshua Theodorakis, Lex Thomas, David Thompson, Patricia Thompson, Luke Thompson, Mark Thompson, Kendyl Thompson, Brett Thompson, William Thornton, Bonnie Titre, Grace Tollas, Jason Tonachio, Jennifer Towne, Anne Townsend, Austin Tremellen, Año Trevino, Sarah Truebe, Jan Trumbo, Rexanne Tucker, KIMBERLY TURNER, George Turner, Butch Ukura, Miguel Urbina, Evie Van de Bogart, Jake Vancamp, Hannah Varble, Veronica Vasquez, Stephen Vaughan, Joseph Vaughan, Breeana Venegas, Paul Vera, Larissa Villeburn, Patricia Vineski, Jeff vinosky, Tanya Wade, hayley wagner, Charmeine Wait, Heather Walker, Alicia Walker, Donna Walkuski, John Walrath, Thomas Walsh, Glennis Walters, Kimberly Walters, Emily Ward, Tom Warhol, Scott Warren, Barbra Warren, JM Waterman, Frank Watrous, Natasha Watson, Bryce Watson, June Watterson, Beth Weatherby, Sarah Weber, Ed Weigand, Amanda Weinstein, Olivia Weinstein, Anna Welch, Mark Wentley, Tim Wernette, Anita Wesse, Helen Westbrook, Brian Whitlock, Cynthia Wicker, David Wielander, Margaret Wilch, Karen Wiley, Jordan Wiley-Hill, Bree Wilke, Jacob Wilkinson, Katiri Williams, Linn Williams, Catherine Williams, Thomas Williams, Terri Williams, Linda Williams, Cynthia Williams, Sheri Williamson, Miriam Willis, Michael Wills, Jessica Wills, Blake Wilson, Jaemin Wilson, Karen Winters Schwartz, john wirkus, Kelley Wolfe, Clinton Wood, Matthew Wood, Calvin Woods, Lily Woods, michele Worthington, Ciara Wozencraft, Jennifer Wrenn, Ashley Wright, Geoff Wyszynski, John Yerger, Emily Yetman, Adele Youmans, Kelsey Yule, Linda Z, Ken Zablotny, Loraine Zagula, Shannon Zawada, Sandy Zelasko, Anthony Zepke, and Janice Zinkl, Debra Kenney, Chris Generous, Rose Ann Rowlett, Constance Paris, Elijah Tangenberg, Robin Solari, Kristi Jenkins, Madaline Ritter, Rebecca Craft, Ashley Azzone, Grace McGuire, Belén Sisk, Gordon and Joan Griffes, Ann Horner, Elysia Hansel, James Cornell, peg kazda, Liane Davis, Bianka Alban, Nita Kostroski, Georgette Larrouy, Emily Hartley, Sean Manion, Dean Hahn-Carlson, Jacques Mauger, Carol Jelinek, James Stratton, Randy Serraglio, Adam Hannuksela, michele Worthington, Lauren Renteria, Lloyd & Noreen Rossa, Catlow Shipek, Chris Riley, Pat French, Linda Moon Stumpff, Richard Connors, Paul Huddy, hayley wagner, Kai Lepley, Charlene Saltz, Keith Cliver, Peter Harrity, Bill Poulsen, Chrysta Coronado, Perrin McNelis, Eric Dhruv, Mark Meeks, Barbara Warner, Joni Stellar, Susan Bell, Christine Curtis, Debora Runyon, Emily Kachorek, Deshawn Davis, Beth Pirl, Keri Dixon, Julian Donahue, Ben Lomeli, D G Chilson, Clarice Bales, Timothy Moore, Christy Krieg, Cheryl Barnds, Anastasia Rabin, Donna Hutchinson-Muri, Jacob Thompson, Thomas prim, Reta Rutledge, Carol Boquard, Julie Johnson, Carolyn Cooper, and Susan Lawrence.

Comment 19:

Dear Arizona Department of Environmental Quality, I'm writing to urge you to deny South32's Hermosa permit (#AZ0026387) for discharge of mine water into Harshaw and Alum creeks. The proposed impacts are unacceptable and fall into two main categories:

- 1) dewatering due to the "cone of depression" that would be created around the mine and*
- 2) disturbances that would come from dramatically increased flow rates in nearby creeks.*

First, dropping the groundwater level in an area like this would be highly destructive. The change in hydraulic gradients around the mine would change the "paths of least resistance," where current springs emerge, permanently drying natural springs. It would also lead to significant loss of upland trees. The death of surrounding trees will decrease the landscape's overall resilience and could lead to the present ecosystem's radical transformation and potential collapse.

Expected harms from the water discharges are also deeply concerning. Up to 6 million gallons of water per day could be forced down Harshaw Creek and up to 172,000 gallons per day down Alum Creek. These volumes are significantly higher than current, intermittent, base flows. This will lead to severe erosion upstream, excessive sediment loads downstream, and the burial of several important water sources such as the seven rheocene seeps and springs known in Harshaw Creek and the nine rheocene seeps and springs known in Alum Creek. These harms are particularly concerning because springs are such unique ecosystems with high biodiversity. Their destruction will affect endemic species to an unknown degree because the sites haven't yet been adequately surveyed. Some estimates suggest that refugia like these support more than 20% of endangered and threatened species, despite making up a much smaller proportion of the land surface area (Springs Stewardship Institute).

What's more, such intense flooding will lead to reduced tree recruitment for riparian species like cottonwoods and sycamores — over time, altering the landscape. Because the water discharges would be ongoing, the surrounding landscape will be more water-logged. This means a reduced capacity to absorb water during rains, and potential downstream flash flooding. And finally, the quality of the water being discharged in such high quantities is a concern. Its source will be deep underground in the Hermosa project, and although the mine has promised to treat the water before release, its quality could change unexpectedly over time.

Although water in the desert is a rarity, and one would think that increased flow would help our streams, because of the sensitive ecological balance of these riparian ecosystems, a change in flow regime this drastic could permanently alter the character and species composition of these areas.

For all these reasons, I urge you and the Arizona Department of Environmental Quality to deny the permit for this project.

ADEQ Response:

The AZPDES program has authority to regulate the discharge of pollutants to protect surface water quality. The AZPDES program does not have the authority to limit the flow or volume of water discharged by a permittee, nor does it have authority to regulate the "dewatering" of mine workings.

The proposed permit protects the environment and public health in accordance with ADEQ's legal authority. While water quality may vary naturally over time, the permit requires regular monitoring to assess the water quality of the discharge.

ADEQ has included permit requirements that are based on Arizona surface water quality standards (SWQS). ADEQ develops SWQS to protect surface waters. The SWQS that are applicable to surface water vary by the waters designated use.

Middle Alum Gulch has the designated uses of Aquatic and Wildlife warm water (A&Ww), Full Body Contact (FBC), Fish Consumption (FC) Agricultural Livestock watering (AgL). A&Ww means the use of a surface water by animals, plants, or other warm water organisms, generally occurring at an elevation less than 5000 feet, for habitation, growth, or propagation. FBC means the use of a surface water for swimming or other recreational activity that causes the human body to come into direct contact with the water to the point of complete submergence. The use is such that ingestion of the water is likely and sensitive body organs, such as the eyes, ears, or nose, may be exposed to direct contact with the water. FC means the use of a surface water by humans for harvesting aquatic organisms for consumption. Harvestable aquatic organisms include, but are not limited to, fish, clams, turtles, crayfish, and frogs. AgL means the use of a surface water as a water supply for consumption by livestock.

Lower Harshaw Creek has the designated uses of Aquatic and Wildlife effluent dependent water (A&Wedw), Partial Body Contact (PBC), and Agricultural Livestock watering (AgL). A&Wedw means the use of an effluent-dependent water by animals, plants, or other organisms for habitation, growth, or propagation. means the recreational use of a surface water that may cause the human body to come into direct contact with the water, but normally not to the point of complete submergence (for example, wading or boating). The use is such that ingestion of the water is not likely and sensitive body organs, such as the eyes, ears, or nose, will not normally be exposed to direct contact with the water.

Based on the applicable SWQS, ADEQ sets numeric effluent limitations (Part I.A of permit) and narrative water quality standards (Part I.E of permit) in the permit. All discharges must meet these permit requirements. By complying with these permit limitations and standards, the discharges are protective of Alum Gulch and Harshaw Creek.

The permit protects the receiving waters from erosion and scouring. Based on the designated uses of Alum Gulch, discharges from Outfall 001 must "not cause the receiving water to exceed 80 mg/L for suspended sediment concentration, except during or within 48 hours after a local storm event" per Part I.E.5 of the permit. The permit requires discharges to both Alum Gulch and Harshaw Creek, "be free from pollutants in amounts or combinations that, in the receiving waters [that] settle to form bottom deposits that inhibit or prohibit the habitation, growth or propagation of aquatic life" per Part I.E.1.a. South32 also maintains an energy dissipater at Outfall 002 to prevent erosion and scouring of Harshaw Creek.

In addition, Parts I.C and I.D of the permit require testing for Whole Effluent Toxicity (WET) to protect the local ecosystem and monitor water quality. WET determines if the effluent is toxic to aquatic flora and fauna. If a WET test fails, South32 is required to take follow-up actions including retesting, identifying the source of toxicity, and implementing a plan to prevent toxicity from reoccurring per Part III of the permit.

The AZPDES program also requires the facility to provide operation and maintenance of their treatment system. Standard Condition #6 in Appendix C of the permit requires the permittee to properly operate and maintain all treatment systems that are used to achieve compliance with the conditions of this permit. This standard condition is required by A.AC. R18-9-A905(A)(3)(a) which incorporates 40 C.F.R. 122.41(e).

Comment 20 Written Comment

Comment 20 or a slight variation was submitted by: Paul Estridge, Verlyn Flieger, David Levene, Grisel Levene, Jeanne Emmerson, Beth Pirl, Donna Estridge, Emily Moddelmog, Stanley KEITH Cliver, Carolyn Bergkuist, Deborah Ensign, peter Bodnaruk, Pamela Ensign, Kim Reineking, Daniel Tarmer, Deborah M. Gates, N/A Hadden, Jennifer MacMilhol, Melissa Crider Andrea, Nicki Stanton, Peter Gates, Sarah Vance, Stephen and Barbara Talmage, Susan Pennacchini, and Diana Nash.

Comment 20:

I'm writing to request that you deny South32's Hermosa permit renewal (#AZ0026387) for discharging pumped aquifer "waste" water into Harshaw and Alum creeks. The possible impacts have potentially serious environmental effects and fall under two main categories:

- 1. dewatering due to aquifer pumping, and*
- 2. chemical and physical disturbances due to increased flow rates in Harshaw and Alum creeks.*

First, reducing the water table level in these mountains will deny numerous seeps, springs, and livestock tanks of their water supply. The change in hydraulic gradients around the mine will very likely change the "paths of least resistance," where current springs emerge, permanently drying natural water sources. These sources of water which provide rare and essential habitat for various endangered species, including the Mexican Jaguar, are irreplaceable and already threatened by a climate change. Furthermore, tens of thousands of acres of livestock rangeland will very likely be severely impacted as groundwater fed livestock tanks dry up.

Anticipated harms from water discharges are also deeply problematic. Up to 6.5 million gallons of water per day will be dumped into Harshaw Creek and up to 172,000 gallons per day into Alum Creek. Such large volumes will far exceed the usual intermittent and base flows in these creeks, and will even surpass Sonoita Creek's flow rate by over three times. This could result in significant problems, including severe upstream erosion, excessive downstream sedimentation, and the potential burial of vital water sources. Including notably, seven rheocrene seeps/springs in Harshaw Creek and nine in Alum Creek. The concern is heightened due to the unique and biodiverse nature of the areas immediately surrounding springs. Estimates propose that these refuge-like areas may harbor more than 20% of endangered and threatened species in the area, a remarkable statistic given their relatively small land surface area, as indicated by the Springs Stewardship Institute. Such large volumes of water introduced into these creeks will lead to reduced tree recruitment for riparian species like cottonwoods and sycamores ? over time, significantly changing both the landscape, and its species composition.

In addition, Because the water discharges are continuous, the affected landscape will become water-logged, meaning a reduced capacity for soils and sediments in arroyos to absorb high volumes of water in heavy rain events, making downstream flash flooding more intense and less predictable; significantly increasing the danger to residents, property, and public infrastructure during storms.

Furthermore, high rates of flow could liberate and transport high volumes of numerous toxic heavy metals existing within the sediments of both Lower Harshaw and Alum creek, a remnant of legacy acid mine drainage resulting from two generations of under-regulated mining practices. It has been well documented that both creeks are severely impaired as demonstrated in the 2012 University of Arizona thesis "Bioaccumulation of Heavy Metals from Soils to Plants in Watersheds Contaminated by Acid Mine Drainage in SE Arizona, Katherine Eddleman" wherein for example, soil samples from Lower Harshaw creek were determined to be "anomalously high in arsenic (97.2 ppm) and lead (919.5 ppm)" (Eddleman, 2012). These numbers are alarming, especially when taken with the very real probability of such contaminants being transported by south32 [sic] Hermosa discharge into the groundwater basin from which Patagonia wells pull for residential use. Not to mention the introduction of this contaminated water into the federally recognized impaired surface waterway that is Sonoita creek. The Arizona Department of Environmental Quality seems to be either unaware or unconcerned with these threats, as past versions of both the National Pollutant Discharge Elimination System and Aquifer Protection Permits only name a single actual point of compliance 200 feet downstream of the outfall. I argue that South32 aims to use Harshaw creek and Alum creek as natural pipes to discharge their water, and that the true point of discharge is not where they release it from their plant, but where it comes into contact with the vital waters of Sonoita creek and Patagonia municipal sources.

At the very least, ADEQ must create additional points of compliance and require South32 to fund continual remediation of these contaminated creek beds if they seek to pump water into them. This proposed action by South 32 endangers not only the health of the delicate riparian ecosystem, but also the health and well-being of the residents of Patagonia, and visitors to the area who enjoy the drinking water and water recreation that would be made hazardous if you choose to do nothing. The community must be protected from ongoing risks that this activity will potentially perpetuate.

For all these reasons, I strongly urge you and the Arizona Department of Environmental Quality to deny the permit for this project.

ADEQ Response:

The AZPDES program does not have the authority to regulate groundwater pumping or discharges to groundwater, see ADEQ's responses to comment 19. The AZPDES program protects Alum Gulch and Harshaw Creek by setting numeric effluent limitations and narrative standards, see ADEQ's response to comment 19.

ADEQ's surface water quality standards and designated uses must also be set to be protective of downstream waters per A.A.C. R18-11-104(F). ADEQ sets AZPDES permit limits based on applicable surface water quality standards, which ensures protection of both the receiving water and downstream waters. By setting appropriate surface water quality standards and monitoring waters, as well as setting appropriate permit limits, ADEQ protects the health of the receiving water and downstream waters. When ADEQ set the designated uses and standards for Alum Gulch and Harshaw Creek, ADEQ ensured the designated uses were protective of downstream waters, including Sonoita Creek. Thus, the permit limits are protective of not only Alum Gulch and Harshaw Creek, but also Sonoita Creek.

The AZPDES program does not have the authority to regulate the transportation of pollutants that may already exist in the waterway, downstream. The AZPDES program does not have the authority to require the remediation of downstream creek beds.

See also ADEQ's response to comments 19 and 7.

Comment 21

Written Comment

Comment 21 or a slight variation was submitted by: Ameer Beck-Jones, Bridger Berdel, Thomas Coffeen, Tom Colby, Sandy Cordova, Emily Cowles, Scherry Duncan, Paula Hartgraves, Deanna Horton, Dan Horton, John Ishikawa, James Madson, Nasrin Mazuji, Laurie Nessel, Josh O'Connor, Michael Prosser, Dave Schueppert, Barb Schueppert, Cedra Spraggett, Karen Stucke-Jungemann, Virgil Swadley, and Eva Valencia.

Comment 21:

I object to Arizona Department of Environmental Quality's (ADEQ) plan to renew the Arizona Pollutant Discharge Elimination Permit (AZPDES) No. AZ0026387 for South32's Hermosa Project mine. The proposed Permit would allow for dangerous discharges of mine water to Harshaw Creek, Alum Gulch, and Sonoita Creek, threatening the health of local residents and the environment in violation of the Federal Clean Water Act and Arizona's laws relating to surface water quality. The issuance of the Permit is also contrary to ADEQ's own rules which require that ADEQ "act to protect the environment", promote "the protection and enhancement of the quality of water resources", provide for the "prevention and abatement of all water and air pollution"; and "[e]nsure the preservation and enhancement of natural beauty" in our state. You are not doing your job to enforce the discharge provisions of the Clean Water Act to protect human health and the environment as required by law. You cannot issue the permit until ADEQ complies with Total Maximum Daily Load (TMDL) rules required by the Clean Water Act so that the contaminated waters of Harshaw Creek, Alum Gulch, and Sonoita Creek can finally be returned to good health. ADEQ's concerted efforts to avoid or trivialize its TMDL obligations in the Permit is astonishing. Please do not issue this permit and please keep me updated on all aspects of this permit process.

ADEQ Response:

ADEQ is committed to its mission of protecting human health and the environment. The permit does not allow dangerous discharges of mine water. South32 utilizes modern treatment systems to ensure the discharge meets all Clean Water Act and Arizona state law requirements. The permit contains effluent limitations, assessment levels, and monitoring requirements to ensure the designated uses of Upper Alum Gulch and Lower Harshaw Creek are protected. The draft permit also requires more frequent monitoring and contains more stringent limits than the current permit.

See also ADEQ's response to comments 2, 4, and 7.

Comments 22-25

Fritz Sawyer

Written Comments

Comment 22:

The effluent limitations guidelines in 40 CFR Part 440 do not include effluent limitations for manganese. Manganese can cause a variety of behavioral and developmental disorders in children, as well as symptoms similar to Parkinson's disease in adults. The American Water Works Association (AWWA) states that manganese can have neurotoxic effects at higher concentrations, and can discolor water and cause staining at lower concentrations. Symptoms of manganism include reduced response speed, irritability, mood changes, compulsive behaviors, tremors, stiffness, slow motor movement, depression, anxiety, and hostility. In the early stages of manganism, neurological symptoms consist of reduced response speed, irritability, mood changes, and compulsive behaviors. The impact of manganese exposure on wildlife is not well understood. Recommendation: The proposed AZPDES Permit No. AZ0026387 for January Mine Hermosa Project needs to include Mn monitoring. Outfalls 001 and 002 should be monitored for the Mn with the health advisory limit of 0.3 mg/L on a quarterly sampling basis. It would be discreditable not to collect this data for the health and welfare of this environmental system.

ADEQ's Response:

AZPDES permits contain limits and assessment levels based on Arizona SWQS. ADEQ has set assessment levels for manganese in the permit. The monthly average assessment level is 130.667 mg/L and the daily maximum assessment level is 262.142 mg/L. These values are based on Arizona SWQS for the FBC designated use for Middle Alum Gulch and the PBC designated use for Lower Harshaw Creek. The AZPDES program does not have the authority to implement drinking water health advisory values in AZPDES permits.

ADEQ develops surface water quality standards (SWQS) to protect surface waters. The SWQS that are applicable to surface water vary by the waters designated use. Middle Alum Gulch has the designated uses of Aquatic and Wildlife warm water (A&Ww), Full Body Contact (FBC), Fish Consumption (FC) Agricultural Livestock watering (AgL). A&Ww means the use of a surface water by animals, plants, or other warmwater organisms, generally occurring at an elevation less than 5000 feet, for habitation, growth, or propagation. FBC means the use of a surface water for swimming or other recreational activity that causes the human body to come into direct contact with the water to the point of complete submergence. The use is such that ingestion of the water is likely and sensitive body organs, such as the eyes, ears, or nose, may be exposed to direct contact with the water. FC means the use of a surface water by humans for harvesting aquatic organisms for consumption. Harvestable aquatic organisms include, but are not limited to, fish, clams, turtles, crayfish, and frogs. AgL means the use of a surface water as a water supply for consumption by livestock.

Lower Harshaw Creek has the designated uses of Aquatic and Wildlife effluent dependent water (A&Wedw), Partial Body Contact (PBC), and Agricultural Livestock watering (AgL). A&Wedw means the use of an effluent-dependent water by animals, plants, or other organisms for habitation, growth, or propagation. means the recreational use of a surface water that may cause the human body to come into direct contact with the water, but normally not to the point of complete submergence (for example, wading or boating). The use is such that ingestion of the water is not likely and sensitive body organs, such as the eyes, ears, or nose, will not normally be exposed to direct contact with the water.

For more information about manganese, see ADEQ's response to comment 8.

Comment 23:

There is no definition for “treated mine drainage water” in the permit. Recommendation: supply detailed definition.

ADEQ’s Response:

“Mine drainage” is defined in 40 C.F.R. 440.141(a)(10) as, “any water drained, pumped or siphoned from a mine.” Per 40 C.F.R. 440.141(a)(8), a “mine” is defined as, “a place where work or other activity related to the extraction or recovery of ore is performed.”

While these definitions apply even if not included in the permit, the definitions for these terms have been added to the permit for convenience in Appendix A. Part B: Definitions in response to this comment.

Comment 24:

Without further information describing the water treatment plants, cross-connection controls, short circuiting, mine and mill water balances, chemicals used on property, etc. the following should be added to fully characterize these outfalls:

- *Chemical oxygen demand (COD)- In environmental chemistry, COD is an indicative measure of the amount of oxygen that can be consumed by reactions in a measured solution. The most common application of COD is in quantifying the amount of oxidizable pollutants found in surface water (e.g. lakes and rivers) or wastewater. COD is useful in terms of water quality by providing a metric to determine the effect an effluent will have on the receiving body.*
- *Oxidation reduction potential (ORP)- is a measurement of sanitizer effectiveness in water. It is an electronic measurement in millivolts (mV) of the ability of a chemical substance to oxidize or reduce another chemical substance.*
- *Dissolved oxygen (DO)- is the amount of oxygen that is present in water. Water bodies receive oxygen from the atmosphere and from aquatic plants. Running water, such as that of a swift moving stream, dissolves more oxygen than the still water of a pond or lake. Healthy waters that can support life must contain dissolved oxygen.*
- *Total dissolved solids (TDS)- is a measure of the dissolved combined content of all inorganic and organic substances present in a liquid in molecular, ionized, or micro-granular (colloidal sol) suspended form. The principal application of TDS is in the study of water quality for streams, rivers, and lakes. It is used as an indication of aesthetic characteristics of drinking water and as an aggregate indicator of the presence of a broad array of chemical contaminants.*
- *Forever chemicals- is an informal term the collectively refers to the class of synthetic chemical known as perfluoroalkyl substances and polyfluoroalkyl substances or PFAS. PFAS are a large chemical family of over 4,700 highly persistent chemicals that don’t occur in nature. These chemicals are all different and have wide-ranging applications, from being grease-, water-, and stain-resistant to protecting pipes from corrosion.*

Recommendation: COD, ORP, DO and TDS analysis should be done monthly and Forever chemicals should be quarterly.

ADEQ’s Response:

ADEQ does not require monitoring for COD, ORP, TDS, or PFAS at this time because there are no applicable SWQS for these parameters. The parameters included in Tables 4.a. and 4.b of the permit provide monitoring to characterize the discharge based on current, applicable SWQS.

If SWQS are developed or changed, ADEQ may modify the permit as necessary, as authorized by Part IV.A of the permit. Part IV.A states, “this permit may be modified per the provisions of A.A.C. R18-9-B906, and R18-9-A905 which incorporates 40 C.F.R. Part 122. Such a modification would undergo a public notice and comment period.

EPA’s National Primary Drinking Water Regulation for six PFAS substances does not impact this AZPDES permit. ADEQ has no legal authority to implement National Primary Drinking Water Regulations as effluent limitations in AZPDES permits.

For information regarding DO, see ADEQ’s response to comment 13.

Comment 25:

The AZDES permit and/or the APP permit does not address any long-term reactive chemistry with the WTP1/WPT2 produced residual solids and/or the covered tailings within the lined tailings impoundment. Understanding this long-term system is critical for seepage control and treatment especially for closure. The following tests should be added on a semi-annual basis to composited samples:

- *Leaching Environmental Assessment Framework (LEAF) Methods and Guidance- The Leaching Environmental Assessment Framework (LEAF) is a leaching evaluation system, which consists of four leaching methods, data management tools, and scenario assessment approaches designed to work individually or to be integrated to provide a description of the release of inorganic constituents of potential concern (COPCs) for a wide range of solid materials. The LEAF Methods have been designed to consider the effect of key environmental conditions and waste properties on leaching.*
- *Toxicity Characteristic Leaching Procedure (TCLP)- is a chemical analysis process used to determine whether there are hazardous elements present in a waste. It involves a simulation of leaching through a landfill and can provide a rating that can prove if the waste is dangerous to the environment or not. The TCLP is designed to determine the mobility of both organic and inorganic analytes present in liquid, solid, and multiphase wastes.*
- *Wet cell testing is a method used to assess the acid-generating potential of sulfide minerals. The humidity cell (HC) kinetic method is widely used to assess acid-generating potential and is the only method normalized by the American Society for Testing and Materials (ASTM). The HC test results can be influenced by complete drying of the sample or by a long water saturation step during weekly cycles, which significantly reduces sulfide oxidation rates, leading to erroneous interpretations. A protocol modification of the HC involves keeping the sample permanently at an optimal degree of saturation, between 40 and 60 %, corresponding to maximal sulfide reactivity, as demonstrated in the literature. This modification leads to optimal sulfide reactivity and higher oxidation rates.*

ADEQ’s Response:

The AZPDES program does not have the authority to require testing within the tailing storage facility (TSF) itself. The AZPDES program regulates point source discharges of pollutants to Waters of the United States.

South32 holds an Aquifer Protection Program (APP) permit from ADEQ. The APP permit contains construction requirements for the TSF and underdrain collection pond (UDCP), contingency requirements for liner leakage, failure, or rips, and facility closure requirements. More information about APP, contact ADEQ’s Groundwater Protection Section at 602-771-4999.

South32 captures seepage from the TSF in the UDCP. Water from the UDCP is treated at WTP1 with the option for further treatment at WTP2. The permit contains effluent limitations, assessment levels, and discharge characterization monitoring to ensure any seepage is treated effectively prior to discharge.

Comment 26
Sky Jacobs
Written Comment

Comment 26:

I own land along Sonoita Creek in Patagonia. I am a virtual lifelong AZ resident.

Million of gallons of water being dumped into Harshaw Creek is an [sic] literally an existential threat to the Town of Patagonia and other nearby residents. Heavy metals and other pollutants are likely to contaminate groundwater throughout the Harshaw Creek watershed, as well as Sonoita Creek and associated aquifer around Patagonia and other nearby areas. This water is the entire water supply for Patagonia and everyone in the area. Potable water is critical to the Town and many other residents nearby.

Another threat that is real is increased risk of flooding. Most of the Town of Patagonia is in the flood plain and subject to destructive floods. Several million gallons of water per day will be enough to wet the channel of Harshaw Creek and Sonoita Creek through Patagonia. When a watershed and soil along it are saturated, risk of serious flooding is hugely elevated. This area is one of the most subject to monsoon storms and large floods in all of Arizona.

ADEQ's Response:

The AZPDES program regulates the discharge of pollutants to surface waters. The AZPDES program does not have authority to regulate discharges to groundwater. Discharges to groundwater are regulated by ADEQ's Aquifer Protection Program (APP). For more information about APP, see <https://www.azdeq.gov/APP/ComplianceAssistance>.

The AZPDES permit requires monitoring for heavy metals and other pollutants to ensure the discharge is protective of Harshaw Creek and Alum Gulch. There are numeric effluent limitations set in the permit based on Arizona's surface water quality standards (SWQS). See ADEQ's response to comment 19 for more information about SWQS.

See ADEQ's response to comment 19 in regards to flooding concerns. For more information about flood control measures, please contact the Santa Cruz County Flood Control District at 520-375-7685.

Comment 27
Debra Kenney
Written Comment

Comment 27:

I am against mining in Santa Cruz County. I resent the South 32 Fast Track implemented for this mine, because it is illegal to ignore all the Environmental protections that are put in place for the protection of

us, the citizens and the environment. Fast Track is allowing these environmental laws to be bypassed. This poses potentially horrific problems to occur.

ADEQ's Response:

This comment may be referring to Title 41 of the Fixing America's Surface Transportation Act (FAST-41). FAST-41 is only applicable to federal agencies per 42 U.S.C. § 4370m(1) and 42 U.S.C. § 4370m(6).

ADEQ does not have a fast track process for AZPDES permits. ADEQ followed the standard process for developing this permit and ensured all requirements of the Clean Water Act were met.

Comment 28
Jay Thompson
Written Comment

Comment 28:

My name is Jay Thompson a 15+ year resident of Rio Rico Arizona and a Board Member of Calabasas Alliance. I agree with the comments of colleagues and neighbors that following current regulations to the letter of law is paramount to build trust and keeping us safe to include: the mine designation is that it is new / not existing; monitoring technology and timing; studies / data; and where discharges occur.

As background, I was born and raised in a mining community that suffered the many health effects of land, air and water pollution – and the town now has no businesses left since the mines moved on. Water pollution problems remain today, as do health issues.

I have a Mechanical Engineering degree, so I am about data and logic versus reality. In my first corporate career, I travelled to many of the largest mines around the world. There are similar issues with mining and processing everywhere – with many land, water and air pollution lessons surrounding the mining, transport, processing and use of these minerals in products we buy.

For the last 30+ years, I have been involved in the shipping world that includes trucking on public roadways, rail, marine and air. Transport has many safety-related risks, but much greater ones when involving hazardous materials. Accidents will happen!

So, I wish to reference and incorporate PARA's comments into my input, but also want to briefly highlight additional questions regarding the water discharge to include the water use on the mine and county roadways.

One of the EPA issues in Santa Cruz County is the airborne dust pollution levels in the Nogales area. When we have increased traffic on unimproved roadways, that increases dust. When water is used on roads, whatever is in that water will become airborne when it starts to dry up. Also, excess water used on roadways runs off into the surrounding area, as does carry-out dirt tracking – and fuel, oil, coolant and ore leakage from vehicles.

We need data to understand all this, which underscores the need to be transparent and to know we are "addressing and monitoring" all these processes. More work is needed!

ADEQ's Response:

The AZPDES program regulates the discharge of pollutants to protected surface waters. The AZPDES program does not have authority to regulate air pollution or the potential pollution caused by carrying out materials by vehicles. This AZPDES permit does not regulate water used on roadways. Discharges to protected surface waters from pavement wash waters where no detergents or cleaning agents are used and solids are removed, may be authorized by obtaining coverage under the multi-sector general permit (MSGP) per Part 1.1.3.1 of the permit. South32 currently has MSGP permit coverage under permit ID no. AZMS81380. For more information about the MSGP, see ADEQ's website here: <https://azdeq.gov/azpdes-industrial-stormwater-msgp>.

South32 has applied to ADEQ for an Air Quality Permit. ADEQ proposed the permit and is in the process of responding to public comments. ADEQ must share the draft permit with EPA Region 9 after the responses are prepared for a mandatory 45-day review period. EPA can either accept or object to the permit at the end of the review. If EPA objects, ADEQ will need to resolve those objections in a timely fashion prior to taking final action. For more information about the air quality permit, please contact airpermits@azdeq.gov.

Comment 29**Eric Findeis****Written Comment****Comment 29:**

I am property owner in Patagonia and this topic is literally the deciding factor in whether we will build and move to the beautiful Patagonia area. Patagonia is a special place for many reasons, but its priceless position as a protected migratory pathway for animals is one reason that makes it worth protecting. I fully support the PARA response to the Hermosa Pollution Discharge Permit. My fears for the water discharge into Harshaw Creek are not identical to PARA's, but I believe that constant oversight is necessary to ensure that Mining and Safety issues can coexist in Patagonia. If the issue is collecting and testing water samples regularly, I believe that you find many potential Water Volunteers eager to collect samples for testing in a scientific manner. We can Help!

I believe that the overriding question is about the Water Treatment that South32 has proposed for extracted water and tailings seepage before release into Harshaw Creek. IF South32 is committed to the proposed method of Water Treatment, water entering the Creek, and thus the Patagonia Watershed, SHOULD be neutral or even cleaner than the existing groundwater. I would need assurances that there is monitoring of the water discharge treatment, discharge levels, environmental impact, and flexibility when unknown results require a change of plans to assure public safety and quality of life.

If South32 can do what they are promising in regards to developing a small footprint, 21st century mining operation, I am happy to watch. I assume that AZEQ will help me watch and assure overall environmental and individual safety while supporting mineral resource extraction in a net-positive manner.

ADEQ's Response:

The permit contains effluent limitations, assessment levels, and monitoring requirements to ensure the designated uses of Upper Alum Gulch and Lower Harshaw Creek are protected. Numeric limitations and assessment levels are calculated based on Arizona Surface Water

Quality Standards (SWQS). Groundwater quality and groundwater standards are not considered in the AZPDES permit because the AZPDES program regulates discharges to surface water.

Monitoring results are required to be reported to ADEQ per Part II.B of the permit. Discharge volume must be recorded and reported per Part II.B of the permit. Data submitted by South32 to ADEQ is publicly available. Please see ADEQ's webpage for instructions on submitting a records request: <https://www.azdeq.gov/records>. DMR data may also be downloaded from EPA's Enforcement and Compliance History Online (ECHO) by searching the permit number (AZ0026387): <https://echo.epa.gov/trends/loading-tool/get-data/monitoring-data-download>.

ADEQ completes regular inspections and reviews monitoring results to ensure permittees are complying with their permit requirements.

Per Part IV.A of the permit, "this permit may be modified per the provisions of A.A.C. R18-9-B906, and R18-9-A905 which incorporates 40 C.F.R. Part 122. This permit may be reopened based on newly available information; to add conditions or limits to address demonstrated effluent toxicity; to implement any EPA-approved new Arizona water quality standard; or to re-evaluate reasonable potential (RP), if Assessment Levels in this permit are exceeded." Therefore, ADEQ may modify the permit based on new data. Such a modification would undergo a public notice and comment period.

ADEQ encourages citizen scientists to volunteer to help the Agency monitor the health of Arizona waters and suggest measures to protect it for future generations. For more information, see ADEQ's Arizona Water Watch program: <https://azdeq.gov/arizona-water-watch>.

Comment 30
Sean Manion
Written Comment

Comment 30:

The South 32 Hermosa mining project, with its and surface water discharge of up to 6.48 million gallons per day, and its pollutant load, constitutes an ecological ransacking of the natural resources and the economy of Southern Arizona. The ecological assault from mining activity includes, but is not limited to; severe alteration and subsequent degradation of the natural hydrologic regime, the likely heavy metal pollution of surface and sub-surface water, both of which will destroy and degrade the ecological integrity and resilience of all associated riparian zones, such as Harshaw and Sonoita creek. Migrating heavy metal pollution will negatively impact the entire Santa Cruz River system, into Tucson and beyond. Water is the driver of life in this arid Sky Island region of Southern AZ.

The Sky Island Archipeligo of mountain islands surrounded by desert seas is a scientifically accepted global biodiversity hotspot. Biodiversity is basically diversity of species, diversity of genetically different groups within species, and ecosystem diversity. Each mountain island, such as the Patagonia mountains, is an ecologically essential part of the entire system of stepping stone islands connected by wildlife corridors within the landscape. This system of mountain islands, the connectivity between islands, and their ecologically unique biotas extend from approximately the Sierra Mazatan in Sonora to the Superstition Mountains in southern Arizona.

The economy of Southern Arizona is inextricably tied to the long-term viability of an intact and ecologically functioning mountain island system. It is a central area for long-term research efforts in many disciplines such as climate science, ecology, cultural history, paleo-ecology, arid lands research, agronomy, and astronomy. The vibrant eco-tourism sector of the economy includes, hiking, birding, photography, hunting, fishing, mountain biking, and environmental education and is the long-term sustainable future of our Southern Arizona region. Mining operations have a relatively short-term economic gain, but devastate the functioning of the natural landscape and its associated ecosystems and are ruinous choices for communities. Also, mining companies, including South32 have a provable paper trail record of never adequately "restoring" the land that they impact. What treasures of the natural world would we lose with this ecologically unacceptable mining project

In this instance, Southern Az is being treated as a "Sacrifice zone", because it is seen by mining companies as being an easy regulatory environment. The Sky Island region of Arizona is a national treasure, and is too important a system of terrestrial islands to ecologically "sacrifice" for short term monetary and resource gain.

ADEQ's Response:

ADEQ is using all of the authorities of the Clean Water Act to protect human health and the environment. The permit meets all requirements of the Clean Water Act and applicable Arizona statutes. Per A.A.C. R18-9-B903(B), ADEQ is required by law to issue an individual AZPDES permit when all requirements of A.R.S. Title 49, Chapter 2, Article 3.1 and Articles 9 and 10 of A.A.C. Title 18 Chapter 9 are met.

The following are examples of how the South32 and the permit comply with A.R.S. Title 49, Chapter 2, Article 3.1 Articles 9 and 10 of A.A.C. Title 18 Chapter 9, and the Clean Water Act:

- South32 submitted a permit renewal application at least 180 days before the permit expiration date of their current permit in accordance with A.A.C R18-9-B904(B)(1).
- ADEQ reviewed the permit application and issued a written notice of administrative completeness to South32 within the administrative completeness review time frame per A.R.S 41-1074.
- ADEQ has set water quality-based effluent limitations (WQBELs) in the permit to ensure the water quality of the receiving waters is protected in accordance with 40 C.F.R. 122.44(d).
- ADEQ included mass-based limits in the permit in accordance with 40 C.F.R. 122.45(f).
- Monitoring requirements are set in the permit to assure compliance with permit limitations in accordance with 40 C.F.R. 122.44(i)(1).
- South32 must use sufficiently sensitive test methods in accordance with 40 C.F.R. 122.44(i)(1)(iv) and A.A.C. R18-9-A905(B).
- South32 must maintain monitoring records for all sampling completed under this permit per A.A.C. R18-9-A905(A)(3)(a) which incorporates 40 C.F.R. 122.41(j)]
- The permit requires proper operation and maintenance of treatment systems per R18-9-A905(A)(3)(a) which incorporates 40 C.F.R. 122.41(e).
- A public notice was published for the permit per A.A.C. R18-9-A907(A) and ADEQ held a public comment period per R18-9-A908(A).
- ADEQ held a public hearing in accordance with A.A.C. R18-9-A908(B).
- EPA reviewed the draft permit per A.A.C. R18-9-A908(C).

ADEQ ensures AZPDES permittees are complying with all permit requirements. ADEQ's Inspections and Compliance Unit performs regular inspections of all AZPDES-permitted facilities, including the January Mine Hermosa Project, to verify permittees are complying with their AZPDES permits. Inspectors confirm that all required information (discharge flow records, WET test results, laboratory reports, DMRs, etc.) has been submitted to ADEQ. Inspectors also verify that all required documentation is present on site, including a copy of the permit and monitoring records. Inspectors visually inspect the treatment systems and outfalls to ensure they are well-maintained. Inspectors also verify the Quality Assurance Manual contains all required information. ADEQ conducted an inspection of the January Mine Hermosa site on September 27, 2023 and no alleged deficiencies were noted during the course of the inspection.

ADEQ is committed to protecting human health and the environment. See ADEQ's responses to comments 19, 20, and 21.

The AZPDES program does not have the authority to consider economic impact as part of a permitting decision.

Comment 31
Dr. Gregg Gorton
Oral Comment

Comment 31:

Thank you very much for listening to members of the Community. I agree with everything that's been said. I could find a single thing that I don't agree with. I do want PARA's legal team's comments regarding the proposed review of the permit to be incorporated into my comments. I live on 31 Cross Creek Road, that rings a bell, we're the only survivors still left on Cross Creek, where the exit road is being built for the mine. I think the future of the town of Patagonia is at stake. I think that's the critical issue. I think the question of following regulations, following the Clean Water Act, declaring the mine a new mine, all of that is absolutely critical. I flabbergasted that the mine was deemed continuation of the old mine. What's going on? What's happening here?

Following regulations, appropriate monitoring at more than one point. How many monitoring wells need to be in place for there to be adequate monitoring? I would argue more than one, and I would hope that ADEQ, who are more expert than I, would agree with that. There needs to be adequate monitoring. The question of the number of the pollutants and toxins not being included, I don't know whether that is in the purview of ADEQ, but it's good that that issue is being raised because it's absolutely crucial. So I think the future of the town is at stake. I think the real issue is human life and health, health of environment versus profits for an Australian company. I think that is the equation that we are talking about. A few jobs. Heck, if your health is going, your water is going, what good is it to use a job driving a truck for the mine company? So I think it's critical that everyone is here speaking loudly, trying to get our superb government agency to adhere to what it needs to do legally to protect the health of the population here in Arizona.

ADEQ's Response:

For information about "new source", see ADEQ's response to comment 1. The AZPDES program regulates discharges to protected surface water and the permit sets end-of-pipe limits in accordance with the Clean Water Act, see ADEQ's response to comment 20. The AZPDES program does not regulate discharges to groundwater; therefore, monitoring well locations are

not included in the permit. South32 must collect water quality samples after the last treatment process and prior to mixing with the receiving waters to monitor the discharge. For information about monitoring frequencies, see ADEQ's response to comments 9 and 11. ADEQ is required to issue an individual AZPDES permit to a facility that meets all legal requirements, see ADEQ's response to comment 30.

Comments 32
Jonathan Bailey
Written Comment

Comment 32:

I am writing as a concerned naturalist regarding the South32 Hermosa permit renewal (#AZ0026387) and think such a permit should be denied.

*Groundwater is critical for the unique habitats of the Patagonia Mountains. As a once tropic-like environment warmed, many species isolated in sky islands like the Patagonias, creating a "tide pool" of diversity. In some instances, these plants and animals have been isolated long enough to evolve into genetically distinct species found nowhere else on earth, such as *Vaejovis patagonia*. In addition, these refugium will prove necessary once again as human-caused climate change encourages migration into higher elevations.*

*Extant species in the region could be extirpated if the water table is reduced. This includes the Mexican jaguar and Mexican spotted owl as well as species from personal observations such as the rare *Amsonia grandiflora*—found in but a sliver of southern Arizona—or the critically imperiled *Metastelma mexicanum* and *Cynanchum ligulatum* or the federally listed *Graptopetalum bartramii*. We also identified the first population of *Gaga arizonica* in the Patagonia Mountains, found very rarely in just three sky islands (the Rincons, Huachucas, and now the Patagonia Mountains). This was the most robust population of *G. arizonica* documented by myself or my colleagues. Due to its close proximity to the mine, this remarkable and still poorly explored habitat would likely see significant impacts as a result of aquifer pumping.*

In addition, changes in landscape, such as a loss of native species and/or an influx of invasives in consequence of disturbed habitat constitute a real and significant harm to local archaeological sites, which are reliant on context for proper interpretation, care, and management. These sites, eligible for inclusion under the National Register of Historic Places under Criterion C "[a historic property] that embodies the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction" and/or Criterion D "[historic resources] that have yielded or may be likely to yield, information important in history or prehistory" are often correlated with plants used for food, medicine, or ceremony. This, in addition to their placement on high, overlooking exposures associated with perennial water sources, makes them especially vulnerable to changes in ground water and viewshed degradation. It is worth noting that NRHP calls for the protection not just of archaeological and historical sites that are listed but those eligible for inclusion.

As a result, I think it would be appropriate to swiftly and decisively reject the permit.

ADEQ's Response:

The AZPDES program does not have authority to regulate groundwater pumping. See ADEQ's response to comment 19. ADEQ is committed to protecting human health and the environment. See ADEQ's responses to comments 19, 20, and 21.

ADEQ does not determine which sites should be included in the National Register of Historic Places. Nominations for the National Register of Historic places are managed by the Arizona State Historic Preservation Office (SHPO). For information about SHPO, please see <https://azstateparks.com/shpo> or contact SHPO at azshpo@azstateparks.gov.

Comment 33
Submitted by Robin Lucky, Calabasas Alliance
Written and Oral Comments

Comment 33:

My name is Robin Lucky, my address is 1377 Camino Faja, Rio Rico, AZ 85648. I am the President of the Calabasas Alliance in Rio Rico Arizona, and we work in the area of Environmental Justice through advocacy and education. We support the Patagonia Area Resource Alliance and object to the proposal from ADEQ to review the Arizona Pollutant Discharge Eliminations Permit # AZ 00026387 for South 32 Hermosa Project mine.

ADEQ must determine these new facilities to be legal NEW SOURCES of discharge.

Yesterday, members of the Calabasas Alliance attended the Arizona Water Resources Board meeting in Rio Rico. It was distressing to say the least. Not only are we facing the 6.5 million gallons of water a day being mis-used in Patagonia with a plan to extract extremely dangerous manganese ore, but SCC is still designated in EXTREME DROUGHT STATUS for all last year - and this has not changed for January 2024.

There was a rancher present at this meeting who lives near the Patagonia highway, who said he can smell raw sewage from the Santa Cruz River near his property. He and his family have stopped drinking the tap water. Moreover, as reported by the EPA in USA TODAY recently, then, re-reported by The Nogales International, Rio Rico and South Tubac have 900% over the proposed allowable limits of PFAS in our drinking water. These are forever chemicals in our local water supply that can cause cancer and other disabling diseases such as autoimmune disease. Our water company in Rio Rico is Liberty Water. When we contacted them to ask for further information/remediation on our PFASF [sic] issue – they never responded.

Liberty Water is owned by the Canadian Company (Fortis), who also owns Unisource/Tucson Electric Power. It looks like our so-called friends from the British Commonwealth, who we as US citizens have a "special relationship" with, are in fact, quietly trying to destroy us, starting with our precious natural resources - in our own backyard. Tonight - I ask you the powers Arizona Department of Environmental Quality and our County officials to immediately declare a Water Emergency in Santa Cruz County due to our continued EXTREME DROUGHT STATUS, the poisoning of our water and destruction of an ancient aquifer with mined heavy metals such as lead, zinc, silver, now manganese and raw sewage – AND extremely high amount of PFAS in our local water Supply. I ask AZDEQ not to issue any permits to the to the Australian Mining Company South 32 Hermosa project for the foreseeable future.

Thank you for your time. PLEASE MAKE MY COMMENTS PART OF THE PATAGONIA AREA RESOURCE ALLIANCE COMMENTS.

ADEQ's Response:

ADEQ acknowledges the drought conditions in Santa Cruz County. However, the AZPDES program does not have the authority to regulate groundwater pumping or discharges to groundwater. See ADEQ's responses to comments 19 and 26.

Regarding PFAS, see ADEQ's response to comment 24.

The AZPDES program does not have the authority to consider where a company is from as part of the permit decision.

Comment 34
Emily Dukes
Written Comment

Comment 34:

There needs to be environmental impact studies done from an independent source before moving forward. The fast tracking of any action is the first issue. The new discovery of the endangered jaguar officially in the area should be reason enough. A proper, unbiased, environmental impact assessment must be done before moving forward for the sake of the water, plant life, and every human and animal this will affect.

ADEQ's Response:

The AZPDES program does not have the authority to require environmental impact studies. ADEQ is committed to protecting human health and the environment. See ADEQ's responses to comments 19, 20, and 21.

Comment 35
Peggy Dierking
Written Comment

Comment 35:

I have some questions: 1) What does "historic tailings" refer to? 2) Why is South32 maintaining a "Tailing Storage Facility"? Is this a requirement by ADEQ? What is a geomembrane covering? Also, can you provide copies of the petitions for review that the State of Arizona and Resolution Copper submitted to the Arizona Supreme Court asking the Court to overturn "the SAN CARLOS decision"? Can you provide the document(s) from the Arizona Supreme Court which granted the petitions? Can you provide explanation or define what is meant by "total maximum daily load" (TMDL)? Thank you.

ADEQ's Response:

Tailings are the remaining portion of ore after some amount of metal has been extracted. For the purposes of this permit, historic means created before December 3, 1982, which is the date effluent limitation guidelines applicable to ore mining and dressing (40 C.F.R. Part 440, Subpart J) were promulgated.

While the January Mine Hermosa Project was under the ownership of Arizona Minerals Inc. (AMI), AMI installed a tailing storage facility (TSF) to prevent historic tailings and possible future tailings from contaminating the soil or water. The TSF is lined with a geomembrane, which is a textile that prevents water from seeping into the ground and directs the water to the

underdrain collection pond, so that it may be routed for treatment on-site. The TSF is not a requirement of the AZPDES program; the AZPDES program regulates the discharge of pollutants to protected surface waters.

ADEQ cannot provide the requested documents as a part of this response to comments, but the documents may be requested through the following two websites. Members of the public can obtain public records from ADEQ by submitting a public records request here: <https://azdeq.gov/request-record>. To obtain records from the Arizona Supreme Court, members of the public can contact the Court here: <https://www.azcourts.gov/clerkofcourt/Contact-Us>.

Every two years, the Clean Water Act § 305(b) and § 303(d) requires ADEQ to assess the health of Arizona surface waters against established standards. If waters are not meeting the established surface water quality criteria, then the waters are considered impaired. Impaired Waters are shown on the Clean Water Act §303(d) list. If a water is impaired, ADEQ is required to identify sources of pollutants and provide solutions to restore the water quality. ADEQ calculates a Total Maximum Daily Load (TMDL) for the specific parameter(s) that exceed the water quality standard. The TMDL is a calculation of the maximum daily amount of a parameter which can enter the surface waterbody without causing an exceedance of surface water quality standards. The goal of a TMDL is to target pollutant sources to restore the health of the water body.

Comment 36
Chris Generous
Written Comment

Comment 36:

The damage (discussed below) will irreversibly impaie [sic] tourism (which many out of state visitors enjoy in the form of aquatics and terrestrial activities) and indigenous & minority rights (that is, environmental justice consultation procedural requirements and substantive rights). These significantly impact commerce and would require expanded consideration of protections. Moreover, the data indicates that the permits will drastically harm species in that habitat, which indicates likely Endangered Species Act Concerns. For more data on the species, please refer to the iNaturalist Datasets available here: https://www.inaturalist.org/observations?place_id=any&view=species; (more sets are referenced here:

<https://datasetsearch.research.google.com/search?ref=TDJjdk1URnRISGszYURGbWVRPT0sTDJjdk1URnNjSGhuWTNSa05nPT0sTDJjdk1URnVaMmq1ZDNreWJnPT0%3D&query=inaturalist>).

ADEQ's Response:

The AZPDES program is not authorized to directly consider tourism or economic impacts as part of a permitting decision. Arizona sets surface water quality standards (SWQS) based on the designated use of the waterbody. These SWQS are reviewed and approved by EPA. The Aquatic and Wildlife warm water (A&Ww) designated use applies to Middle Alum Gulch. A&Ww means the use of a surface water by animals, plants, or other warmwater organisms, generally occurring at an elevation less than 5000 feet, for habitation, growth, or propagation. The Aquatic and Wildlife effluent dependent water (A&Wedw) designated use applies to Lower Harshaw Creek. A&Wedw means the use of an effluent-dependent water by animals, plants, or other organisms for habitation, growth, or propagation. The permit contains water quality-based effluent limitations (WQBELs) based on the surface water quality standards (SWQS) for

these designated uses. The permit limitations ensure that the discharges from the January Mine Hermosa Project site are protective of the plants, animals, and organism that live in and around Alum Gulch and Harshaw Creek.

The permit also requires Whole Effluent Toxicity (WET) testing to ensure the discharge is not toxic to aquatic plants and animals. WET tests if the discharge produces any aggregate toxic effects on the test organism's ability to survive, grow and reproduce. The permit requires WET testing for three species: *Pimephales promelas* (Fathead minnow), *Ceriodaphnia dubia* (Water flea), and *Pseudokirchneriella subcapitata* (Green algae). WET ensures that no harm will be inflicted to species in the local area.

See also ADEQ's response to comments 30 and 41.

Comment 37
Joni Stellar
Written and Oral Comment

Comment 37:

My name is Joni Clark Stellar. I am a full-time resident of Patagonia, Arizona.

I am the Co-Chairman of the Board of Patagonia Area Resource Alliance.

I have degrees in Environmental Studies and Education.

My comments submitted here to ADEQ are given on behalf of myself and all the current and future residents of this area.

The proposed renewal of AZPDES DISCHARGE PERMIT NO. AZ0026387 TO South32 Hermosa, Inc. is crucial to me because:

1. I live in the Town of Patagonia's Municipal Watershed. It is of vital importance that the health of this watershed be maintained and improved. This includes Harshaw Creek, Alum Gulch, and Sonoita Creek. It is critical NOT to have any portion of the Upper Santa Cruz Watershed be subject to any further environmental degradation than it has already experienced from historic and current mining activities.

2. The Federal Clean Water Act and Arizona laws relating to surface water quality MUST be properly adhered to under the jurisdictional authority of ADEQ.

3. It is vitally important that ADEQ takes seriously its duty to ensure all water discharged from the Hermosa Project is always completely free of pollutants. The long-term public health of residents in the area is at stake.

4. I am deeply concerned with the apparent fact ADEQ has been and continues to be negligent in administering its core obligations and responsibilities regarding the permitting process for the Hermosa Project for the past few years, as expressed in concerns clearly brought to your attention by PARA and its legal counsel.

COMMENTS

1. The monitoring requirements in the draft permit are wholly inadequate with regards to frequency of monitoring, contaminants being monitored, and entities doing the monitoring. Allowing South32 to be the sole agency doing the monitoring is an outrage and is completely unacceptable. Monitoring must be done by independent, verifiable agencies with all monitoring data available to the public in real time.

2. Because current TMDL studies for this permit are almost 20 years old or completely missing, ADEQ is not to renew this permit until new TMDL studies are properly completed and reviewed. New TMDL studies must include Upper and Lower Harshaw Creek, Alum Gulch, and Sonoita Creek.

3. I am completely flabbergasted by ADEQ's determination that the Hermosa Project is an existing mine. When South32 purchased the site from ASARCO Custodial Trust there was no mine; only contaminated historic tailings and mine shafts managed for remediation purposes from the Trench Mine abandoned in the 1960's. This is clearly a new mine, with new deeper shafts, different ore targets and new facilities. ADEQ has yet to perform a "new source" analysis to determine if South32 is subject to the requirements of the Federal Clean Water Act. This renewal permit SHALL NOT be issued until ADEQ completes this basic obligation.

4. As South32 has been discharging water from its Hermosa Project site for months now, supposedly on an expired de minimis permit often at night, we request ADEQ make public the dates, times and quantity of discharge, the methods of analysis for the quality of discharge, dates of testing, and all data related to testing. In the absence of any such data, an explanation as to why this information is unavailable is needed.

5. The permit must accurately state the actual location of Outfall 002 as being in impaired Upper Harshaw Creek.

ADEQ's Response:

For information about monitoring frequencies, see ADEQ's response to comment 9 and 11.

Most federal public health and environmental programs, such as the Clean Air Act and Safe Drinking Water Act, are designed around the concept of self-monitoring. The Clean Water Act, including the AZPDES program, requires permittees to complete self-monitoring for permit compliance.

The AZPDES permit contains requirements to ensure all data collected and reported by South32 is accurate. South32 is required to keep a Quality Assurance (QA) Manual on-site per Part II.A.3 of the permit. Permittees must use a laboratory licensed by the Arizona Department of Health Services (ADHS) per Part II.A.5 of the permit. South32 must use approved analytical methods per Part II.A.5 of the permit, including meeting quality control standards specified in the approved methods. South32 submits monitoring results on a monthly basis through Discharge Monitoring Reports (DMRs), and laboratory reports must be submitted with the DMR per Part II.B of the permit. ADEQ also reviews DMRs to ensure no effluent limitations were exceeded. South32 must report instances of non-compliance per Part II.C of the permit.

ADEQ completes regular inspections to ensure permittees are complying with their permit requirements. Inspections include, but are not limited to, examination of records submitted to ADEQ, review of on-site documentation, examination of outfalls and sampling locations, and review of the permittee's Quality Assurance Manual. ADEQ may also complete compliance sampling during inspections. If any permit conditions are violated, ADEQ will take the appropriate action, up to and including monetary penalties.

For information about TMDLs, see ADEQ's responses to comments 2, 4, and 7.

For information about new source, see ADEQ's response to comment 1.

At this time, South32 has active coverage under the de minimis general permit (DMGP) for groundwater well development and maintenance. South32 is also authorized to discharge under their administratively continued AZPDES individual permit, see ADEQ's response to comment 18. Information regarding quality, dates, times, and quantity of discharge is publicly available.

Please see ADEQ's webpage for instructions on submitting a records request: <https://www.azdeq.gov/records>. Data submitted for the AZPDES individual permit may also be downloaded from EPA's Enforcement and Compliance History Online (ECHO) by searching the permit number (AZ0026387): <https://echo.epa.gov/trends/loading-tool/get-data/monitoring-data-download>.

For information about the location of Outfall 002, see ADEQ's response to comment 3.

Comment 38-44
Lisa Redpath
Written and Oral Comments

ADEQ has rearranged the order of comments presented in the original submission for comments 38-44.

Comment 38:

I write to you to ask that you refrain from issuing any and all permits to the Australian mine company, South32 and its Hermosa Project. In particular, I object to the renewal of the Arizona Pollutant Discharge Elimination Permit No AZ0026387. I do so for the reasons enumerated below, which are all based in fact, not conjecture. I also want to wholeheartedly endorse and incorporate the well-articulated and clearly defined legal points that PARA's (Patagonia Area Resource Alliance) attorneys have submitted.

Before I get to the itemized list of facts, I must ask you about ADEQ's position that since there are no health standards for manganese (which is highly toxic in uncontrolled settings), the department can and legally must proceed with the permitting process without that information. This is according to Bilaji Vaidyanthan, your Facilities Emissions Control Section Manager. As a lifelong researcher and scholar, I believe that ADEQ would be remiss to move forward without that critical manganese information. That is, how can ADEQ legally and morally move forward with the permitting process while a central element of the application is lacking? It seems to me that ADEQ would be required to have all essential pieces of information about manganese in place before it considers a permit application for a manganese mine. If ADEQ's mission is to "protect and enhance public health and the environment in Arizona . . . through consistent, science-based environmental regulation . . . with integrity, respect, and the highest standards of effectiveness and efficiency," (see ADEQ's website), then ADEQ simply must wait until science-based manganese standards are available. Proceeding through the permit process without that data is contrary to ADEQ's mission to utilize the aforementioned "science-based environmental regulation." Any scientist or academician would also note that without that information, the "integrity" is gone. In short, ADEQ has the process and research backwards. I urge you to hit the pause button until the permitting evaluation can be done correctly.

ADEQ's Response:

Arizona does have surface water quality standards for manganese. See ADEQ's response to comment 8. This response to comments document is for the AZPDES permit; the AZPDES program does not regulate air quality.

Comment 39:

Fact 1. Santa Cruz County has officially been designated as an Extreme Drought region. (Arizona Water Resource Board.) Fact 2. South32 operations will use (dare I say MISuse)and discharge 6.5 million gallons of water per day, right in the heart of this drought area. Fact 3. It is illogical to waste 6.5 million gallons

of water a day anywhere, but especially in an extreme drought area. How would ADEQ be protecting the people and the environment by granting the permit to South32? Fact 6 Governor Hobbs has declared water management to be a top issue for her administration. As an Arizona state agency, how would ADEQ's approval of the water permit for South32 square with the governor's position on water preservation?

ADEQ's Response:

ADEQ acknowledges the drought conditions in Santa Cruz County. However, The AZPDES program does not have the authority to regulate groundwater pumping. See ADEQ's response to comment 19.

Comment 40:

Fact 4. The automotive industry is moving away from electric vehicles, as the demand for them is falling. For example, the car rental company Hertz is selling 20,000 electric vehicles to buy gasoline cars instead. Numerous other examples of this movement away from electric vehicles are in the public media and records. Again, it would be illogical and irresponsible to endanger the good residents of Santa Cruz County for the sake of doubtful and speculative mining operations for ores that are falling out of demand. Fact 7 ADEQ is a government agency and as such has a responsibility to follow the law and to protect the people. Government agencies are not charged with supporting a foreign industry especially when the operations of said foreign industry, in this case South32, will be detrimental at best and possibly lethal at worst, to the citizens of the state.

ADEQ's Response:

The AZPDES program does not have the authority to consider economic impact as part of a permitting decision. The program does not have the authority to consider where a company is from as part of the permit decision.

Comment 41:

Fact 5. On Friday, April 23, 2023, President Biden announced his new environmental justice interagency council. Biden clearly stated that, "Under this order, environmental justice will become the responsibility of every single federal agency – I mean, every single federal agency." (<https://www.cnn.com/2023/04/21/politics/environmental-justice-biden/index.html>) While this is a federal initiative, and ADEQ is a state department, actions that ADEQ will take will resound loudly in this context, good or bad. Biden has also stated that, "We've put environmental justice at the center of what we do, addressing the disproportionate health, environmental, and economic impacts that have been borne primarily by communities of color — places too often left behind." (<https://www.whitehouse.gov/environmentaljustice/>) Those demands alone should lay the foundation for the work that ADEQ must do for the people of Santa Cruz County. However, should ADEQ be focusing only on Arizona laws and guidelines, then we can look to Governor Hobbs.

ADEQ's Response:

Although ADEQ does not have the statutory authority to make permitting decisions based on environmental justice considerations, the agency is committed to making sure that pollution does not have a disproportionate impact on any group of people. In order to assure an effective engagement from our programs with the communities that could be affected by the decisions the agency makes, ADEQ is outlining opportunities for community involvement and public participation through the implementation of a robust community engagement strategy. The agency has established a new Community and Intergovernmental Engagement Office and

appointed an Environmental Justice Coordinator, who ensures that a direct communication is created between the agency and the communities, placing special emphasis in underserved communities. By meaningful engagement, ADEQ seeks that people's technically sound and well-founded feedback can influence the regulatory agency's decisions.

In regards to this permit, ADEQ applied the most stringent standards to protect the environment and promoted public participation, so affected communities could voice their concerns and provide input.

Comment 42:

*Fact 8. South32 is a *new* mine, not one that is continuing to build on a pre-existing foundation. As such, modern day protocols would have to pertain to Sout32 [sic], and clearly there are abundant legal, environmental, and health issues that would require ADEQ to reject South32 permit applications.*

ADEQ's Response:

For information on new source, see ADEQ's response to comment 1.

Comment 43:

Fact 9. ADEQ has not completed or updated numerous TMDL's for Lower and Upper Harshaw Creek, Alum Gulch, and Sonoita Creek. The permitting process cannot proceed without this completed for updated information.

ADEQ's Response:

For information on TMDLs, see ADEQ's responses to comments 2, 4, and 7.

Comment 44:

Fact 10. South32's global track record has been troubling to say the least. While ADEQ can only respond to the application at hand, it stands to reason that self-policing practices would not be reliable or trustworthy in this instance. Therefore, more stringent and frequent monitoring practices must play a role in the permitting process in order for ADEQ to achieve its mission to "protect and enhance public health."

Government agencies are not charged for supporting a foreign industry, especially when the operations of the foreign industry, in this case South 32, will be detrimental at best and possibly lethal at worst to the citizens of the state. I close by saying, I wholeheartedly endorse PARA's legal team's document and stand by all of the articulated and clearly defined points and I urge ADEQ to do the same.

Thank you for your kind attention to this submission. I trust that ADEQ authorities will consider these points with scholarly and scientific integrity as the permit process proceeds.

ADEQ's Response:

Most federal public health and environmental programs are designed to require self-monitoring. For information about how ADEQ ensures compliance with the permit, see ADEQ's response to comment 37.

The AZPDES program does not have the authority to consider where a company is from as part of the permit decision.

Comment 45
Cornelia OCONNOR
Written Comment

Comment 45:

My home is about 600 feet from Hawshaw Creek and I am concerned about the health to this creek and all creeks receiving discharge from the Hermosa South 32 mine. I also get my water from a well. Therefore I want ADEQ to :

- 1. Do more frequent testing*
- 2. Have testing by an independent agency in compliance with EPA and ADEQ standards*
- 3. Have more monitoring locations*
- 4. Test for magnesium*
- 5. Require current standards for all discharge and not accept "historical" as a reason for less stringent requirements.*
- 6. Include PARA comments with my comments*

ADEQ's Response:

1. For information about monitoring frequencies, see ADEQ's response to comment 9 and 11. ADEQ has increased monitoring frequencies based on public comments received.
 2. The Clean Water Act discharge permitting program, administered by ADEQ as the AZPDES program, is designed by law to require permittees to conduct monitoring, see ADEQ's response to comment 37.
 3. The AZPDES program sets end-of-pipe limits in accordance with the Clean Water Act. South32 must sample at each outfall following the last treatment process and prior to mixing with the receiving waters per Part I.A.1. All discharges must meet the effluent limits set in the permit. Note, there is additional monitoring conducted by ADEQ and citizen scientists in Harshaw Creek and Alum Gulch. ADEQ conducts sampling across the state to assess the health of Arizona surface waters against established standards according to CWA § 305(b) and § 303(d). For information about ADEQ's monitoring efforts and data, see <https://www.azdeq.gov/SW-monitoring-n-assessment>.
 4. Magnesium is not one of the minerals targeted by this mining project. There are no SWQS for magnesium; therefore, ADEQ does not have the authority to require monitoring for magnesium. The permit does require monitoring for hardness, which is the sum of the calcium and magnesium concentrations, expressed as calcium carbonate (CaCO₃).
 5. The water quality-based effluent limitations (WQBELs) in the permit are more stringent than the new source performance standards (NSPS), see ADEQ's response to comment 1.
-

Comment 46
Martha Fisher
Written Comment

Comment 46:

As a property owner in Patagonia I object to the ADEQ proposal to renew the Arizona Pollutant Discharge Elimination Permit No. AZ0026387 for South32's Hermosa Project mines.

I was a Hydrologist with USGS for 10 years performing water quality and quantity studies. Our well is 40 feet deep in coarse sands and gravels. It is within 100 ft of the Sonoita Creek bed. This is true for many of the wells providing drinking water to the citizens of Patagonia. Please protect our drinking water from further impairment and pollution from these historic and proposed new mines as is your mandate through the Clean Water Act.

The increased flows of ~ 6 million gallons per day in a creek bed that is largely dry and already impaired will further release pollutants embedded in the upstream impaired tributary creeks Harshaw and Alum. Also as our climate is rapidly changing, we can anticipate even further flooding and dispersion of historic and proposed mine polluting wastes. Please work to reduce our community's drinking water exposure to fewer pollutants rather increased pollutant loads.

Access to our home and that of all of our neighbors is across the Sonoita Creek bed. There is no bridge for access during flooding. With daily flows of 6 million gallons per day for decades, how will we access our homes? What will happen to our property values? Who will be responsible to reimburse us for our loss of healthy drinking water, our health, and the value offer homes?

As a former hydrogeologist from USGS trained in groundwater modeling from University of Waterloo I am horrified that mining companies are exempted from all groundwater regulations. Santa Cruz County has been determined to be an area of Extreme Drought Conditions by the U.Z. Drought Monitor. How can ADEQ allow 6 million gallons per day and more to be dewatered from a huge area of our watershed for 60 years by South32? That is unconscionable. What will happen to our long stored aquifer resources? What will happen to our drinking water supplies? What will happen to all the native flora and fauna living within our watershed?

The Sky Islands in the Coronado National Forest have received national and international recognition for it's conservation value. The World Wildlife Fund recognized the Chihuahuan Desert Region as globally outstanding in its biological distinctiveness and named the ecoregion a top continent-level conservation target. Conservation International has recognized the sky islands as a conservation hotspot. How many acres of our pristine sky islands ecotone will be destroyed by this massive dewatering for decades?

I concur with all of the legal statutory objections as noted in the attached PARA response to the Proposed AZDES Discharge Permit.

I beg you to fulfill your statutory duties to "Act to protect the environment", promote "protection and enhancement of the quality of water resources", provide for the "prevention and abatement of all water and air pollution", and"ensure the preservation of natural beauty" in our state. A.R. S. 49-204(A)(1),(7),(9), and (10).

ADEQ's Response:

ADEQ is committed to protecting human health and the environment by drafting a more protective permit than the currently administratively continued permit. See ADEQ's responses to comments 19 and 21. The AZPDES program does not have the authority to limit groundwater pumping or the flow or volume of water discharged. ADEQ does regulate South32's discharges to groundwater through an Aquifer Protection Program (APP) permit. For more information about APP, see ADEQ's website: <https://www.azdeq.gov/APP/ComplianceAssistance>.

Comment 47
Andrea Wood, Mayor of Patagonia
Written and Oral Comments

Comment 47:

My name is Andrea Wood. I'm a citizen of Patagonia, and the current mayor of Patagonia, I have lived in Patagonia for 48 years. So I'm just going to read what our comment is to ADEQ.

The Town of Patagonia objects to the proposal from ADEQ to renew the Arizona Pollutant Discharge Elimination Permit (AZPDES) no. AZ0026387 for South32's Hermosa Mine Project. The Town is concerned with the discharge quantity of up to 6.5 million gallons a day of possible contaminated water infiltrating the underground alluvial flow in the Sonoita Creek Basin which the Town of Patagonia draws its drinking water.

Without manganese pollutant levels established by ADEQ and or EPA, the amount of water estimated to be discharged could become a source of pollution to our Town's drinking water.

Again, the Town of Patagonia objects to issuing the permit.

I'm speaking on behalf of my children that live here, my grandchildren that live here, my future generation of grandbabies, and everyone's babies for the town of Patagonia.

ADEQ's Response:

The AZPDES program does not have authority to regulate discharges to groundwater; however, ADEQ does regulate South32's discharges to groundwater through an Aquifer Protection Program (APP) permit. For more information about APP, see ADEQ's website: <https://www.azdeq.gov/APP/ComplianceAssistance>.

ADEQ notes that South32 is required to meet SWQS based on the designated uses of Middle Alum Gulch and Lower Harshaw Creek at the point of discharge. All discharges must comply with the effluent limitations and narrative requirements in the permit. These limitations and requirements are set to protect the designated uses of Middle Alum Gulch and Lower Harshaw Creek to ensure discharge is protective of the receiving waters.

ADEQ added an assessment level for manganese, see ADEQ's response to comment 8. An assessment level differs from a discharge limit in that an exceedance of an assessment level is not a permit violation. Instead, assessment levels serve as indicator to ADEQ that there is cause for re-evaluation of reasonable potential for exceeding a water quality standard, which may result in new permit limitations. The assessment level values also serve to advise the permittee of the analytical sensitivity needed for data collection.

Comment 48
Kazarian Giannangelo
Oral Comment

Comment 48:

I'm Kazarian Gianangelo. I'm ordained Minister with Global Community Communications Alliance. I first and foremost want to include power, Patagonia Area Resource Alliance's comments into my comments. I want to get that out of the way first and settle into the end in case I get passionate and carried away and forget to include it. I know that what we're talking about here is, you know, basically we're really only commenting on the things that are applicable to the permits and things.

And we get down into these things, the permits and the standards and the words and the semantics and the numbers and the parts per million and the requirements in this and that and everything. And, you know, that's all good. But that's not how the environment works. And, you know, we're talking about the Arizona Department of Environmental Quality. And I mean, I didn't think about ore, right? When we're down there looking for things in the ground. It's not like the ore is, oh, there's the silver. There's the lead. There's the zinc. It's all mixed up.

I mean, I don't know how it works. I'm not a miner. But I know it's all integrated. It's the same thing with everything else, the air quality, the water quality, and more importantly, maybe the quality of life. And so there's no separation. We can't just look at one thing and say, oh, well, yeah, that's cool. Check off that box. That's good. Hey, I'm going to look up the here. Check that out.

We just got done with the water quality. I mean, we're in the water quality. Just got done with the air quality meeting. Now we've got the water quality meeting. But I really feel there needs to be an overarching thing. And since we're in the water quality one, right, what do they call water, right? The universal solvent.

Yeah, you know, it's universal. Water is life. And just as significant as... the breaths that we take that keep us alive, man. This is like the necessities. And it's about quality of life. They're inseparable.

You can't look at one without looking at the other. And so, you know, I would hate to be in the position of writing a permit, right? They say they're like, it's better to ask forgiveness than to ask permission, right?

Thank God they're asking permission. That's what a permit is, right? But you know, when you ask permission, you can have someone strong say, no, I don't grant you permission.

You can't do that. And that's a legitimate answer. And so that's why I'm asking ADEQ to say, no, pull out the Nancy Reagan, man. You know, just say no. And you know, from public opinion, everybody here tonight, everybody here tonight has been unanimous in their message against this permit.

Not one person has come forward in support of it. So let that sink in. Let it sink in like a cone of depression. I prefer that it be a cone of chocolate chip mint ice cream that the South 32 gives us. But that's my time. Thank you.

ADEQ's Response:

South32 meets all requirements of the Clean Water Act and applicable Arizona statutes. ADEQ is required to issue an individual AZPDES permit to a facility that meets all legal requirements, see ADEQ's response to comment 30.

ADEQ is committed to protecting human health and the environment. See ADEQ's responses to comments 19 and 21.

Comment 49
Jordan Darris
Oral Comment

Comment 49:

I'm Jordan. I actually do have a last name. I just forgot to put it on. I'm Jordan Darris. I'm 15 years old and I lived in Santa Cruz County for two of those 15 years. But I don't want to go on about myself. No, I really cares.

So let's start with this. A TMDL, a lot of people have talked about it. What it actually is, and I'm sure most of you guys know, but just for me, if nobody else, it's a total of maximum daily, what it stands for basically means the amount of pollutants that can be injected into the water without ruining the quality of the water.

So going on with that, the location, one of the locations of where this water is being dumped is in Harshaw Creek. Upper and lower doesn't matter. They're both impaired. So that makes it even worse when you consider that this impaired river, no matter where it is, is going to have six and a half million gallons of water dumped into it. And you can go with the same thing for Alum Gulch and Sonoita Creek, they're all going to have pollutant water put into impaired areas.

So before we let something like that happen, we should have our TMDLs up to date. But they're not. They're outdated. Harshaw Creek is outdated and should be updated before anything is allowed. It also must acknowledge that there are impairments in Lower Harshaw Creek and make a TMDL for Lower Harshaw if it's claiming that outflow 002 is in Lower Harshaw Creek.

It also must acknowledge, ADEQ, I should say it, sorry. ADEQ should acknowledge that this is not an old mine. This is not continuing. If you look at it, does it look old? Does it look like this thing's been running for any period of time? Everything's been going on the last 10 years. It's not even done. They bought this in the 60's and they're claiming it to be new and improved. It's not old. South 32 is not claiming it's continuing. Why are we supposed to let this permit go on the basis that it is continuing? So we should make sure that's clarified.

The final thing I want to say is that how in the world is manganese not monitored on this permit? It's a manganese mine. South 32 is not worried for manganese and it's not on here at any point. We should have manganese on there and we should make sure that people test it because there's multiple tests that are not done frequently enough and they should not be done by South 32. Why are we letting an alcoholic test himself for inebriation? That's all.

ADEQ's Response:

For information about TMDLs, see ADEQ's responses to comments 2, 4, and 7. For information about the new source issue, see ADEQ's response to comment 1. For information about

manganese, see ADEQ's response to comment 8. For information about monitoring frequencies, see ADEQ's response to comments 9 and 11. The Clean Water Act relies on permittees completing self-monitoring, see ADEQ's response to comment 37.

Comment 50
Robert Proctor, Friends of Sonoita Creek
Oral Comment

Comment 50:

My name is Robert Procter and I'm the president of Friends of Sonoita Creek, board member of the Patagonia Area Resource Alliance, Mountain Empire Trail Association, Cienega Watershed Partnership, and I'm a member of the Town of Patagonia Flood and Flow Committee. The Friends of Sonoita Creek has been working with ADEQ on their water watch program. We've been doing monthly field data collection on three places of Sonoita Creek and on Harshaw. We do quarterly metals testing samples that go to the lab in Phoenix. Quarterly on Harshaw. And this is in association with Tucson Audubon and the Nature Conservancy. We also monitor springs in the area and in association with Sky Island Alliance and we'd like to thank these organizations for their participation and assistance.

We ask that ADEQ increase financing and increase testing for metals. Alum and Flux and Harshaw and Red Rock along with all the other tributaries of Sonoita Creek Watershed are impaired. We need to test and clean these waters. We hope that ADEQ and South 32 as an important stakeholder of the Harshaw Watershed participate in funding this cleanup watershed restoration. Another thing the Town of Patagonia is working with the U.S. Forest Service in establishing a Watershed Restoration Action Plan on Harshaw Creek. We hope that South 32 will participate. We hope that they will open up some of the books and some of the information and data that they've been collecting and share that with the Town of Patagonia and other organizations. Again, we hope that ADEQ will increase funding for testing in these areas, especially in Flux and Alum and Harshaw. Thank you.

ADEQ's Response:

ADEQ appreciates the participation of The Friends of Sonoita Creek in our Water Watch Program. While ADEQ cannot address changes to the Water Watch Program as a part of this Response to Comments for an AZPDES permit, ADEQ is looking forward to a continued partnership with Friends of Sonoita Creek and other local organizations. ADEQ is happy to meet with Friends of Sonoita Creek to discuss funding and sampling frequency for the Sonoita Creek Watershed. The Arizona Water Watch Program Coordinator can be contacted at azwaterwatch@azdeq.gov.

Every two years, ADEQ assesses the health of Arizona surface waters against established standards through Clean Water Act Assessments. For information about the Assessment and impairments, please see <https://www.azdeq.gov/SW-monitoring-n-assessment>.

Data submitted by South32 to ADEQ is publicly available. Please see ADEQ's webpage for instructions on submitting a records request: <https://www.azdeq.gov/records>. Data submitted for the AZPDES individual permit may also be downloaded from EPA's Enforcement and Compliance History Online (ECHO) by searching the permit number (AZ0026387): <https://echo.epa.gov/trends/loading-tool/get-data/monitoring-data-download>.

Comment 51

NeoChloris Inc., Charles Stack
Written Comment

Comment 51:

NeoChloris Inc. is an environmental consulting firm with expertise in mining pollution control, please see attached letter. We do NOT support the issuance of NPDES No. AZ0026387 for January Mine Hermosa Project near Patagonia AZ. Reasons include irreparable harm to the environment, damage to the water table and surface water, and impact upon wildlife INCLUDING RECENTLY IDENTIFIED AND VERIFIED SIGHTINGS OF JAGUAR (Panthera onca) IN THIS AREA. Mining techniques are constantly improving, and we suggest waiting until new mining technologies are established which will reduce tailings production, acid mine drainage generation, and pollution from processing metals. Look to Florence Copper in Florence, AZ as an example of modern mining methodology.

ADEQ's Response:

The AZPDES program does not have the authority to specify the mining technology used by the permittee, but the AZPDES program requires all discharges to meet the effluent limitations specified in the permit. ADEQ is committed to protecting human health and the environment. See ADEQ's responses to comments 19, 20, and 21.

Comment 52

DaMaeAn Steinhardt, Global Community Communications Alliance

Oral Comment

Comment 52:

Good evening. I'm a human rights advocate and minister of Global Community Communications Alliance. Well, for the record, this mine, this project is a disgrace to humanity. It has no regard for life, for the natural world, for children, for the good people of this world, has no regard for it. But now that we're here, ADEQ, you're responsible to go the extra mile for the people of this region, the people of Patagonia. And I'm not sure you're even going the first mile.

And I'll read something. The issuance of the permit as written is also, is contrary to ADEQ's own statutory duties, which require, among other things, that ADEQ act to protect the environment, promote the protection and enhancement of the quality of water resources, provide for the prevention and abatement of all water and air pollution, and ensure the preservation and enhancement of natural beauty in our state. That's Arizona Revised Statutes. You guys got to take into account the children of this area, ADEQ. I want to read something else. Under controlling law, the permit cannot be issued until, among other things, ADEQ updates or first prepares the total maximum daily load TMDL studies, the necessary waste load allocations required by the Clean Water Act, so that the impaired contaminated surface waters of Harshaw Creek, Alum Gulch, and Sonoita Creek can finally be returned to good health.

So, I hope that ADEQ is on the right side of history and actually upholds what needs to be upheld here. And I reference and incorporate the PARA comments, Patagonia Resource Alliance, into my comments.

ADEQ's Response:

ADEQ is committed to protecting human health and the environment. See ADEQ's responses to comments 19, 20, and 21. For information about TMDLs, see ADEQ's responses to comments 2, 4, and 7. ADEQ is required to issue an individual AZPDES permit to a facility that meets all legal requirements, see ADEQ's response to comment 30.

Comment 53
O'Breean Mikael
Oral Comment

Comment 53:

My name is Minister O'Breean Mikael. I'm a human rights advocate. I am very concerned about this project and I think the whole fundamental proposal that's underlying this is flawed. The Hermosa Project is acting as if this is a brand new mine that they're working on, but the historic activities that took place many decades ago at the Trench Camp Mine in no way resemble the large-scale industrial mine being developed by South32 today. When the mining company brought the abandoned mine in 2016, not a single building or structure remained, except for the contaminated historic tailings and mine shafts that were managed for remediation purposes only. The deep mine shafts, two wastewater treatment plants, exploration shafts, dewatering wells, new expanded tailings facility containing both historic and new material. Tailings, drainage pond and associated infrastructure at the Hermosa site were built within the last 10 years or are still currently being constructed. For the purpose of construction, this massive and destructive new mine is new. But despite these clear and obvious facts, ADEQ has failed to perform a new source analysis to determine if South32 is subject to the modern requirements of the Clean Water Act, taking the position that the new mine project is nothing more than a continuation of an old historic mine.

This is simply not true. It might be a small portion of the old mine, but the new mine is considered new source under the Clean Water Act. So I sincerely ask as a parent and as someone who loves nature and the environment that ADEQ must determine these new facilities to be legal new sources of discharge before issuing the renewed permit. Then ADEQ must revise the permit to acknowledge that this mine is expected to go into production during the life of this permit.

And again, that as a new source, the mine is subject to all modern performance standards and requirements of the Clean Water Act. And in full support of the Patagonia Area Resource Alliance, I ask that you incorporate them into my comments.

ADEQ's Response:

For information regarding "new source", see ADEQ's response to comment 1.

Comment 54
Izetta Feeny
Written Comment

Comment 54:

*Dear Arizona Department of Environmental Quality,
I'm writing to urge you to deny South32's Hermosa permit (#AZ0026387) for discharge of mine water into Harshaw and Alum creeks. I am amazed that this project is even being seriously considered. With the understanding of how important our groundwater is there is no excuse for mining of this style. We are an intelligent, creative citizenry and we can develop the technology to mine minerals without the heavy use of groundwater. As long as mining companies are allowed to use the old methods and harm water tables, there will be no incentive to modernize and created better systems. Innovation comes when there are obstacles to doing things "as they have always been done". Say no to this permit and encourage innovation.*

ADEQ's Response:

The AZPDES program does not regulate the mining technology used by the permittee, see ADEQ's response to comment 51. The AZPDES program does not have the authority to regulate groundwater pumping, see ADEQ's response to comment 19. ADEQ is required to issue an individual AZPDES permit to a facility that meets all legal requirements, see ADEQ's response to comment 30.

Comment 55
Becky Weber
Written Comment

Comment 55:

Dear Arizona Department of Environmental Quality,

My husband and I recently set into motion the retirement plan of our dreams. We (along with another couple) purchased an old church camp (the ABC Camp on 25 Apache Rd) with the intent of creating a retreat space for birders, hikers (including AZT hikers), and mountain bikers. We have a few years of hard work and preparation ahead of us, but ultimately, we know this project of love will provide a retirement income for us.

To say we are deeply, deeply concerned about South32's Hermosa permit request is an UNDERSTATEMENT.

What will be the long-term impact on our private well? Our dreams are destroyed if we don't have water.

What is the impact on the wildlife.... the flora, the fauna... that will (most likely already have) become dependent on springs that are being unnaturally created by South32's pumping?

We are a couple living on a limited budget... one that involved saving for years and years to make this investment in our future. We count our blessings daily that we were able to purchase property in what we believe to be one of the most beautiful areas of the state. We hope it stays that way.

Thank you for your consideration.

ADEQ's Response:

Middle Alum Gulch and Harshaw Creek have Aquatic and Wildlife designated uses to protect plants and animals. See ADEQ's response to comment 19 for more information about designated uses and how ADEQ sets permit requirements to protect wildlife.

Comment 56
Richard Brown
Written Comment

Comment 56:

I'm writing from out of state, because the Patagonia Mountains, their habitat, forests and watershed, are a national treasure, not just a gem of southeastern Arizona. As such, the Patagonia Mountains habitat warrants protection, not exploitation. This unique wilderness area already faces unprecedented stresses from global warming and the well-documented effects of escalating weather extremes such as excessive drought, flooding and wildfires. For this reason alone, I would ask you to reject the application

and deny South32's Hermosa permit (#AZ0026387) for discharge of mine water into Harshaw and Alum creeks which would become an even more direct and destructive stressor.

I urge you to deny the permit for this project.

ADEQ's Response:

ADEQ is committed to protecting human health and the environment. See ADEQ's responses to comments 19, 20, and 21. ADEQ is required to issue an individual AZPDES permit to a facility that meets all legal requirements, see ADEQ's response to comment 30.

Comment 57

Elijah Tangenberg

Written Comment

Comment 57:

As the people inside and outside of the State have become aware of the lack of groundwater regulations outside of Active Management Areas (such as the Saudi Arabian-owned farms), there is growing concern about how these permits are reviewed. Allowing this permit to be approved would only support the arguments of ADEQ's opponents, bringing further attention to these issues and distracting from the Department's groundbreaking work in other areas of the state. I would hope that ADEQ would be aware enough of the larger conversations surrounding groundwater use not to get unnecessarily mired in these highly political discussions.

ADEQ's Response:

The AZPDES program does not have authority to regulate groundwater pumping. See ADEQ's response to comment 19. ADEQ is required to issue an individual AZPDES permit to a facility that meets all legal requirements, see ADEQ's response to comment 30.

Comment 58

Pamela Yarbrough

Written Comment

Comment 58:

It simply makes no sense to contaminate water sources in such an arid state. Technologies come and go. Please think carefully before deciding on this issue.

ADEQ's Response:

ADEQ is committed to protecting human health and the environment. See ADEQ's responses to comments 19, 20, and 21. ADEQ is required to issue an individual AZPDES permit to a facility that meets all legal requirements, see ADEQ's response to comment 30.

Comment 59

Isabel Schwartz

Written Comment

Comment 59:

I'm writing to urge you to deny South32's Hermosa permit (#AZ0026387) for discharge of mine water into Harshaw and Alum creeks. Our natural environment is our greatest blessing and taking care of it is our highest obligation -- this project will destroy the riparian habitat and wreak untold havoc across

important and irreplaceable land. To destroy the environment in this way in the service of profit is unconscionable. I urge you and the Arizona Department of Environmental Quality to deny the permit for this project.

ADEQ's Response:

ADEQ is committed to protecting human health and the environment. See ADEQ's responses to comments 19, 20, and 21. ADEQ is required to issue an individual AZPDES permit to a facility that meets all legal requirements, see ADEQ's response to comment 30.

Comment 60

Dave Neff

Written Comment

Comment 60:

I am writing you to express concern about South32's Hermosa permit (#AZ0026387) and the effect the discharge of mine water into Harshaw and Alum creeks could have on the surrounding area. Arizona's history is rife with mismanaging water, whether that be too much or too little, eroding healthy ecosystems. The area of the Patagonia Mountains this project takes place is cherished by many and it would be a great public disservice to allow this precious ecosystem to be slowly deteriorated by mining. Please consider rejecting this project on the grounds of public good and a healthy, robust ecosystem. Thank you for your consideration.

ADEQ's Response:

ADEQ is committed to protecting human health and the environment. See ADEQ's responses to comments 19, 20, and 21. The AZPDES program does not have authority to regulate groundwater pumping. See ADEQ's response to comment 19. ADEQ is required to issue an individual AZPDES permit to a facility that meets all legal requirements, see ADEQ's response to comment 30.

Comment 61

Belén Sisk

Written Comment

Comment 61:

Once again, INDIGENOUS PEOPLE OF THIS LANDSCAPE TOHONO O'ODAHM, PASCUA YAQUI AGAIN, ARE PLEADING.

Stop now - BEFORE ITS TOO LATE. HOW MUCH MORE DOES THE EARTH NEED TO GIVE YOU BEFORE YOU SUCK HER DRY???

For all these reasons, I urge you and the Arizona Department of Environmental Quality to deny the permit for this project.

CHIOKOÉ UTTESIA, YAQUI-APACHE DESCENDANT, NATIVE

ADEQ's Response:

ADEQ is committed to protecting human health and the environment. See ADEQ's responses to comments 19, 20, and 21. ADEQ is required to issue an individual AZPDES permit to a facility that meets all legal requirements, see ADEQ's response to comment 30.

Comment 62

Ann Horner
Written Comment

Comment 62:

Santa Cruz County depends on tourism dollars to support a quality lifestyle for all. Much of the draw to our area consists of birds, wildlife and natural beauty. Altering water in the area in any way endangers all of us. Mankind's interference is never without repercussions. Too often humans jump in without knowing what their impact will be.

Rllo [sic] Rico managed to dodge a mining proposal by Andy Jackson this summer - this seems like a continuation of the same bad idea. Nature must be preserved as opposed to going for short term gain and industry.

Although water in the desert is a rarity, and one would think that increased flow would help our streams, because of the sensitive ecological balance of these riparian ecosystems, a change in flow regime this drastic could permanently alter the character and species composition of these areas.

For all these reasons, I urge you and the Arizona Department of Environmental Quality to deny the permit for this project.

Thank you for listening to voices who own property and are invested in this area.

ADEQ's Response:

The AZPDES program does not have the authority to consider economic impact as part of a permitting decision, see ADEQ's response to comment 30. ADEQ is committed to protecting human health and the environment. See ADEQ's responses to comments 19, 20, and 21.

Comment 63
Georgette Larrouy
Written Comment

Comment 63:

Given this well-researched scientific information with the grave possibility of destroying an entire riparian area, including a rich historical town where living people have resided for generations, in a drought -stricken state, with the Climate Crisis affecting us all right now, I really cannot imagine any regulatory body approving such a foolhardy plan. It would be an unconscionable DISASTER! The financial gains for a foreign entity should never be considered more important than living, breathing humans, animals and plants!

ADEQ's Response:

The AZPDES program does not have the authority to consider economic impact as part of a permitting decision, see ADEQ's response to comment 30. ADEQ is committed to protecting human health and the environment. See ADEQ's responses to comments 19, 20, and 21. ADEQ is required to issue an individual AZPDES permit to a facility that meets all legal requirements, see ADEQ's response to comment 30.

Comment 64
Emily Hartley

Written Comment

Comment 64:

The Patagonia Mountains are necessarily habitat for rare and imperiled species including the Mexican spotted owls, North American porcupine, and jaguar. It's is reprehensible to literally undermine the habitat these species depend through the Hermosa mine. A decision to let the mine proceed with their water plans will do irremediable harm that is unacceptable and hurts Arizona's spectacular living natural resources.

ADEQ's Response:

ADEQ is committed to protecting human health and the environment. See ADEQ's responses to comments 19, 20, and 21. Arizona sets surface water quality standards (SWQS) based on the designated use of the waterbody. These SWQS are reviewed and approved by EPA. The permit contains water quality-based effluent limitations (WQBELs) based on the SWQS for these designated uses. The permit limitations ensure that the discharges from the January Mine Hermosa Project site are protective of the plants, animals, and organisms that live in and around Alum Gulch and Harshaw Creek. For more information about SWQS, see ADEQ's response to comment 36,

Comment 65

Sean Manion

Written Comment

Comment 65:

The pumping and release of water into local streams will alter the natural hydrologic regime and negatively impact all the linked riparian systems in the area. This portion of Southern Arizona is a biodiversity hotspot and the Hermosa32 project will have a devastating negative impact upon regional biodiversity.

ADEQ's Response:

ADEQ is committed to protecting human health and the environment. See ADEQ's responses to comments 19, 20, and 21.

Comment 66

Karen Gates

Written Comment

Comment 66:

I'm writing to urge you to deny South 32's Hermosa permit (#AZ0026387) for discharge of mine water into Harshaw and Alum creeks.

Although South 32 has rights as a landowner, it does not have the right to destroy other landowners' use and enjoyment of their property. Such drastic alteration of our underground water system will adversely affect everyone's water supply, and cause irreversible harm to animal and plant life in this fragile area.

We rely on oversight by you and others in our state government to protect our lives, our property values and the ecosystem at large. Surely the many residents of this area should have a voice at least as loud as South 32's in this important matter.

Please live up to your department's name and make the right decision to protect the quality of our natural environment and deny the permit for this project.

ADEQ's Response:

The AZPDES program does not have the authority to consider economic impact as part of a permitting decision, see ADEQ's response to comment 30. The AZPDES program does not have the authority to regulate groundwater pumping. See ADEQ's response to comment 19. ADEQ is committed to protecting human health and the environment. See ADEQ's responses to comments 19, 20, and 21. ADEQ is required to issue an individual AZPDES permit to a facility that meets all legal requirements, see ADEQ's response to comment 30.

Comment 67

Carol Jelinek

Written Comment

Comment 67:

I urge you to take into consideration what has been happening in Utah, California, and Texas where the depletion is leading to fissures in the ground and buckling roadways. Let's not be led down the same path. Let's learn from our neighboring states and improve on the situations before we too have damage.

ADEQ's Response:

The AZPDES program does not have the authority to regulate groundwater pumping. See ADEQ's response to comment 19.

Comment 68

Reed Spurling

Written Comment

Comment 68:

I am writing to express my opposition to South32's requested permit (#AZ0026387) for removing water from the water table around the site of their proposed Hermosa project. As a planetary science student I have a basic understanding of groundwater and stream flow, so it is clear to me that South32's proposed actions would cause irreversible harm to the land and ecology around their project site. Removing large amounts of groundwater from a single area will lower the water level in a large radius around that area, drying up springs that provide habitats for endemic species, and killing plants whose roots were previously long enough to reach the water below them. We see this already at other sites around Arizona with significant groundwater pumping, where even mesquites with their very long roots can struggle to reach water. Such actions are unsustainable, and will decrease the land's ability to support future generations of Arizonans. Additionally, South32's proposed discharges of large amounts of water into streams formed by smaller amounts of water would cause erosion, negatively affecting streambank ecology and reducing the landscape's overall resilience. These proposed impacts are unacceptable, so I urge the Arizona Department of Environmental Quality to deny the permit for this project.

ADEQ's Response:

The AZPDES program does not have authority to regulate groundwater pumping. See ADEQ's response to comment 19. ADEQ is committed to protecting human health and the environment. See ADEQ's responses to comments 19, 20, and 21. ADEQ is required to issue an individual AZPDES permit to a facility that meets all legal requirements, see ADEQ's response to comment 30.

Comment 69
Brandon Olander
Written Comment

Comment 69:

As a lifelong Southern Arizona resident, I'm writing to urge you to deny South32's Hermosa permit (#AZ0026387) for discharge of mine water into Harshaw and Alum creeks. I would hate to see what little ephemeral creeks we have left in the region put at risk by the groundwater that would be pumped out of the ground and other effects of industrial mining on bodies of water. For all these reasons, I urge you and the Arizona Department of Environmental Quality to deny the permit for this project.

ADEQ's Response:

The AZPDES program does not have authority to regulate groundwater pumping. See ADEQ's response to comment 19. ADEQ is committed to protecting human health and the environment. Also see ADEQ's responses to comments 20 and 21. ADEQ is required to issue an individual AZPDES permit to a facility that meets all legal requirements, see ADEQ's response to comment 30.

Comment 70
Clark Hansen
Written Comment

Comment 70:

I was born in Arizona and plan to return there one day. I'm writing to urge you to deny South32's Hermosa permit (#AZ0026387) for discharge of mine water into Harshaw and Alum creeks. This is NOT the place to conduct mining operations. The proposed impacts are unacceptable.

It's foolhardy to use the dewatering method in this area -- you don't want to create a cone of depression around the mine, not to mention the havoc the mine would create from increased flow rates in nearby creeks -- six MILLION unsupportable gallons per day devastating Harshaw Creek and another 172 thousand catastrophic gallons a day thrust into Alum Creek. This is not how to manage water in a place where water is so precious -- just because the mine CAN doesn't mean it should -- it's so destructive and disruptive!

Cutting off supply to vital springs that have developed naturally over centuries, killing trees and causing ecosystem collapse? NO! Don't allow it!

Think of the upstream erosion, excessive sediment piling up downstream and the wiping out of vital seeps and springs. Think of the endemic species -- who are using a limited area very efficiently -- that you'll wipe off the face of the earth! Flash floods, disappearing cottonwoods and sycamores, and unknown changes in the quality of water coming from deep in the mines. NO! Don't allow it!

I urge you and the Arizona Department of Environmental Quality to deny the permit for this project.

ADEQ's Response:

The AZPDES program does not have the authority to regulate groundwater pumping. See ADEQ's response to comment 19. ADEQ is committed to protecting human health and the environment. Also see ADEQ's responses to comments 20 and 21. ADEQ is required to issue an

individual AZPDES permit to a facility that meets all legal requirements, see ADEQ's response to comment 30.

Comment 71
Vincent R. Waldron
Written Comment

Comment 71:

Please deny South32's Hermosa permit (#AZ0026387) for discharge of mine water into Harshaw and Alum creeks.

As a year of public lands in the Patagonia area (and a former resident) I know that water is scarce in the area. The few springs are crucial for wildlife. I have read the various reports and impact statements and see that drawing the aquifer near the mind is likely to have effects on nearby water sources. How could it not? The proposed draw down is massive in scale. As I understand it, your job is to protect the water resources of our arid state. Please do that for us, the citizens of Arizona, by rejecting this permit.

ADEQ's Response:

The AZPDES program does not have authority to regulate groundwater pumping. See ADEQ's response to comment 19. ADEQ is committed to protecting human health and the environment. See ADEQ's responses to comments 20 and 21. ADEQ is required to issue an individual AZPDES permit to a facility that meets all legal requirements, see ADEQ's response to comment 30.

Comment 72
Lauren Renteria
Written Comment

Comment 72:

I have called the Sonoran Desert my home for 10 years and know how important it is to protect this one-of-a-kind ecosystem. As you know, water is our most precious resource. For thousands of years, plants, animals and humans alike have found innovative ways to thrive in the desert by respecting the land and living off the limited water that flows across our beautiful state. However, our modern-day impacts on the environment have greatly changed the landscape and access to water. The effects of climate change are not small. The fact of the matter is that our state is in a water crisis that is projected to only get worse in the next few decades. We don't have the luxury of wasting what little water we have left or taking the risk of contaminating water systems that we, as well as our plant and animal counterparts, need to survive. In addition to this, the Sonoran Desert ecosystem is extremely fragile. This landscape is the only one of its kind in the world and more mining in the area would forever change the health of our beautiful desert. I want this desert to thrive for generations to come and that's why I am urging you to deny South32's Hermosa permit (#AZ0026387) for discharge of mine water into Harshaw and Alum creeks. The Sky Island Alliance has outlined excellent reasons why you should reject this permit for the mine. I completely agree with the organization's assessment and hope you do too.

ADEQ's Response:

ADEQ acknowledges the importance of water resources. The permit contains effluent limitations and monitoring requirements to ensure all discharges are protective of the ecosystem and water system. ADEQ is committed to protecting human health and the environment. See ADEQ's responses to comments 20 and 21. ADEQ is required to issue an individual AZPDES permit to a facility that meets all legal requirements, see ADEQ's response to comment 30.

Comment 73
Rachel Slick
Written Comment

Comment 73:

I'm writing to urge you to deny South32's Hermosa permit (#AZ0026387) for discharge of mine water into Harshaw and Alum creeks.

The consequences of these actions would be disastrous for every plant and creature living there. It's not worth it.

For all these reasons, I urge you and the Arizona Department of Environmental Quality to deny the permit for this project.

ADEQ's Response:

ADEQ is committed to protecting human health and the environment. See ADEQ's responses to comments 19, 20, and 21. ADEQ is required to issue an individual AZPDES permit to a facility that meets all legal requirements, see ADEQ's response to comment 30.

Comment 74
Tim Schirack
Written Comment

Comment 74:

Dear Arizona Department of Environmental Quality, I'm writing to urge you to deny South32's Hermosa permit (#AZ0026387) for discharge of mine water into Harshaw and Alum creeks. You already know exactly how I'm rnsely [sic] harmful this would be to an already fragile ecosystem. Please don't let this happen! I urge you and the Arizona Department of Environmental Quality to deny the permit for this project.

ADEQ's Response:

ADEQ is committed to protecting human health and the environment. See ADEQ's responses to comments 19, 20, and 21. ADEQ is required to issue an individual AZPDES permit to a facility that meets all legal requirements, see ADEQ's response to comment 30.

Comment 75
Charlene Saltz
Written Comment

Comment 75:

As a soon to be resident in Patagonia and currently living within 25 miles from the town, I am very concerned about the impact of the mine on water quality and habitat loss. I moved to the are because of the biological diversity and unique ecosystem. It needs to be protected as it is a biological hotspot for endangered species, threatened species and those close to being on the list.

As an EV driver and supporter , I understand the need for minerals to support EV growth. However, there is plenty of other options for manganese internationally and quite frankly, I don't think there is much

demand for it. Has it really been proven to be a needed mineral and at what expense? Have other sources been explored. If this is the best option, then the mine needs to be held accountable to be responsible stewards. The discharge they are proposing is the opposite of being a responsible steward.

ADEQ's Response:

ADEQ is committed to protecting human health and the environment. See ADEQ's responses to comments 19, 20, and 21. The AZPDES program does not have the authority to consider the demand for a mineral in permitting decisions.

Comment 76

Keith Cliver

Written Comment

Comment 76:

To ruin one of the most biologically diverse areas of the United States and destroy the water table for the surrounding communities is a travesty and disgrace. If this permit for South 32 gets approved, I lose all faith in and respect for the AZ Dept of Environmental Quality. You might as well move to Australia so you can cash your checks easier.

ADEQ's Response:

ADEQ is committed to protecting human health and the environment. See ADEQ's responses to comments 19, 20, and 21. ADEQ is required to issue an individual AZPDES permit to a facility that meets all legal requirements, see ADEQ's response to comment 30.

Comment 77

Jan Espe

Written Comment

Comment 77:

Please say no to South32's Hermosa permit (#AZ0026387) for discharge of mine water into Harshaw and Alum creeks. The effects of this would destroy our fragile ecosystem on which so much flora and fauna are dependent. It would deplete ancient water that will never be replenished. There are many that can tout more scientific data but it does not take a trained consultant to know the idea of dewatering of the kind that this mine wants to do is absolutely insane. There is no resource on this planet worth this kind of destruction.

I urge you and the Arizona Department of Environmental Quality to deny the permit for this project.

ADEQ's Response:

The AZPDES program does not have authority to regulate groundwater pumping. See ADEQ's response to comment 19. ADEQ is committed to protecting human health and the environment. See ADEQ's responses to comments 19, 20, and 21. ADEQ is required to issue an individual AZPDES permit to a facility that meets all legal requirements, see ADEQ's response to comment 30.

Comment 78

Karen Allison

Written Comment

Comment 78:

The proposed discharge of water by the Hermosa mine into Harshaw and Alum creeks will be a disaster for the unique environment and wildlife who depend on springs located nearby. I urge you to deny the South32's permit (#AZ0026387).

ADEQ's Response:

ADEQ is committed to protecting human health and the environment. See ADEQ's responses to comments 19, 20, and 21. ADEQ is required to issue an individual AZPDES permit to a facility that meets all legal requirements, see ADEQ's response to comment 30.

Comment 79**Doris Rusch****Written Comment****Comment 79:**

Please deny South32's Hermosa permit (#AZ0026387) for discharge of mine water into Harshaw and Alum creeks. I can't believe we would even be considering pumping our aquifer dry and squandering all that water into intermittent creeks. These creeks have developed their unique ecological niche which will be destroyed with the flux of all that water. Springs will be washed out and destroyed. Should the Hermosa mine be allowed to go ahead with this plan, a whole ecosystem will be wiped out. We will regret permitting this. Generations to come will look back on such a stupid decision and revile this generation to have allowed it. There is nothing as valuable as the water resources we have. Leave it intact. Please do what's right. Deny the permit.

ADEQ's Response:

The AZPDES program does not have the authority to regulate groundwater pumping. See ADEQ's response to comment 19. ADEQ is committed to protecting human health and the environment. See ADEQ's responses to comments 19, 20, and 21. ADEQ is required to issue an individual AZPDES permit to a facility that meets all legal requirements, see ADEQ's response to comment 30.

Comment 80**Samuel Courtney****Written Comment****Comment 80:**

Me and myriad of concerned individuals are perplexed about how elected and appointed officials are choosing to use our state's ephemeral water supply. In recent years it is becoming increasingly vital to protect what limited quantities of the objectively paramount resource we relish in. It is no well kept secret that, most unfortunately, our population will continue to grow exponentially; furthermore with a population base using more gallons of water per capita moreso than nearly every other contiguous state it becomes apparent that a decision must be made about how we collectively choose to spend this resource. Either we relentlessly discard the approximate volume of water that the entire Tucson metro area's population uses yearly in what is close to perpetuity for the lifespan of individuals aged enough to vote, all in a vain effort to produce materials that are already widespread in electronic waste (should manufacturers be responsible enough to recycle them), or we choose to be the harbingers of a habitable environment for our children to appreciate and subside in. How many morally condemnable transgressions have been made in the name of economic development? South 32 claims that their "Hermosa Project" will bring 1000 jobs to our region; well I ask how is it beneficial to have a thousand

jobs now and eliminate millions of jobs within the next century when our water has been sucked dry by the highest bidding malevolent benefactor, and the land is a desolate dust heap no longer arable or habitable. I hear time and again arrogant or perhaps paid politicians in our state speak of how it is critical to become energy independent, to be able to produce minerals that can be used to bolster manufacturing domestically, yet not once have I heard these people speak about how virtually all raw minerals are processed by foreign adversaries; nor how the majority stockholders of the Canadian South32 are active PRC members. So again I cannot help but ask, if this project will inhibit actual energy independence, squander a nearly unimaginable volume of water, destroy local communities ground water supply, eject toxic discharge downstream into the environment, eliminate one of the most biodiverse habitats in the country, and barely produce a single neighborhoods worth of jobs, all for minerals that if recycled in last year's phone waste alone could've built over 100,000 electric vehicles, then why is it even being considered. I plea, beg even, that the water rights permit not be relinquished to an enemy of our communities, end the cycle of perpetual development that ends only in the complete and utter destruction of Arizona.

ADEQ's Response:

The AZPDES program does not have the authority to regulate groundwater pumping. See ADEQ's response to comment 19. The program does not have the authority to consider the economic impact or morality of mining as part of a permitting decision, see ADEQ's response to comment 30. ADEQ is committed to protecting human health and the environment. See ADEQ's responses to comments 20 and 21.

Comment 81
Mike Ingram
Written Comment

Comment 81:

I'm writing to urge you to deny South32's Hermosa permit (#AZ0026387) for discharge of mine water into Harshaw and Alum creeks. The proposed impacts are unacceptable and fall into two main categories: 1) dewatering due to the "cone of depression" that would be created around the mine and 2) disturbances that would come from dramatically increased flow rates in nearby creeks.

The watershed in the Patagonia Mountains is critical to the town of Patagonia and to the tourist based economy of the region. Foreign owned South32 wants to essentially DESTROY THE MOUNTAIN WATERSHED for their mining project. I cannot see how the Arizona Department of Environmental Quality can approve a project that is this detrimental to the area. Tell South32 to find another way besides the de-watering or go back to Australia.

ADEQ's Response:

The AZPDES program does not have the authority to regulate groundwater pumping. See ADEQ's response to comment 19. ADEQ is committed to protecting human health and the environment. See ADEQ's responses to comments 20 and 21. ADEQ is required to issue an individual AZPDES permit to a facility that meets all legal requirements, see ADEQ's response to comment 30.

Comment 82
Mary Meister
Written Comment

Comment 82:

I'm writing to urge you to deny South32's Hermosa permit (#AZ0026387) for discharge of mine water into Harshaw and Alum creeks. The proposed impacts are unacceptable and fall into two main categories: 1) dewatering due to the "cone of depression" that would be created around the mine and 2) disturbances that would come from dramatically increased flow rates in nearby creeks.

As a member of Sky Island Alliance, you are aware of the variety of impacts this mining will cause. Southern AZ is filled with the mess previous mines have left behind. We have already messed up the ground water and water tables. We have already devastated wildlife over the years. It's time to step back and realize we cannot continue to "mine baby mine"! Do not approve this mining permit. Mining must find new processes that does not require use of large quantities of water and then ruining the area and moving away leaving clean up for the residents living in the area.

ADEQ's Response:

The AZPDES program does not have the authority to regulate groundwater pumping. See ADEQ's response to comment 19. ADEQ is committed to protecting human health and the environment. See ADEQ's responses to comments 20 and 21. ADEQ is required to issue an individual AZPDES permit to a facility that meets all legal requirements, see ADEQ's response to comment 30.

Comment 83**Dana Hook****Written Comment****Comment 83:**

I'm writing to urge you to deny South32's Hermosa permit (#AZ0026387) for discharge of mine water into Harshaw and Alum creeks. This is too damaging to our environment and we do not require the firms that profit from this damage to fix the problems they cause. I love living in the Sonoran desert and am advocating for its protection. Please deny the South 32s permit

ADEQ's Response:

ADEQ is committed to protecting human health and the environment. See ADEQ's responses to comments 19, 20, and 21. ADEQ is required to issue an individual AZPDES permit to a facility that meets all legal requirements, see ADEQ's response to comment 30.

Comment 84**Kathleen Sudano****Written Comment****Comment 84:**

I am besides myself with the thought of what damage this permit will do to our remaining creeks. At a time we frantically try to plant trees to shade and cool our urban areas, how can we waste our groundwater? Let's also remember the waste this discharging contains and the danger to our plant and animal life.

I'm writing to urge you to deny South32's Hermosa permit (#AZ0026387) for discharge of mine water into Harshaw and Alum creeks.

For these reasons, I urge you and the Arizona Department of Environmental Quality to deny the permit for this project.

ADEQ's Response:

ADEQ is committed to protecting human health and the environment, see ADEQ's responses to comments 19, 20, and 21. The AZPDES program does not have the authority to regulate groundwater pumping, see ADEQ's response to comment 19. ADEQ is required to issue an individual AZPDES permit to a facility that meets all legal requirements, see ADEQ's response to comment 30.

Comment 85

John Floyd

Written Comment

Comment 85:

I seldom write to politicians. However, now I'm writing to urge you to deny South32's Hermosa permit (#AZ0026387) for discharge of mine water into Harshaw and Alum creeks.

The ecological impact is unacceptable and falls into two main categories: 1) dewatering due to the "cone of depression" that would be created around the mine and 2) disturbances that would come from dramatically increasing the likelihood of downstream flash flooding.

Please consider placing this permit on hold until these two, irresponsible and irreversible consequences can be mitigated.

ADEQ's Response:

ADEQ is committed to protecting human health and the environment. See ADEQ's responses to comments 19, 20, and 21. ADEQ is required to issue an individual AZPDES permit to a facility that meets all legal requirements, see ADEQ's response to comment 30.

Comment 86

Ozlem Erol

Written Comment

Comment 86:

Climate change and drought already cause water scarcity in Arizona. Arizona's nature is already struggling due to the human caused climate change. We are concerned the mining project by South32 will further harm the environment and the precious Patagonia Springs and Creeks. We can not let that happen. If we lose the natural beauty and wildlife in Patagonia today, it might never return no matter how much we would try to rehabilitate the place. We want to keep Patagonia safe from any mining and other harming projects. This is extremely important to us and our future generations.

ADEQ's Response:

ADEQ is committed to protecting human health and the environment. See ADEQ's responses to comments 19, 20, and 21.

Comment 87

Michael Milillo

Written Comment

Comment 87:

I respectfully request that AZDEQ reject the requested permit No. AZOO26387 for the January Hermosa Mine Project. The subject area is documented to contain multiple freshwater springs that help sustain wildlife. We are in a severe drought and can't afford to pump our aquifers dry for a short term mining project. I strongly urge that you reject this permit.

ADEQ's Response:

ADEQ is committed to protecting human health and the environment. See ADEQ's responses to comments 20 and 21. The AZPDES program does not have authority to regulate groundwater pumping. See ADEQ's response to comment 19. ADEQ is required to issue an individual AZPDES permit to a facility that meets all legal requirements, see ADEQ's response to comment 30.

Comment 88

James Graeter

Written Comment

Comment 88:

I am opposed to approval of the Mining Permit for the Hermosa Project

ADEQ's Response:

ADEQ acknowledges your opposition. ADEQ is required to issue an individual AZPDES permit to a facility that meets all legal requirements, see ADEQ's response to comment 30.

Comment 89

Timothy Ernster

Written Comment

Comment 89:

I am opposed to the issuance of permit for the Hermosa Mine in that it would adversely affect the biodiversity of the area and threaten ground water supplies that would have a lasting detrimental affect on the area.

ADEQ's Response:

ADEQ is committed to protecting human health and the environment. See ADEQ's responses to comments 20 and 21. The AZPDES program does not have authority to regulate groundwater pumping. See ADEQ's response to comment 19.

Comment 90

Joe Carr

Written Comment

Comment 90:

Please turn down the mining permit. Thanks joe Carr visitor to you're state

ADEQ's Response:

ADEQ acknowledges your opposition. ADEQ is required to issue an individual AZPDES permit to a facility that meets all legal requirements, see ADEQ's response to comment 30.

Comment 91
Emily Moddelmog
Written Comment

Comment 91:

My name is Emily Moddelmog and I have lived in Rio Rico, AZ, for about 4 ½ years. I am the secretary of the Calabasas Alliance, a local non-profit organization that was created in order to educate residents of Santa Cruz County about South32 and the Hermosa Project. I moved to Santa Cruz County for the beauty, the flora, the fauna, the culture and the diversity. I am extremely concerned about how the Hermosa Project mine in the Patagonia Mountains will use, release and treat the water they need in order to extract the minerals they are looking for. I believe the biodiversity of this area will be negatively affected by the dewatering as well as the release of the water. It is your responsibility to protect this area and not be swayed by the money that South32 is bringing to the table. This company does not care about anything but profits and they will do whatever is necessary to make money. Right now, many local residents do not have confidence in AZDEQ so this agency needs to show us that it is serious about protecting Arizona's natural resources and not selling them off to the highest bidder.

ADEQ's Response:

The AZPDES program does not have authority to regulate groundwater pumping. See ADEQ's response to comment 19. The program does not have the authority to consider economic impact as part of a permitting decision, see ADEQ's response to comment 30. ADEQ is committed to protecting human health and the environment. See ADEQ's responses to comments 20 and 21.

Comment 92
Jeff Derickson
Written Comment

Comment 92:

Please reject the mining permit due to the environmental damage that will be associated with it.

ADEQ's Response:

ADEQ is committed to protecting human health and the environment. See ADEQ's responses to comments 19, 20, and 21. ADEQ is required to issue an individual AZPDES permit to a facility that meets all legal requirements, see ADEQ's response to comment 30.

Comment 93
Diane Ensign
Written Comment

Comment 93:

Our family owns property in Patagonia & we know it's critical to deny the Mine Hermosa Permit No. AZ0026387. It would absolutely harm the Patagonia area as 1 of Az. sky island regions that is 1 of the most biodiverse on our planet. Within our Patagonia mountains are aquifers that feed Sonoita creek (that runs continuously) & forests, grasslands, & riparian cienegas with rare and diverse birds. People from not only the U.S. but other countries as well come to Patagonia because of its reputation for BIRDWATCHING. If this mine is allowed then Sonoita Creek & the groundwater WILL BE POLLUTED which obviously will harm all the animal, plant, birdlife & us who live & work & visit Patagonia. It's imperative to protect this groundwater & Sonoita Creek.

Please deny this Australian mining company, South32, to extract heavy metals from out Patagonia mountains & ultimately pollute & destroy the aquifer there & thus Sonoita Creek. Obviously the mine would harm everyone in Patagonia & those who benefit from the tourists coming for birding or the atmosphere of a small town. In order to access the deposits, The Arizona Department of Environmental Quality (ADEQ) has issued the mine permits that allows them to pump over six million gallons of water each day from the aquifer and discharge it into Harshaw and Alum creeks, both of which lead to Sonoita creek.

Please do not allow this to happen. It would bring tragic results to everyone & all living things in the Patagonia area & eventually get in our Patagonia drinking water. Many years ago, our dad gave Patagonia the land where its drinking water reservoir sits.

PLEASE ADEQ reject this permit in order TO PRESERVE PATAGONIA, our precious Sky Island with its abundance of life & water resource, & our family as well as the other people in the area. This permit needs to be denied.

We are planning to build on our property in Patagonia (above the high school & near the reservoir) & if the mine is allowed our plans would be ruined.

ADEQ's Response:

See ADEQ's response to comment 19. ADEQ is committed to protecting human health and the environment. See ADEQ's responses to comments 20 and 21. The AZPDES program does not have the authority to regulate groundwater pumping. ADEQ is required to issue an individual AZPDES permit to a facility that meets all legal requirements, see ADEQ's response to comment 30.

Comment 94

Richard B. Jr. Ensign
Written Comment

Comment 94:

Allowing the mine to release 6,000,000 gallons per day of waste water into the Sonoita Creek watershed would seriously threaten the amount and quality of the water supply for the Town of Patagonia. I own 42 Town lots and 39 acres of land in the Patagonia Hills subdivision which is adjacent to the Town limits. This land will be developed in the future and a good water supply is necessary for this to happen.

ADEQ's Response:

ADEQ is committed to protecting human health and the environment. See ADEQ's responses to comments 19, 20, and 21. ADEQ sets designated uses that are protective of downstream waterbodies, see ADEQ's response to comment 20.

Comment 95

James Nolan
Written Comment

Comment 95:

I'm writing to request you not approve the proposed South32's Hermosa permit (#AZ0026387) for discharging pumped aquifer waste water into Harshaw and Alum Creeks in its current form. The likely adverse impacts allowed by this proposed permit include reduction in groundwater due to aquifer pumping and adverse physical and chemical impacts due to significantly increased flow rates in Harshaw and Alum creeks from South32 discharges.

Groundwater Impacts

Pumping out the aquifer waste water will undoubtedly reduce the water table level in the area and will likely adversely affect the water supply of numerous neighbors. The change in hydraulic gradients around the mine will very likely change the [sic] where current springs emerge, permanently drying natural water sources. Neighboring ranchers will likely be adversely impacted as groundwater fed livestock tanks could dry up. It's not clear that replenishing the groundwater with the treated aquifer waste water, rather than discharging it, was considered. ADEQ should evaluate recharging the aquifer as an alternative to discharge.

Stream Impacts

Up to 6.5 million gallons of water per day is proposed to be discharged into Harshaw Creek and up to 172,000 gallons per day into Alum Creek. Such large volumes will far exceed the usual intermittent, and base flows in these creeks. This will likely result in significant adverse physical impacts, including significant upstream erosion and excessive downstream sedimentation. In addition to the physical impacts, such large volumes of water introduced into these creeks will also likely liberate and transport numerous toxic materials existing within the sediments of both Lower Harshaw and Alum Creek. These contaminants, including acid, lead, copper, and zinc, are well known remnants of legacy mining in the area. In fact, EPA, USFS, and ADEQ are very aware of this issue and have formed a partnership to remediate many of these sediments in Harshaw Creek. I'm attaching an EPA fact sheet describing this partnership.

The proposed discharges from South32 are likely to release these known contaminants from the sediments in the creeks, yet the permit only names a point of compliance immediately downstream of the outfall. ADEQ should require additional monitoring further downstream and require South32 to continue to remediate the contaminated creek sediments released as a result of their discharges. For these reasons, I request the Arizona Department of Environmental Quality to not issue the proposed permit in its current form.

ADEQ's Response:

ADEQ is committed to protecting human health and the environment. See ADEQ's responses to comments 20 and 21. The AZPDES program does not have authority to regulate groundwater pumping, see ADEQ's response to comment 19. The program does not have the authority to determine an alternative disposal method, such as groundwater recharge. ADEQ is required to issue an individual AZPDES permit for discharge to a facility that meets all legal requirements, see ADEQ's response to comment 30.

Comment 96

Carl Schmidlapp
Written Comment

Comment 96:

Don't you realize There [sic] is no water to spare here, water levels dropping every year, more drought every year.

6 million gallons a year for the mine

FORGET IT. REFUSE TO ISSUE PERMIT future operations.

ADEQ's Response:

The AZPDES program does not have authority to regulate groundwater pumping. See ADEQ's response to comment 19. ADEQ is required to issue an individual AZPDES permit for discharge to a facility that meets all legal requirements, see ADEQ's response to comment 30.

Comment 97
Charles Conner
Written Comment

Comment 97:

All mining in the proposed area should not be allowed, especially by foreign companies. The value of this area's natural environment far outweighs destructive extractive activities that will forever scar the landscape. Thank you for doing the right thing, please.

ADEQ's Response:

The AZPDES program does not have the authority to consider economic impact or where a company is from as part of a permitting decision, see ADEQ's response to comment 30. ADEQ is committed to protecting human health and the environment. See ADEQ's responses to comments 19, 20, and 21.

Comment 98
Michael Stabile
Written and Oral Comments

Comment 98:

Once again AZDEQ is not looking at the effects this discharge might have on the environment and possibly on the Town of Patagonia. You are taking a natural stream and turning it into a man-made river. The system passes through highly mineralized rock and because of the major addition, much more absorption will take place. The fact that there is much water in the system the larger amount of heavy metals will be transported downstream towards the town of Patagonia. The other fact that is ignored is that upper Harshaw which is impaired is less than 1/2 mile away upstream which dumps into lower Harshaw every rainy season. This will also increase the contaminants heading downstream. Why doesn't the agency look at cause and effect, they use the excuse that the water released is clean so they wash their hands of the future mess they might create. Maybe the whole concept of man-made climate change is also a myth.

I'm a Patagonia resident. At a recent meeting, Mr. Perzier, the head of ADEQ stated that once the water comes out of the treatment plant, as long as it's clean, that they have no more responsibility. So that's my problem, cause and effect. You're discharging 6,000 gallons, 6 million gallons a day into a natural stream and turning it into a man-made river. And that's the question, man-made. We hear it all the time, man-made climate change. So you're going to have a man-made disaster with this river transmitting that much water through the system. As it travels downstream, it passes through highly mineralized rocks, and it makes its way into Sonoita Creek.

In the past, from hydrological talks, I've been to, Harshaw only contributed 15% to Sonoita Creek, and now it'll be 100%. And when you transport these heavy minerals, it doesn't happen overnight. It takes time and accumulates.

So you might not have an effect this year, next year, or maybe it'll be five years, but all of a sudden, in the town of Patagonia, you can have a heavy metal problem in its water source. And we don't have a treatment plant, we can't afford one. And who's going to be responsible? ADEQ, they wash their hands as soon as the water came out, and they no longer care. Not that they don't care, but they can't do anything about it, that's the state of law. So something needs to change, because what they're doing is they're causing the problem that could occur. Thank you.

ADEQ's Response:

ADEQ is not familiar with the "Mr. Perzier" referenced in this comment. Mr. Perzier is not the head of ADEQ and does not represent ADEQ. Karen Peters is the Cabinet Executive Officer (CEO) & Executive Deputy Director (EDD) of ADEQ. Please note that CEO Peters has recused herself from the permitting process for South32. Amanda Stone, Deputy Director of ADEQ, is overseeing this permitting decision.

ADEQ is committed to protecting human health and the environment. See ADEQ's responses to comments 19, 20, and 21. ADEQ is required to issue an individual AZPDES permit to a facility that meets all legal requirements, see ADEQ's response to comment 30.

Comment 99
Sharon Calvert
Written Comment

Comment 99:

I have lived in Patagonia since 1995 and have worked as a Psychologist in Santa Cruz County for most of that time. In 1998 I purchased the one-acre property on which I reside, and which is located 500 yards from the Audubon Center on the Patagonia-Sonoita Creek. My home is next to the Montessori School on the NW side of the Creek, with no access to Town water and completely dependent on well water. When I moved here the Creek ran ABOVE-GROUND through Patagonia on a year-round basis. Today, the creekbed is COMPLETELY DRY, and flows only during the heaviest monsoon rains (which occurred exactly ONCE during 2023). I am horrified by South 32's plans to extract billions of gallons of water from our aquifer and emit toxins into the local groundwater. I fear that my land will become a worthless tract of toxic desert dust by the time my family inherits it. My concerns are best expressed by the Patagonia Area Resource Alliance, in the PDF document attached. Thank you for your attention.

ADEQ's Response:

The AZPDES program does not have the authority to regulate discharges to groundwater. See ADEQ's response to comment 26.

Comment 100
Keith Moheban and Julie Ruddy
Written Comment

Comment 100:

I object to the proposed permit and request that AZPDES not approve it. My concerns are as follows:

- 1. I have visited the Patagonia area on a number of occasions. It is a unique and largely untouched desert landscape of immense beauty. It is unique in having a regular source of water in the beautiful Sonoita Creek, as well as numerous seeps and springs that support diverse and beautiful vegetation and wildlife. This water also creates the very popular (and rare for Arizona) Patagonia Lake and its state park.*
- 2. The proposed dewatering involved with the proposed mine threatens the underground source of Sonoita Creek and Patagonia Lake. It could result in the drying up of the creek and the lake. Why would Arizona allow an activity that would potentially eliminate these valuable natural resources? It should not allow dewatering.*

3. If you do allow dewatering then you have to determine what to do with the immense volumes of now-contaminated water resulting from the dewatering. This is another reason to not allow dewatering in the first place. But the proposal to simply release millions of gallons of water a day into existing arroyos or washouts that are known to be contaminated from prior mining activity makes no sense.

4. The washout water will end up in Sonoita Creek and ultimately Patagonia Lake. Thus, if you do not destroy the creek and lake by dewatering, you will destroy it through contamination.

In a state where water is such a precious resource, approving this proposed permit is contrary to the interests of Arizonans (and tourists to Arizona like me) while benefiting primarily only a foreign mining company that has no long-term connection to this region.

ADEQ's Response:

The AZPDES program does not have authority to regulate discharges to groundwater nor the pumping of groundwater. See ADEQ's response to comment 26. ADEQ is committed to protecting human health and the environment. See ADEQ's responses to comments 19, 20, and 21. ADEQ is required to issue an individual AZPDES permit to a facility that meets all legal requirements, see ADEQ's response to comment 30. The program does not have the authority to consider where a company is from as part of the permit decision.

Comment 101
Jeffrey Kenney
Written Comment

Comment 101:

It saddens me to be witness to the potential environmental catastrophe looming over this unique, beautiful and rich environment of Patagonia. What will become of the abundant bird life, the unique animals, and the lush plant life? What will become of all of these life forms and the people of this town if you allow the water to become contaminated? You have assumed the responsibility to protect all of this. Please make the effort to do the right thing. Without question, you must use all of your attention, energy and powers to protect the precious waters of Patagonia.

ADEQ's Response:

ADEQ is committed to protecting human health and the environment. See ADEQ's responses to comments 19, 20, and 21. ADEQ is required to issue an individual AZPDES permit to a facility that meets all legal requirements, see ADEQ's response to comment 30.

Comment 102-103
Beth Pirl
Written and Oral Comments

Comment 102:

ADEQ has ample information showing that Outfall 002 is constructed in Upper Harshaw creek, NOT lower. Upper Harshaw is listed as impaired under the clean water act 303(d) list. Accordingly ADEQ must revise its TMDL before renewing the permit. Additionally ADEQ must acknowledge the impairments in LOWER Harshaw and prepare a TMDL for lower Harshaw creek before issuing the AZPDES permit. ADEQ also must recognize and acknowledge the true extent of the discharge in Harshaw and revise the permit accordingly.

Regarding Alum Gulch, The [sic] outdated TMDL must be updated and a new study conducted to investigate the new LEAD Impairment in ALUM Gulch before ADEQ considers issuing a renewed permit.

Sonoita creek: ADEQ must complete a TMDL for zinc impairment prior to renewing the permit. In addition, a waste load allocation for the discharges must be performed so that said discharges will not further contaminate or degrade downstream surface waters.

Finally, ADEQ must determine to classify the Hermosa project facilities to be legal "New Sources" of discharge. It must also be acknowledged that the mine is expected to go into production during the life of the permit. As a new source, the mine must be subject to all modern performance standards and requirements of the clean water act.

To protect public health and guard the safety of drinking water, ADEQ must revise the permit to require monitoring for manganese and sulfate in residential areas of the county. It also must revise the draft permit to require monthly monitoring for detrimental contaminants in both the discharge and the drinking water of residents in Santa Cruz county.

It is my sincere hope that the ADEQ will do all it can to protect residents' health and well-being as well as the ecosystem of the region as it prepares permitting for this mining activity.

ADEQ's Response:

For information about "new source", see ADEQ's response to comment 1. For information about TMDLs, see ADEQ's responses to comments 2, 4, and 7. For information about the location of Outfall 002, see ADEQ's response to comment 3. ADEQ acknowledges the ongoing discharge to Harshaw Creek, see ADEQ's response to comment 5. For information about manganese and sulfate, see ADEQ's response to comment 8.

Comment 103:

Good evening my name is Beth Pirl I am the chief education advisor for the Calabasas Alliance as well as the board members. Along with many others I urge the denial of the renewal of the Arizona Pollution Discharge Elimination Permit for the Hermosa project. The permit would allow for dangerous discharges of mine water into Harshaw Creek, Alum Gulch and Sonoita Creek. The danger to the health of the residents and damage to the environment are of primary concern. This permit renewal violates the Federal Clean Water Act and the basic human right that we all have to clean air and water. The renewal of this permit is also in direct opposition to ADEQ's own statutory duties to protect the environment and the prevention and abatement of water and air pollution.

The permit must not be renewed until TMDL studies are updated to reflect current and proposed activity. These TMDL obligations that ADEQ has under the Clean Water Act must not be trivialized. Given that both Upper Harshaw and Alum Gulch are impaired waterways the Clean Water Act requires an updated TMDL for both the six and a half million gallon daily discharge into Upper Harshaw Creek and the 172,000 daily gallon daily discharge into Alum Gulch. The potential for downstream contamination and degradation of surface water is enormous and every effort must be made to protect human health and environmental health and surface water downstream. Furthermore, given the documented danger manganese exposure poses to public health it's imperative that ADEQ revise the permit draft to require monitoring for Manganese and sulfate to protect the health of the communities and the drinking water. In addition to this, the required monitoring for other contaminants including arsenic, cyanide, lead, cadmium, mercury and others must be done at the very least on a monthly basis to protect the health

and well-being of the residents of Santa Cruz County. I respectfully request you do all in your power to protect the quality of our water, waterways, natural environment and the public health of Santa Cruz County by denying the renewal of this discharge permit in its present form.

Uphold your statutory duty to promote the protection and enhancement of the quality of water resources and ensure the preservation and enhancement of the natural beauty in our state. Thank you.

ADEQ's Response:

For information about TMDLs, see ADEQ's responses to comments 2, 4, and 7. For information about the location of Outfall 002, see ADEQ's response to comment 3. ADEQ acknowledges the ongoing discharge to Harshaw Creek, see ADEQ's response to comment 5. For information about manganese and sulfate, see ADEQ's response to comment 8. For information about monitoring frequencies, see ADEQ's response to comments 9 and 11.

ADEQ is committed to protecting human health and the environment. See ADEQ's responses to comments 19, 20, and 21.

Comment 104

Mark Coryell

Written Comment

Comment 104:

I very, very strongly urge you to DENY THIS PERMIT. During a critical drought it is immoral and irresponsible to remove groundwater to satisfy a greedy corporate mining interest. We need to protect Arizona's groundwater for not only our residents but also the natural environment that supports life itself.

ADEQ's Response:

The AZPDES program does not have authority to regulate groundwater pumping. See ADEQ's response to comment 19. ADEQ is committed to protecting human health and the environment. See ADEQ's responses to comments 20 and 21. ADEQ is required to issue an individual AZPDES permit to a facility that meets all legal requirements, see ADEQ's response to comment 30.

Comment 105

Michael Marek

Written Comment

Comment 105:

Let's be smart and protect our state for future generations. You only get one bite of the apple on this one. Choose wisely.

ADEQ's Response:

ADEQ is committed to protecting human health and the environment. See ADEQ's responses to comments 19, 20, and 21. ADEQ is required to issue an individual AZPDES permit to a facility that meets all legal requirements, see ADEQ's response to comment 30.

Comment 106

Chris Mason

Written Comment

Comment 106:

I disagree strongly with the plan to allow South32 to develop a new underground mine known as the Hermosa project. The area first has to be pumped dry. This would lower groundwater levels around the mine by an estimated 1,900 feet and potentially harm hundreds of springs fed by that water.

If granted, groundwater pumping will begin and that water would be squandered. 6 million gallons per day would be dumped into Harshaw Creek and 172,000 gallons per day into Alum Creek. The consistent addition of such huge volumes of water would bury springs and irrevocably change the landscape. This groundwater pumping could also cause flooding in the town of Patagonia threatening homes and businesses.

Shortsighted, greed based projects that create lasting harm to the environment are something I think we should avoid at all costs.

ADEQ's Response:

The AZPDES program does not have authority to regulate groundwater pumping. See ADEQ's response to comment 19. ADEQ is committed to protecting human health and the environment. See ADEQ's responses to comments, 20, and 21. ADEQ is required to issue an individual AZPDES permit to a facility that meets all legal requirements, see ADEQ's response to comment 30.

Comment 107

Olivia Fehlberg

Written Comment

Comment 107:

South32 is actively pursuing the development of the Hermosa project, an ambitious underground mine. However, the commencement of operations hinges on the initial step of pumping the area dry, a move that could have severe consequences. The estimated 1,900-foot drop in groundwater levels surrounding the mine poses a significant threat to hundreds of springs nourished by that water.

Should approval be granted, the proposed groundwater pumping raises alarming concerns about the reckless use of water resources. A staggering 6 million gallons per day would be discharged into Harshaw Creek, with an additional 172,000 gallons per day directed into Alum Creek. This consistent influx of colossal water volumes not only jeopardizes numerous springs but also irreversibly alters the landscape. The potential repercussions extend beyond ecological concerns, as the groundwater pumping poses a risk of flooding in the town of Patagonia, endangering homes and businesses.

The picturesque Patagonia mountains near the Arizona-Mexico border are now confronted with an impending wave of mining activities that threatens to inflict profound and irreversible damage upon one of our nation's vital biodiversity hotspots.

This surge in mining initiatives is primarily instigated by foreign mining companies seeking to capitalize on potential riches without regard for the local residents and their sustainable way of life. The region, known for its reliance on recreational activities and the water-rich mountain ecosystem sustaining remarkable biodiversity, faces a perilous transformation due to these indiscriminate mining pursuits.

ADEQ's Response:

The AZPDES program does not have the authority to regulate groundwater pumping. See ADEQ's response to comment 19. ADEQ is committed to protecting human health and the environment. See ADEQ's responses to comments 20 and 21. The program does not have the authority to consider economic impact or where a company is from as part of a permitting decision, see ADEQ's response to comment 30.

Comment 108
Diane Nowak
Written Comment

Comment 108:

I urge you to oppose proposed AZPDES Permit No. AZ0026387. Our ground water is extremely precious here in AZ. This particular project requires that the well/aquifer be emptied to do this project. THIS IS INSANITY! Given our scare resources (esp water), this permit MUST BE OPPOSED.

ADEQ's Response:

The AZPDES program does not have authority to regulate groundwater pumping. See ADEQ's response to comment 19. ADEQ is required to issue an individual AZPDES permit to a facility that meets all legal requirements, see ADEQ's response to comment 30.

Comment 109
Andrea Ruygrok
Written Comment

Comment 109:

I am very concerned about water tables and nature habitats. Doesn't make sense to allow foreign companies to do this in our backyard.

ADEQ's Response:

ADEQ is committed to protecting human health and the environment. See ADEQ's responses to comments 19, 20, and 21. The AZPDES program does not have the authority to consider where a company is from as part of a permitting decision, see ADEQ's response to comment 30.

Comment 110
James Notestine
Written Comment

Comment 110:

I object to Arizona Department of Environmental Quality's (ADEQ) plan to renew the Arizona Pollutant Discharge Elimination Permit (AZPDES) No. AZ0026387 for South32's Hermosa Project mine. I lived in this area and know it and the history of mining there and the probable damage to Patagonia's water supply. This area should have been included in the Nogales AMA but was excluded for political reasons years ago. The proposed Permit would allow for dangerous discharges of mine water to Harshaw Creek, Alum Gulch, and Sonoita Creek, threatening the health of local residents and the environment in violation of the Federal Clean Water Act and Arizona's laws relating to surface water quality. The issuance of the Permit is also contrary to ADEQ's own rules which require that ADEQ "act to protect the environment", promote "the protection and enhancement of the quality of water resources", provide for the "prevention and abatement of all water and air pollution"; and "[e]nsure the preservation and enhancement of natural beauty" in our state. You are not doing your job to enforce the discharge

provisions of the Clean Water Act to protect human health and the environment as required by law. You cannot issue the permit until ADEQ complies with Total Maximum Daily Load (TMDL) rules required by the Clean Water Act so that the contaminated waters of Harshaw Creek, Alum Gulch, and Sonoita Creek can finally be returned to good health. ADEQ's concerted efforts to avoid or trivialize its TMDL obligations in the Permit is astonishing. Please do not issue this permit and please keep me updated on all aspects of this permit process.

ADEQ's Response:

ADEQ is using all of the authorities of the Clean Water Act to protect human health and the environment. ADEQ is committed to protecting human health and the environment. See ADEQ's responses to comments 19, 20, and 21. For information regarding TMDLs, see ADEQ's responses to comments 2, 4, and 7. ADEQ is required to issue an individual AZPDES permit to a facility that meets all legal requirements, see ADEQ's response to comment 30.

Comment 111
David Wright
Written Comment

Comment 111:

When I read that ADEQ is considering granting permits for foreign mining companies to squander millions and millions of gallons of AZ groundwater I had to check the calendar. No it's not April 1 already, it's still January.

*You would actually allow these outsiders to waste our water and irreversibly alter the Patagonia landscape so *they* can try to get rich? It's 2024. Arizona is running out of water.*

Please do not allow this project to go forward.

ADEQ's Response:

The AZPDES program does not have authority to regulate groundwater pumping. See ADEQ's response to comment 19. The program does not have the authority to consider economic impact or where a company is from as part of a permitting decision, see ADEQ's response to comment 30.

Comment 112
Roger Baron
Written Comment

Comment 112:

I urge all new or continuing mining to cease in this fragile environment.

ADEQ's Response:

ADEQ acknowledges your opposition. ADEQ is required to issue an individual AZPDES permit to a facility that meets all legal requirements, see ADEQ's response to comment 30.

Comment 113
Mary Ellen Kazda

Written Comment

Comment 113:

I object to Arizona Department of Environmental Quality's (ADEQ) plan to renew the Arizona Pollutant Discharge Elimination Permit (AZPDES) No. AZ0026387 for South32's Hermosa Project mine.

I don't live in Patagonia however during my lifetime in Arizona I have spent a good bit of time there - birding, hiking, staying in locally owned establishments, sending money in restaurants, stores, etc. This very special part of our state would suffer irreparable damage and I fear for the little economic engines of Patagonia/ Sonoita, and Ambos Nogales.

Don't allow this (ADEQ) agency to be one that keeps chipping away at the Clean Water Act - our grand state has too much at risk, too much too lose.

The proposed Permit would allow for dangerous discharges of mine water to Harshaw Creek, Alum Gulch, and Sonoita Creek, threatening the health of local residents and the environment in violation of the Federal Clean Water Act and Arizona's laws relating to surface water quality. The issuance of the Permit is also contrary to ADEQ's own rules which require that ADEQ "act to protect the environment", promote "the protection and enhancement of the quality of water resources", provide for the "prevention and abatement of all water and air pollution"; and "[e]nsure the preservation and enhancement of natural beauty" in our state.

You cannot issue the permit until ADEQ complies with Total Maximum Daily Load (TMDL) rules required by the Clean Water Act so that the contaminated waters of Harshaw Creek, Alum Gulch, and Sonoita Creek can finally be returned to good health. ADEQ's concerted efforts to avoid or trivialize its TMDL obligations in the Permit is astonishing.

Please do not issue this permit and please keep me updated on all aspects of this permit process.

ADEQ's Response:

ADEQ is using all of the authorities of the Clean Water Act to protect human health and the environment. The AZPDES program does not have the authority to consider economic impact as part of a permitting decision, see ADEQ's response to comment 30. For information regarding TMDLs, see ADEQ's responses to comments 2, 4, and 7. ADEQ is required to issue an individual AZPDES permit to a facility that meets all legal requirements.

Comment 114

Peg Kazda

Written Comment

Comment 114:

i firmly oppose the azpdes permit # AZ0026387 for the january mine hermosa project. the extreme lowering of groundwater would wreak havoc on the the hundreds of springs that nourish the land and animals in the region and beyond. the depletion of the squandered groundwater is in itself tragic enough...furthering the damage to the environment, the release of millions of gallons into both alum and harshaw creek would forever destroy the land and springs that thrive in this area. please please please do the right thing! this is a tragedy in the making for this entire area which has nurtured so many for so long. destroying wild places and the natural order of things is profoundly sad and terribly wrong. you know this!

ADEQ's Response:

The AZPDES program does not have authority to regulate groundwater pumping. See ADEQ's response to comment 19. ADEQ is committed to protecting human health and the environment. See ADEQ's responses to comments 20 and 21.

Comment 115
Greg Kesselring
Written Comment

Comment 115:

South32 seeks to develop a new underground mine known as the Hermosa project. But to operate, the area first has to be pumped dry. This would lower groundwater levels around the mine by an estimated 1,900 feet and harm HUNDREDS of springs fed by that water.

If granted, groundwater pumping will begin and that water would be squandered. 6 million gallons per day would be dumped into Harshaw Creek and 172,000 gallons per day into Alum Creek. The consistent addition of such huge volumes of water would bury springs and irrevocably change the landscape. This groundwater pumping could also cause flooding in the town of Patagonia threatening homes and businesses.

Local residents and businesses should be given priority over a global mining company. Residents and owners of local businesses live here and raise their families here. The local residents and business owners should be able to vote on whether or not to allow the mine. Local governments should have a say as well. That is true democracy. Please consider what the people of this area need. Do not give in to a global mining company that will wreck the local landscape to get what they're after and then disappear, leaving behind destroyed habitat at best, a toxic waste dump at worst.

Thank you for considering what is best for local residents and for all Arizonans

ADEQ's Response:

The AZPDES program does not have authority to regulate groundwater pumping. See ADEQ's response to comment 19. ADEQ is committed to protecting human health and the environment. See ADEQ's responses to comments 20 and 21.

ADEQ values public input in permitting decisions, but the AZPDES program does not have the authority to consider economic impact or where a company is from as part of a permitting decision, see ADEQ's response to comment 30. ADEQ is required to issue an individual AZPDES permit to a facility that meets all legal requirements.

Comment 116
Barbara Meshanko
Written Comment

Comment 116:

PLEASE, PLEASE, PLEASE!!!! DO NOT DESTROY THE BEAUTY AND ENVIORNMENT OF OUR BEAUTIFUL SANTA RITA MOUNTAINS!!! THIS MINING INITIATIVE IS NOTHING BUT A MONEY GRAB AND WILL DO SO MUCH DAMAGE TO OUR WONDERFUL WILDLIFE. HAVE YOU NO HEART AT ALL????!!!

ADEQ's Response:

ADEQ is committed to protecting human health and the environment. See ADEQ's responses to comments 19, 20, and 21. The AZPDES program does not have the authority to consider economic impact as part of a permitting decision, see ADEQ's response to comment 30. ADEQ is required to issue an individual AZPDES permit to a facility that meets all legal requirements.

Comment 117**Mary Doll****Written Comment****Comment 117:**

As a concerned citizen I am profoundly concerned about the water supply for Tucson and SW Arizona. My daughter is already looking for a place to move to when she retires, believing that the water supply will continue to be a serious problem here, one she wants to avoid.

The mining operation would begin with groundwater pumping, an outrageous waste of water, and destructive to the landscape. I cannot believe the blindness of those who make the decisions, and beg you to rethink this decision.

ADEQ's Response:

The AZPDES program does not have authority to regulate groundwater pumping. See ADEQ's response to comment 19. ADEQ is required to issue an individual AZPDES permit to a facility that meets all legal requirements, see ADEQ's response to comment 30.

Comment 118**Annemarie Avanti****Written Comment****Comment 118:**

I object to Arizona Department of Environmental Quality's (ADEQ) plan to renew the Arizona Pollutant Discharge Elimination Permit (AZPDES) No. AZ0026387 for South32's Hermosa Project mine. The proposed Permit would allow for dangerous discharges of mine water to Harshaw Creek, Alum Gulch, and Sonoita Creek, threatening the health of local residents and the environment in violation of the Federal Clean Water Act and Arizona's laws relating to surface water quality. The issuance of the Permit is also contrary to ADEQ's own rules which require that ADEQ "act to protect the environment", promote "the protection and enhancement of the quality of water resources", provide for the "prevention and abatement of all water and air pollution"; and "ensure the preservation and enhancement of natural beauty" in our state. It is imperative that you enforce the discharge provisions of the Clean Water Act to protect human health and the environment as required by law. By issuing this permit as written, you are not adequately either protecting AZ residents nor the environment. ADEQ's concerted efforts to avoid or trivialize its TMDL obligations in the Permit is astonishing. Please protect our residents, our environment and our wildlife. Do not issue this permit. Thank you in advance for making the right decision for Arizona and denying this permit. Please keep me updated on all aspects of this permit process.

ADEQ's Response:

ADEQ is using all of the authorities of the Clean Water Act to protect human health and the environment. See ADEQ's responses to comments 19, 20, and 21. For information regarding TMDLs, see ADEQ's responses to comments 2, 4, and 7. The AZPDES program does not have the

authority to consider economic impact as part of a permitting decision, see ADEQ's response to comment 30. ADEQ is required to issue an individual AZPDES permit to a facility that meets all legal requirements.

Comment 119
Marigold Love
Written Comment

Comment 119:

Why are we still giving away our beautiful wild areas to foreign countries who have no interest in protecting or preserving our wild places that are the underpinnings for our water availability with springs and streams that are needed by our diverse wildlife? Once destroyed these areas can never be replaced or restored. This area brings in money to the state through outdoor activities and birders that exceeds the amount the state will ever see from the mine. Until mining laws exist to protect our own people and our own country, we must stand up against this kind of invasion of our wildlife land, bird sanctuaries and recreational space. Please deny the AZDES Permit No.AZ0026387 for January Mine Hermosa Project.

ADEQ's Response:

The AZPDES program does not have the authority to consider economic impact as part of a permitting decision, see ADEQ's response to comment 30. ADEQ is committed to protecting human health and the environment. See ADEQ's responses to comments 19, 20, and 21. ADEQ is required to issue an individual AZPDES permit to a facility that meets all legal requirements.

Comment 120
Noel Fray
Written Comment

Comment 120:

I understand that South32 seeks to develop a new underground mine known as the Hermosa project. If groundwater pumping is permitted 6 million gallons per day would be dumped into Harshaw Creek and 172,000 gallons per day into Alum Creek. The consistent addition of such huge volumes of water would bury springs and irrevocably change the landscape. This groundwater pumping could also cause flooding in the town of Patagonia threatening homes and businesses. Please do not allow this permit to be approved.

ADEQ's Response:

The AZPDES program does not have authority to regulate groundwater pumping. See ADEQ's response to comment 19. ADEQ is required to issue an individual AZPDES permit to a facility that meets all legal requirements, see ADEQ's response to comment 30.

Comment 121
Ray Cage
Written Comment

Comment 121:

NO MINE!! CLEAN UP ALL THE AZ MINE TAILINGS LYING AROUND AND BLOWING ON THE WINDS, NO MINE!!

ADEQ's Response:

ADEQ acknowledges your opposition. For information on ADEQ's remediation of legacy mine sites, please see <https://azdeq.gov/node/7368>.

Comment 122
Randell Herren
Written Comment

Comment 122:

This is ludicrous! What a travesty that the State of Arizona continues to allow foreign interests to damage the riparian system in any area of proposed mining interests. Please revoke any license that indicates disregard for the natural environment of the State of Arizona. Please stop the preliminary exercises toward the Hermosa Project and the destruction of the Patagonia Mountain area. Thank you.

ADEQ's Response:

ADEQ is committed to protecting human health and the environment. See ADEQ's responses to comments 19, 20, and 21. ADEQ is required to issue an individual AZPDES permit to a facility that meets all legal requirements, see ADEQ's response to comment 30.

Comment 123
Paul Kovar
Written Comment

Comment 123:

Do Not allow the pumping of groundwater for this mine

ADEQ's Response:

The AZPDES program does not have authority to regulate groundwater pumping. See ADEQ's response to comment 19. ADEQ is required to issue an individual AZPDES permit to a facility that meets all legal requirements, see ADEQ's response to comment 30.

Comment 124
Valerie Neale
Written Comment

Comment 124:

ADEQ's proposed permit renewal is flawed in so many ways. ADEQ claims that the permit is for an already existing mine and that as a result, there is no need for a "new source" analysis which would bring the mine under the requirements of the Clean Water Act. This is an outrageous assertion. This intended operation is completely different from the old ASARCO mine that was previously at this location. The Clean [sic] Water Act requires waste load allocations and TMDLs to allow for impaired surface waters to be returned to good health. Why is ADEQ, whose job is to promote the "protection and enhancement of all the quality of water resources" not doing its job, but rather trying to find every untenable interpretation to wriggle out of its responsibilities? Why is it doing its utmost to aid the mining company, who is most definitely NOT its "Customer" rather than doing its duty to the people of Arizona? Why is it proposing the renewal of this permit without adequate safeguards, REQUIRED BY LAW, and frequent monitoring, with the inevitable result that our drinking water sources will end up with undetected contamination. I am incorporating Patagonia Area Resource Alliance's comments as part of my comments, because these comments outline in a much clearer way than I can the dangers and risks and violations of law involved with the renewal of this permit.

ADEQ's Response:

For information on "new source," see ADEQ's response to comment 1. ADEQ is committed to protecting human health and the environment. See ADEQ's responses to comments 19, 20, and 21. For information regarding TMDLs, see ADEQ's responses to comments 2, 4, and 7. ADEQ is required to issue an individual AZPDES permit to a facility that meets all legal requirements, see ADEQ's response to comment 30.

Comment 125
Dennis Martinez
Written Comment

Comment 125:

Stop mining on Proposed AZPDES Permit No. AZ0026387 for January Mine Hermosa Project

ADEQ's Response:

ADEQ acknowledges your opposition. ADEQ is required to issue an individual AZPDES permit to a facility that meets all legal requirements, see ADEQ's response to comment 30.

Comment 126
Renée Neumann
Written Comment

Comment 126:

Protect the Patagonia area from South 32's Hermosa Project mine! Pumping and lowering groundwater levels by almost 2,000 feet--which the mine is designed to do--would inherently harm flora, fauna and humans in the watershed. And the pumped water could cause serious damage to homes and businesses in Patagonia. If you allow this project, you are violating your responsibility to all of the above. You must NOT allow this mine. If you do, the public will assume that someone or some people in ADEQ are taking bribes to allow this egregious project a permit. Because there is no other logical reason for your organization to allow this.

ADEQ's Response:

ADEQ is committed to protecting human health and the environment. See ADEQ's responses to comments 19, 20, and 21. The AZPDES program does not have authority to regulate groundwater pumping. ADEQ is required to issue an individual AZPDES permit to a facility that meets all legal requirements, see ADEQ's response to comment 30.

Comment 127
Nancy Bailey
Written Comment

Comment 127:

*Proposed AZPDES permit No AZ0026387 for January Mine Hermosa Project is not in the best interest of citizens of the world the only gains go to greedy uncaring people.
Arizona does not need another mine with its filthy wrack and dirty by products.
Lowering our water table for more greedy companies is not what citizens of Arizona want.
Please do not let this happen!*

ADEQ's Response:

ADEQ acknowledges your opposition. ADEQ is required to issue an individual AZPDES permit to a facility that meets all legal requirements, see ADEQ's response to comment 30. The AZPDES program does not have the authority to regulate groundwater pumping.

Comment 128
Jessica Guider
Written Comment

Comment 128:

I believe we need to protect our land for the enjoyment of the people who live there and recreation. Mining will destroy the habits, land and wildlife. Thank you.

ADEQ's Response:

ADEQ is committed to protecting human health and the environment. See ADEQ's responses to comments 19, 20, and 21.

Comment 129
Kimberly Kling
Written Comment

Comment 129:

I am writing to express my profound concern and vehement opposition to the renewal of Proposed AZPDES Permit No. AZ0026387 for the January Mine Hermosa Project. As a concerned citizen who values environmental sustainability and community well-being, I believe that approving this permit renewal would have detrimental consequences for our local ecosystem and the residents who call this area home.

The January Mine Hermosa Project poses an imminent threat to the delicate balance of our environment, jeopardizing the quality of air, water, and soil in the surrounding region. The potential discharge of harmful pollutants into nearby water bodies could have irreversible consequences for aquatic life, disrupting ecosystems and endangering the health of both wildlife and humans alike. This is at a significant cost to local residents with little to no benefit, being that this is an Australian company that will take their proceeds out of the country.

Moreover, the cumulative impact of mining activities on air quality is a significant concern. Increased levels of particulate matter and other pollutants from mining operations could contribute to respiratory issues and other health problems for individuals residing in close proximity to the project site. It is our moral obligation to prioritize the well-being of our community members over the economic gains associated with the mining industry.

Additionally, the long-term consequences of mining, such as habitat destruction and landscape alteration, cannot be overlooked. The proposed project threatens our unique biodiversity, putting numerous plant and animal species at risk of displacement or extinction. The irreversible damage to the natural landscape is not only an environmental tragedy but also a loss for future generations who deserve the opportunity to experience and appreciate the beauty of the high desert ecosystems.

Furthermore, it is extremely essential to consider the potential for water resource depletion and contamination. The mining process often requires substantial water usage, leading to strain on local

water supplies. This, coupled with the risk of pollutants leaching into groundwater, raises serious concerns about the sustainability of our water resources and the potential long-term impacts on the health of our communities in an area already fraught with water depletion.

In conclusion, I urge you to prioritize the health of our environment and the well-being of our community members by rejecting the renewal of Proposed AZPDES Permit No. AZ0026387 for the January Mine Hermosa Project. We must invest in sustainable and environmentally responsible practices that ensure the longevity and prosperity of our region. Our natural resources are finite, and it is our collective responsibility to protect them for the benefit of current and future generations.

Thank you for your attention to this critical matter.

ADEQ's Response:

The AZPDES program does not have authority to regulate air quality or discharges to groundwater. ADEQ is committed to protecting human health and the environment. See ADEQ's responses to comments 19, 20, and 21. ADEQ is required to issue an individual AZPDES permit to a facility that meets all legal requirements, see ADEQ's response to comment 30.

Comment 130

Faulene Main

Written Comment

Comment 130:

Please PROHIBIT this flagrant waste of a precious water source for springs down stream of this mine activity.

ADEQ's Response:

ADEQ acknowledges your opposition. ADEQ is required to issue an individual AZPDES permit to a facility that meets all legal requirements, see ADEQ's response to comment 30. The AZPDES program does not have the authority to regulate groundwater pumping.

Comment 131

Elizabeth Hunter

Written Comment

Comment 131:

Please don't allow the January Mine Hermosa Project to be developed as it would dangerously damage the ecosystem of Patagonia. This community deserves to be left intact and preserved as well as the wildlife that use this area as its natural corridor. Please!!!!

ADEQ's Response:

ADEQ acknowledges your opposition. ADEQ is required to issue an individual AZPDES permit to a facility that meets all legal requirements, see ADEQ's response to comment 30.

Comment 132

Carol Dickman

Written Comment

Comment 132:

This is outrageously destructive to our environment and community done by a foreign interest with no regard for AZ interests. The permit NEEDS TO BE DENIED! This is a desert in drought with no support for the water waste of this mining assault. NO NO NO.

ADEQ's Response:

ADEQ acknowledges your opposition. ADEQ is required to issue an individual AZPDES permit to a facility that meets all legal requirements, see ADEQ's response to comment 30. The AZPDES program does not have the authority to regulate groundwater pumping.

Comment 133
Robert Ollerton
Written Comment

Comment 133:

I believe the proposed permit should be approved.

ADEQ's Response:

ADEQ acknowledges your support of the permit.

Comment 134
Beth Jonquil
Written Comment

Comment 134:

The Hermosa project would permanently damage the Patagonia mountains. It would permanently and irreparably damage the Harshaw and Alum Creeks. This area is one of our nation's most treasured biodiverse hotspots. Pumping the area dry to develop this new mine would lower groundwater levels and harm hundreds of springs fed by that water. The water would bury springs and irrevocably change the landscape, which would affect the wildlife in the area as well. It could cause flooding in the town of Patagonia, which would threaten their homes and businesses. This area is worth far more than money to all people, particularly those who live there and care about the preservation of the area's ecosystem. Thank you for your serious consideration about the most unwelcome proposal of South32. Foreign investors should not be able to force this unsustainable plan on Arizona/Patagonia.

ADEQ's Response:

The AZPDES program does not have authority to regulate groundwater pumping. See ADEQ's response to comment 19. ADEQ is committed to protecting human health and the environment. See ADEQ's responses to comments 20 and 21. The AZPDES program does not have the authority to consider economic impact as part of a permitting decision, see ADEQ's response to comment 30.

Comment 135
Peg Davis
Written Comment

Comment 135:

I am very concerned about this project dropping water levels in the Patagonia area. This would be very destructive.

ADEQ's Response:

The AZPDES program does not have authority to regulate groundwater pumping. See ADEQ's response to comment 19.

Comment 136
Nancy Valentine
Written Comment

Comment 136:

Do not approve any requests from mining operations in the Santa Cruz River watershed. Mining operations being proposed will negatively impact water and air quality for the communities within the Santa Cruz River watershed. Sonoita Creek, a tributary of the Santa Cruz River, will be compromising water quality and riparian habitat along the river's course from Rio Rico through Tumacacori, Carmen, Tubac, Amado, Green Valley and Tucson as the river runs north through these communities. The amount of water required for mining operations proposed by South32 compromises the future availability and quality of water resources for both agricultural and existing and future populations. While current mining laws support this use of what has overtime become a limited resource, utilizing water resources for mining is short-sited and irresponsible in the context of sustaining existing communities, endangered species within the watershed, and resources contributing to future economic development. This region from the confluence of the Sonoita Creek and the Santa Cruz River is contributory to the heritage assets that constitute the Santa Cruz Valley National Heritage Area, the Juan Bautista National Historic Trail, the Tumacacori National Historic Park, the Tubac National Historic District. These heritage assets would be negatively impacted by the compromised quantity and quality of the Santa Cruz River watershed contributing to economic losses to communities dependent on these heritage assets as eco and cultural heritage destinations. New methods to power electric vehicles aside from dependence of magnesium will be developed in the near future. It is irresponsible to approve a short-term commercial demand if long term it destroys an environment, quality of life and heritage assets that have proven economically contributory long term and for the future. Do not approve any requests from mining operations in the Santa Cruz River watershed.

ADEQ's Response:

The permit contains effluent limitations and monitoring requirements to ensure all discharges are protective of the communities within the Santa Cruz River watershed. ADEQ's surface water quality standards and designated uses must be set to be protective of downstream waters per A.A.C. R18-11-104(F). ADEQ sets AZPDES permit limits based on applicable surface water quality standards, which ensures protection of both the receiving water and downstream waters. By setting appropriate surface water quality standards and permit limits, ADEQ protects the health of the receiving water and downstream waters. When ADEQ set the designated uses and standards for Alum Gulch and Harshaw Creek, ADEQ ensured the designated uses were protective of downstream waters, including Sonoita Creek and the Santa Cruz River. Therefore, the permit limits are protective of not only Alum Gulch and Harshaw Creek, but also Sonoita Creek and the Santa Cruz River.

The AZPDES program does not have the authority to regulate groundwater pumping. See ADEQ's response to comment 19. The program does not have the authority to consider economic impact as part of a permitting decision, see ADEQ's response to comment 30.

The AZPDES program does not regulate air quality. For information about South32's air quality permit, see ADEQ's response to comment 279.

Comment 137
Kim Hoover
Written Comment

Comment 137:

Please do not allow this permit for a mining corporation to pump and dump our precious ground water. You must consider the current climate crisis. We cannot lose all this water. You would kill animals, trees, flowers, life. You would create a toxic dust bowl. Please do not do this permanent damage. There are alternatives, there are always choices. Chose [sic] wisely.

ADEQ's Response:

The AZPDES program does not have the authority to regulate groundwater pumping. See ADEQ's response to comment 19. ADEQ is committed to protecting human health and the environment. See ADEQ's responses to comments 20 and 21. ADEQ is required to issue an individual AZPDES permit to a facility that meets all legal requirements, see ADEQ's response to comment 30.

Comment 138
Michael Stabile
Written Comment

Comment 138:

This discharge should not be allowed to take place. At this point, Harshaw Creek only contributes about 15 % of the total discharge of Sonoita Creek. Harshaw Creek is a natural system, by allowing S32 to discharge over 6000 gallons/minute, you are turning it into a man-made river. Harshaw Creek picks up a certain amount of heavy metals due to the natural mineralization found in the area. Once you dramatically increase the flow rate who will know what will happen? ADEQ is only responsible for the quality of the water coming out of the treatment plant. It is a big "too bad" for everyone downstream, especially for the Town of Patagonia. We do not have to treat our water except with chlorine, we do not have a water treatment plant for our drinking water. Climate change is man-made, the situation that will occur will be man-made. The issue here is that no one will take the blame if the worst case scenario happens. ADEQ and S32 are off the hook because the water is clean at the starting point. Enough is enough, we do not know enough to allow this discharge. Please do not give them the permit.

ADEQ's Response:

ADEQ is committed to protecting human health and the environment. See ADEQ's responses to comments 19, 20, and 21. ADEQ is required to issue an individual AZPDES permit to a facility that meets all legal requirements, see ADEQ's response to comment 30.

Comment 139
Bruce Pershke
Written Comment

Comment 139:

We must conserve water. There isn't enough water to justify this mining project.

ADEQ's Response:

ADEQ acknowledges your opposition. ADEQ is required to issue an individual AZPDES permit to a facility that meets all legal requirements, see ADEQ's response to comment 30. The AZPDES program does not have the authority to regulate water conservation.

Comment 140
Jeffrey Chimene
Written Comment

Comment 140:

****ADEQ fails to acknowledge the following items:****

- * That it cannot issue the proposed AZPDES to South32 without first updating its 20-year-old TMDL for Harshaw and performing a waste load allocation of South32's massive new discharge in order to bring Harshaw Creek's water quality into compliance.*
- * The impairments in Lower Harshaw Creek and the need to prepare a TMDL for Lower Harshaw before it can issue the proposed AZPDES permit.*
- * The true extent of the ongoing discharge to Harshaw and the need to revise the Permit accordingly to include this discharge data in calculating permit limits.*
- * That the outdated TMDL must be updated and a new TMDL study must be completed on the new lead impairment in Alum Gulch.*
- * That ADEQ's workaround proposal to only allow discharge from "historic tailings" into Alum Gulch is absurd and ignores documented facts about how South32 has operated the mine site for years.*
- * That ADEQ must complete a TMDL for the zinc impairment in Sonoita Creek and perform a waste load allocation for the discharges to Sonoita Creek.*
- * That the Hermosa Project is a brand-new mine and that the new facilities should be considered legal "new sources" of discharge.*
- * That the Permit should be revised to acknowledge that the mine is expected to go into production during the life of this Permit.*
- * That the Draft Permit should be revised to require monitoring for manganese and sulfate in order to protect human health and the drinking water systems and infrastructure of the Town of Patagonia and residents of the area.*
- * That the Draft Permit should be revised to require important monitoring to be done at least monthly.*

ADEQ's Response:

For information about "new source" and the mine going into production during the life of the permit, see ADEQ's response to comment 1. For information about TMDLs, see ADEQ's responses to comments 2, 4, and 7. For information about the location of Outfall 002, see ADEQ's response to comment 3. For information about manganese and sulfate, see ADEQ's response to comment 8. For information about monitoring frequencies, see ADEQ's response to comments 9 and 11.

Comment 141
David Dube
Written Comment

Comment 141:

Arizona is in an extended drought. One good year of rain/snow does nothing to reverse this trend toward a dryer, warmer climate. The Hermosa mining project will devastate the water table that feeds springs and people. This mine should be rejected. Thank you.

ADEQ's Response:

The AZPDES program does not have authority to regulate the water table. See ADEQ's response to comment 19. ADEQ is required to issue an individual AZPDES permit to a facility that meets all legal requirements, see ADEQ's response to comment 30.

Comment 142**Kerry Schwartz****Written Comment****Comment 142:**

I live at 378 Pennsylvania Avenue in Patagonia. I have a master's degree in Geology focused on geohydrology from the University of Arizona. In addition to the concerns laid out by PARA in the attached document, I am very concerned about the necessary dewatering of the Patagonia uplands. Though I commend South 32 on their innovation in accessing the ore body at depth rather than creating an open pit mine, I see that the underground stoping method will need to be made a dry environment for years on end to be feasible. The dewatering of these uplands will create irreparable damage to the ecosystems and animal and plant diversity and carrying capacity of the radial area surrounding the mine at least 4 miles out. I think there are other places where access to the ore body would not require this extreme level of destruction of the environment. I urge state and federal agencies to protect Arizonans and our amazing lands and biodiversity.

ADEQ's Response:

The AZPDES program does not have authority to regulate groundwater pumping for mine dewatering. See ADEQ's response to comment 19. ADEQ is required to issue an individual AZPDES permit to a facility that meets all legal requirements, see ADEQ's response to comment 30.

Comment 143**Melanie Morrison****Written Comment****Comment 143:**

I am the owner of Sanctuary at Sonoita Creek, a rental property/campground in Patagonia. In addition to the attached comments prepared by PARA, I am concerned about my investment here in the Town. My property is located approximately 300 feet from Sonoita Creek. As you likely know the entire town of Patagonia is located in the 100-year flood plain. Patagonia Town Code Chapter 13 states that: A. the flood hazard areas of the Town of Patagonia are subject to periodic inundation which may result in loss of life and property, health and safety hazards etc. And B. These flood losses may be caused by the cumulative effect of obstructions in special flood hazard areas which increase flood heights and velocities and when inadequately anchored, cause damage in other areas.

So this is the status quo in Patagonia. It seems self-evident that over 6 million gallons of water per day going into a tributary to Sonoita Creek that is upstream of the Town will most certainly increase the risk of flooding on my property. And I haven't even mentioned the potential effects of climate change on that

risk. Though I know that the regulation of water quantity is handled by the Arizona Department of Water Resources and other agencies, it does not seem right for ADEQ to allow a new industrial property owner to jeopardize an entire town's wellbeing. It is imperative for state and county agencies to work together for Arizonans.

ADEQ's Response:

The AZPDES program does not have the authority to limit the flow or volume of water discharged by a permittee. See ADEQ's response to comment 19. ADEQ is required to issue an individual AZPDES permit to a facility that meets all legal requirements, see ADEQ's response to comment 30.

Comment 144
Martin Jablonski
Written Comment

Comment 144:

I live about ten miles from the proposed Hermosa Mine being developed by Australian Mining Company South 32. I do not have the technical hydrological expertise to assess whether the pollutants that will be discharged by South 32 are reasonable or not, but I am extremely concerned about the volume of water to be discharged. Pumping such a large amount of water and then discharging that water into normally dry washes (Harshaw Creek and Alum Creek) will forever change the plant and animal life in the vicinity of these washes. This continual, potentially toxic, discharge will create ecosystems that should not be here. At the same time, the cone of depression created by this pumping will most certainly destroy the plant life that relies on groundwater - specifically Cottonwood and Sycamore trees - and the wildlife that depend on these trees. Further, this mine is not in some isolated, unpopulated area where a mining company can conduct their activities without impacting people. The water discharges and groundwater drawdowns will impact homeowners and ranchers that live here. Not to mention the potential impacts to the city of Patagonia water supply. It seems irresponsible for the AZDEQ to approve this permit knowing that doing so will adversely and permanently affect the plants and animals that have evolved to live in the existing environment and the people who have made this part of the state their home. I urge you to deny this permit modification and remember that "Environmental Quality" is the name of your organization.

ADEQ's Response:

The AZPDES program does not have authority to regulate groundwater pumping nor the authority to limit the flow or volume of water discharged by a permittee. See ADEQ's response to comment 19. ADEQ is required to issue an individual AZPDES permit to a facility that meets all legal requirements, see ADEQ's response to comment 30.

Comment 145
Jovita Fine
Written Comment

Comment 145:

This mine should never be allowed! Arizona is already in a potential water crisis and pumping millions of gallons of ground water from deep in the ground will increase the pollution in the streams, deplete the precious ground water supply and destroy the environment. Please , do not allow this mine to happen.

Arizona's wildlife and natural spaces are too valuable to ruin. Thank you, and I hope you will act wisely about this.

ADEQ's Response:

The AZPDES program does not have authority to regulate groundwater pumping. See ADEQ's response to comment 19. ADEQ is committed to protecting human health and the environment. See ADEQ's responses to comments 20 and 21. ADEQ is required to issue an individual AZPDES permit to a facility that meets all legal requirements, see ADEQ's response to comment 30.

Comment 146
Kathy Mohr-Almeida
Written Comment

Comment 146:

This mine would destroy precious ecosystems and consume water Arizona's communities can't afford.

ADEQ's Response:

ADEQ acknowledges your opposition. ADEQ is required to issue an individual AZPDES permit to a facility that meets all legal requirements, see ADEQ's response to comment 30. The AZPDES program does not have the authority to regulate groundwater pumping.

Comment 147
Marilyn Majalca
Written Comment

Comment 147:

Dear ADEQ, I have lived in Patagonia over 40 years. I'm extremely concerned about Hermosa mine's desire to remove huge quantities of water to allow their mining operations. That seems very risky for Patagonia and our water supplies. The Patagonia mountains, San Rafael Valley, and other surrounding areas could be devastatingly altered with so much water removal. I'm not convinced that placing the removed water in our washes will help in any way, and that seems risky for potential harm as well. People, animals and forest will be adversely impacted in my view. Please do not grant a permit for Proposed AZPDES Permit No. AZ0026387 for January Mine Hermosa Project.

ADEQ's Response:

The AZPDES program does not have authority to regulate groundwater pumping nor the flow or volume of water discharged by a permittee. See ADEQ's response to comment 19. ADEQ is required to issue an individual AZPDES permit to a facility that meets all legal requirements, see ADEQ's response to comment 30.

Comment 148
Gary Nabhan
Written Comment

Comment 148:

I am a Patagonia resident and PhD. environmental scientist submitting a personal and professional comment on the Permit Renewal for Australian mining company South32 to discharge pollutants into Harshaw Creek and Alum Gulch; this permit is known as an AZ Pollutant Discharge Elimination System permit (AZPDES). In addition to AZDPDES [sic] mandates to protect the quality of Arizona water for all

uses including personal consumption, the agency has a responsibility to consider SOUTH32's past record, both in the US and abroad. My attached comment that suggests [sic] that South32 leaves a trail of water problems in its wake, and fails to engineer for future climate variability, only for minimum compliance. I urge you to postpone or deny it this [sic] renewal on the basis [sic] of the following grievances.

ADEQ's Response:

The AZPDES program does not have the authority to consider where a company is from or past compliance as part of a permitting decision. ADEQ is required to issue an individual AZPDES permit to a facility that meets all legal requirements, see ADEQ's response to comment 30.

Comment 149

Mary Sky Schoolcraft and Nancy Coyne

Written Comment

Comment 149:

I want the ADEQ to do their job of protecting the land, water and air quality of Arizona from being contaminated by pollutants, heavy metals, noxious materials and toxic runoff...as mandated by law in ARS 49-204(A)(1),(7),(9) and (10)...Please do not approve the permits for South32 (No.AZ0026387) to discharge tremendous amounts of mine water extracted from the aquifer [sic] and released without updating the TMDL. This is a gigantic new mining operation, NOT a continuation of a small 1963 mine.Please look at the impact of releasing up to 6.48 million gallons of mine water per day (for an undisclosed time) into Harshaw Creek, and it's [sic] impact on Sonoita Creek (which runs through the town of Patagonia and empties in Patagonia Lake.) As you can obviously see, a discharge of contaminated acidic water polluted with heavy metals, could have a huge impact on the residents of the town, users of the lake, and all the plant and wildlife in this riparian area which is a jewel of biological diversity.

AZDEQ must do the TMDL analysis and set standards in order to comply with the Clean Water Act.The point of discharge is in Upper Harshaw Creek (listed as impaired), which obviously also impacts Lower Harshaw Creek.The AZDEQ must revise its grossly outdated TMDL for Upper Harshaw Creek, and acknowledge the impairments to Lower Harshaw Creek and prepare a TMDL for Lower Harshaw Creek BEFORE it can issue the proposed AZPDES permit.

The same is true for Alum Gulch, which is impaired with elevated levels of cadmium, copper, lead, zinc and acidic pH that can result in heavy metals contamination. So, a new TMDL is also required for Alum Gulch.The tailings pile also contains tons of new mine waste materials, and thus seepage is not only from the historic tailings. AZDEQ must do a current analysis and update the TMDL BEFORE issuing a renewed permit.

These creeks, with contaminated water, flow into Sonoita Creek, which is impaired with zinc. Thus AZDEQ must complete a TMDL for zinc for Sonoita Creek, and a waste load allocation for discharges into Sonoita Creek. This is required by the Clean Water Act so that South32's discharges will not further contaminated [sic] or degrade these downstream waters but can support the future restoration of water quality in the creek.

Furthermore, the permit must include frequent or continual monitoring for all contaminants [sic] including Manganese [sic] and sulfate, not the infrequent periodic review in the Draft Permit. This close monitoring is necessary to protect human health and the drinking water systems and infrastructure of the Town of Patagonia and residents of the area BEFORE issuing a renewed permit.

The people of Arizona place their trust in the AZDEQ to uphold the requirements of the Clean Water Act and ensure that we are not exposed or ingesting water contaminated with arsenic, cyanide, lead, cadmium, mercury, uranium, manganese or sulfur.

*We implore you to live up to the trust and do what is not only right but also legally mandated to protect human health and the quality of our environment.
Thank you for standing strong and doing your job.*

ADEQ's Response:

For information about "new source", see ADEQ's response to comment 1. For information about TMDLs, see ADEQ's responses to comments 2, 4, and 7. For information about manganese and sulfate, see ADEQ's response to comment 8. For information about monitoring frequencies, see ADEQ's response to comments 9 and 11. ADEQ is required to issue an individual AZPDES permit to a facility that meets all legal requirements, see ADEQ's response to comment 30.

Comment 150
Mary Sky Schoolcraft
Oral Comment

Comment 150:

Hello everybody, my name is Mary Skye Schoolcraft. I live in Patagonia. First of all, I want to say I agree with all the testimony that has been submitted, and applaud our citizenry for coming out and speaking truth to power. I don't want to duplicate what's already been said, and I have submitted written comments on your website.

So I'm going to skip over some of the things that I wrote. First of all, I want to say that I want the Arizona Department of Environmental Quality to do their job of protecting the land, water, and air quality of Arizona from being contaminated by pollutants, heavy metals, noxious materials and toxic runoff, as mandated in the Arizona revised statutes. And I really oppose this draft permit, water permit for Hermosa 32.

People have mentioned that the TMDL analysis needs to be done for each of these creeks, and that all of these creeks empty into the Sonoita Creek, which empties into the lake. This affects the town of Patagonia, and thousands of human beings, animals, plants. I also really want to emphasize that much more frequent monitoring needs to be done at 6.5 million gallons a day. That's 200 million gallons a month. So if there's a problem at the beginning of the month and they wait and want to monitor it, 200 million gallons of contaminated water has already been flowing into the creeks.

I, of course, want the manganese and all the other minerals monitored, and it needs to be done by an independent monitoring [sic]. You don't ask the fox to guard the chicken coop, and you don't ask the polluter to monitor the quality of water. I implore you to live up to the trust that we have placed in you, and to do not only what is right, but what is also legally mandated to protect human health and the quality of our environment. Thank you for standing strong and doing your job.

ADEQ's Response:

For information about TMDLs, see ADEQ's responses to comments 2, 4, and 7. For information about manganese, see ADEQ's response to comment 8. The Clean Water Act discharge permitting program, administered by ADEQ as the AZPDES program, is designed by law to require permittees to conduct monitoring, see ADEQ's response to comment 37. ADEQ is required to issue an individual AZPDES permit to a facility that meets all legal requirements, see ADEQ's response to comment 30.

Comment 151
Skye Leone, Calabasas Alliance
Oral and Written Comments

Comment 151:

My name is Skye Leone. I am a full-time resident of Tubac Arizona. I am the Chairman of the Board of The Calabasas Alliance/La Alianza Calabasas. Friends of the Santa Cruz River Board Member. Friends Foundation International Founding Board Member. I have an undergraduate degree in Environmental Planning and graduate degrees in Natural Science and Education. My comments submitted here to ADEQ are given on behalf of myself and The Calabasas Alliance/La Alianza Calabasas. The use of the word “we” referrers [sic] to myself and the Alliance. The proposed renewal of AZPDES DISCHARGE PERMIT NO. AZ0026387 TO South32 Hermosa, Inc. is important to me and the Calabasas Alliance for the following reasons: 1. I, and most of the members of the Calabasas Alliance, live in the Upper Santa Cruz Watershed. It is critical the health of this watershed be maintained and improved. This includes Harshaw Creek, Alum Gulch, and Sonoita Creek. It is critical not to have any portion of the Upper Santa Cruz Watershed be subject to any more environmental degradation than it already is currently experiencing. 2. It is important to us that the standards of the Federal Clean Water Act and Arizona laws relating to surface water quality be properly adhered to under the jurisdictional authority of ADEQ. 3. Considering “Pollution Discharge Elimination” is in the function of this permit with emphasis on Elimination it is important to us that ADEQ takes seriously its duty to ensure all water discharged from the Hermosa Project be completely free of pollutants at all times. 4. We are deeply concerned with the apparent fact ADEQ is negligent in administering its core obligations and responsibilities regarding the draft permit as it stands now. We refer you to concerns clearly brought to your attention by PARA and its legal counsel. COMMENTS 1. The monitoring requirements in the draft permit are wholly inadequate with regards to frequency of monitoring, contaminants being monitored, and agencies doing the monitoring. Allowing South32 to be the sole agency doing the monitoring is an outrage and is completely unacceptable. Monitoring must be done by independent, verifiable agencies with all monitoring data available to the public in real time. I won’t elaborate further as there already is ample public input detailing what constitutes acceptable monitoring practices. 2. Given the fact that current TMDL studies for this permit are antiquated or lacking ADEQ is not to renew this permit until new TMDL studies are properly conducted, completed, and reviewed. New TMDL studies must include Upper and Lower Harshaw Creek, Alum Gulch, and Sonoita Creek. 3. I and the Calabasas Alliance take great exception to ADEQ’s determination that the Hermosa Project is an existing mine. When South32 purchased the site from ASARCO Custodial Trust there was no mine; only contaminated historic tailings and mine shafts managed for remediation purposes only from the trench Mine abandoned in the 1960’s. This is clearly a new mine you are permitting. ADEQ. Has so far failed to perform a “new source” analysis to determine if South32 is subject to the requirements of the Federal Clean Water Act. This renewal permit is NOT to be issued until ADEQ fulfills this basic obligation. 4. Given the fact that South32 has been discharging water from its Hermosa Project site for many months we request ADEQ make public the dates and quantity of discharge, the methods of analysis for the quality of discharge, dates of testing, and all data related to testing. In absence of any such data we demand an explanation as to why this absence of information from ADEQ is justified. 5. The permit must accurately state the actual location of Outfall 002 as being in Upper Harshaw Creek. As part of my public comments here I include PARA’s comments (attached as two documents) to ADEQ as part of my comments.

The proposed renewal of this permit is important to me and the Calabasas Alliance for the following three reasons.

One, it is important to us that the standards of the Federal Clean Water Act and Arizona laws relating to surface water quality be properly adhered to under the jurisdictional authority of ADEQ. Number two, I and most of the members of the Calabasas Alliance live in the Upper Santa Cruz River Watershed. It is critical the health of this watershed be maintained and improved. Number three, the Arizona Water Resources Board reports Santa Cruz County continues to be in an extreme drought. This is not the time or the place to be dewatering a mine of this magnitude. Thank you.

ADEQ's Response:

For information about monitoring frequencies, see ADEQ's response to comments 9 and 11. The Clean Water Act discharge permitting program, administered by ADEQ as the AZPDES program, is designed by law to require permittees to conduct monitoring, see ADEQ's response to comment 37. For information about TMDLs, see ADEQ's responses to comments 2, 4, and 7. For information about "new source", see ADEQ's response to comment 1. For information about the location of Outfall 002, see ADEQ's response to comment 3.

ADEQ cannot provide the requested data as part of a response to comments, but information regarding quality, dates, times, and quantity of discharge is publicly available. Please see ADEQ's webpage for instructions on submitting a records request: <https://www.azdeq.gov/records>. Data submitted for the AZPDES individual permit may also be downloaded from EPA's Enforcement and Compliance History Online (ECHO) by searching the permit number (AZ0026387): <https://echo.epa.gov/trends/loading-tool/get-data/monitoring-data-download>.

Comment 152

Susan Patla

Written Comment

Comment 152:

As a winter resident of Rio Rico, and someone who spends many days recreating in the Patagonia area including Patagonia Lake State Park, and in the Sonoita Creek and Santa Cruz River drainages, I am writing to express deep concern with the AZDPES [sic] Discharge Permit No. AZ0026387 for the Hermosa Mine Project. The Federal Clean Water Act has been extremely important for protecting people from ground water pollution and its insidious long-term effects on the environment and human and wildlife populations. The permit as currently written fails to apply the Clean Water Act provisions correctly and, thus, the state is failing in its responsibilities to protect ground water in Santa Cruz County from development of this huge, new mining operation. This new mining project cannot be covered under older provisions that were established for historic mines in the area. I am very disappointed that ADEQ has taken such a lax approach. In 2024, citizens expect the agency to use the highest standards available to analyze and protect ground water from contamination. To do anything less would be a shameful dereliction of duty by the department.

I have attached the Patagonia Area Resource Alliance's (PARA) objections to the proposal from Arizona Department of Environmental Quality (ADEQ) to renew the Arizona Pollutant Discharge Elimination Permit (AZPDES) No. AZ0026387 for South32's Hermosa Project mine. These are based on careful legal analysis of the permit.

In closing, I urge ADEQ to do its job and revise the permit to make sure there will be no short or long-term effects on ground water quality from mine discharge. As a nation, we are still dealing with a great

deal of water pollution from historic poor mining practices and the lack of adequate groundwater monitoring in the western US. Do not revert to inadequate standards used in the past. Protect this area which is one of the highest biodiverse regions in the entire USA. You have a great responsibility to the people and environment of Arizona. As a former state employee from Wyoming, I understand the political pressures put on state agencies. Please do what is right. We depend on you!

ADEQ's Response:

ADEQ is applying all applicable standards of the Clean Water Act. The Clean Water Act and the AZPDES program regulate the discharge of pollutants to surface waters and do not regulate discharges to groundwater. See ADEQ's response to comment 26. ADEQ is required to issue an individual AZPDES permit to a facility that meets all legal requirements, see ADEQ's response to comment 30.

Comment 153

**Joseph Michalides
Written Comment**

Comment 153:

I oppose any mining in the state of Arizona by foreign interests as well as their usage or other actions involving our water resources. Short term gain by the state does not justify long term water shortages. Example of this is Saudi alfalfa farming where unlimited and un paid [sic] for ground water pumping [sic] for their crops has caused wells to go dry in the Quartzsite area.

ADEQ's Response:

The AZPDES program does not have the authority to consider where a company is from as part of a permitting decision. ADEQ is required to issue an individual AZPDES permit to a facility that meets all legal requirements, see ADEQ's response to comment 30. The AZPDES program does not have authority to regulate groundwater pumping. See ADEQ's response to comment 19.

Comment 154

**Randall Moore
Written Comment**

Comment 154:

As a concerned resident of Patagonia, AZ, I urge ADEQ to deny the AZ Pollutant Discharge Elimination System (AZPDES) Permit for Australian mining company South32's Hermosa Mine Project in the Patagonia Mtns. The health of Patagonians and other downstream communities, as well as that of the riparian ecosystems of Harshaw Creek, Alum Creek, and Sonoita Creek are far too likely to be adversely affected by this mine for it to be allowed to move forward at all. Even if ADEQ does not agree with this point of view, the permit should still not be issued until ADEQ discharged its responsibility to update TMDL's for Alum Gulch and Harshaw and Sonoita Creeks.

I am including excerpts from the Patagonia Area Resource Alliance in support of this position.

ADEQ's Response:

ADEQ is committed to protecting human health and the environment. See ADEQ's responses to comments 19, 20, and 21. ADEQ For information about TMDLs, see ADEQ's responses to comments 2, 4, and 7.

Comment 155
Mary Ann and Frank Graffagnino
Written Comment

Comment 155:

AS twp [sic] caring and concerned people, my husband and I strongly object to Arizona Department of Environmental Quality's (ADEQ) plan to renew the Arizona Pollutant Discharge Elimination Permit (AZPDES) No. AZ0026387 for South32's Hermosa Project mine.

Sadly and unjustly for humans, wildlife and the environment, the proposed Permit would allow for dangerous discharges of mine water to Harshaw Creek, Alum Gulch, and Sonoita Creek, threatening the health of local residents and the environment in violation of the Federal Clean Water Act and Arizona's laws relating to surface water quality. The issuance of the Permit is also contrary to ADEQ's own rules which require that ADEQ "act to protect the environment", promote "the protection and enhancement of the quality of water resources", provide for the "prevention and abatement of all water and air pollution"; and "[e]nsure the preservation and enhancement of natural beauty" in our state.

Unfortunately, you are not doing your job to enforce the discharge provisions of the Clean Water Act to protect human health and the environment as required by law. You cannot issue the permit until ADEQ complies with Total Maximum Daily Load (TMDL) rules required by the Clean Water Act so that the contaminated waters of Harshaw Creek, Alum Gulch, and Sonoita Creek can finally be returned to good health.

ADEQ's concerted efforts to avoid or trivialize its TMDL obligations in the Permit is astonishing. Please do not issue this permit and please keep us updated on all aspects of this permit process.

FINALLY TO SUMMARIZE, FOR THE HEALTH AND WELL-BEING OF ALL CURRENT AND FUTURE GENERATIONS, WILDLIFE AND THE ENVIRONMENT, DO NOT renew the Arizona Pollutant Discharge Elimination Permit (AZPDES) No. AZ0026387 for South32's Hermosa Project mine...NOT RENEWING THIS PERMIT IS THE HEALTHY, RIGHT, FAIR, JUST AND HUMANE ACTION TO TAKE!

ADEQ's Response:

ADEQ is complying with the Clean Water Act and Arizona law, see ADEQ's response to comment 30. ADEQ has also communicated with the EPA and shared drafts of the permit with the EPA throughout the permitting process. ADEQ has collaborated with the EPA to ensure the permit meets all Clean Water Act requirements. ADEQ is committed to protecting human health and the environment. See ADEQ's responses to comments 19, 20, and 21. For information about TMDLs, see ADEQ's responses to comments 2, 4, and 7. ADEQ is required to issue an individual AZPDES permit to a facility that meets all legal requirements.

Comment 156
Char Hoffman
Written Comment

Comment 156:

I object to Arizona Department of Environmental Quality's (ADEQ) plan to renew the Arizona Pollutant Discharge Elimination Permit (AZPDES) No. AZ0026387 for South32's Hermosa Project mine.

The proposed Permit would allow for dangerous discharges of mine water to Harshaw Creek, Alum Gulch, and Sonoita Creek, threatening the health of local residents and the environment in violation of the Federal Clean Water Act and Arizona's laws relating to surface water quality. The issuance of the Permit is also contrary to ADEQ's own rules which require that ADEQ "act to protect the environment," promote "the protection and enhancement of the quality of water resources," provide for the "prevention and abatement of all water and air pollution," and "ensure the preservation and enhancement of natural beauty" in our state. And you are not doing your job to enforce the discharge provisions of the Clean Water Act to protect human health and the environment as required by law.

Please do not issue this permit and please keep me updated on all aspects of this permit process.

ADEQ's Response:

ADEQ is applying all applicable standards of the Clean Water Act and is committed to protecting human health and the environment. See ADEQ's responses to comments 19, 20, and 21. ADEQ is required to issue an individual AZPDES permit to a facility that meets all legal requirements, see ADEQ's response to comment 30.

Comment 157

David Fain

Written Comment

Comment 157:

Based on my preliminary review, pollutants (air-water-ground) seem to be an inevitable by-product of mining. IF adequate safeguards are not put in place and IF are [sic] water becomes contaminated, ADEQ does not appear to be in a position to act quickly to correct this -- either lacking the resources or the authority to do anything about this type of contamination. Here's an example of the impact that has taken place in the recent past: [http://www.savethesantacruzquifer.info/Data from Wells.htm](http://www.savethesantacruzquifer.info/Data%20from%20Wells.htm) I am attaching a document that supports my position.

ADEQ's Response:

The permit contains effluent limitations and monitoring requirements to ensure all discharges are protective of human health and the environment. See ADEQ's responses to comments 19, 20, and 21. ADEQ completes inspections and ensures compliance with the permit, see ADEQ's response to comment 30. The AZPDES program does not regulate air quality or discharges to groundwater.

Comment 158

Lynn Davison

Written Comment

Comment 158:

I am a resident of Patagonia Arizona and a registered voter in Arizona. I am strongly opposed to ADEQ issuing AZ permit number AZ0026387 for the January Mine Hermosa Project. I believe ADEQ has consistently not met its legal responsibilities to protect our water from the harmful impacts of the proposed Hermosa mine. Some of the most egregious errors include:

- 1. failing to update or prepare original Total Daily Maximum Load (TDML) studies in Harshaw Creek, Alum Gulch, and Sonoita Creek before issuing a permit as required by state law.*

2. treating the Hermosa project as an existing source rather than a new source under the requirements of the Clean Water Act. It is plainly ludicrous to claim that the Hermosa mine will be just an addition to the historic Trench Camp mine. The circular and conflicting arguments that ADDEQ uses in the permit are an embarrassment to the State of Arizona.

3. failing to include sufficient monitoring, or in some cases, any monitoring of potential hazardous materials including manganese and sulfates. Monitoring should occur at least once a month to protect human health from adverse effects of these contaminants.

I urge ADEQ to withdraw the draft permit and complete its statutory [sic] responsibilities as stated more completely in the attached comments from PARA which I hereby incorporate in my comments. A new permit should not be issued unless a complete and unbiased analysis warrants it. ADEQ is charged with protecting our most precious and most threatened natural resource, water. Do your job.

ADEQ's Response:

ADEQ is applying all applicable standards of the Clean Water Act consistent with federal and state law. For information about TMDLs, see ADEQ's responses to comments 2, 4, and 7. For information about "new source", see ADEQ's response to comment 1. For information about manganese and sulfates, see ADEQ's response to comment 8. ADEQ is required to issue an individual AZPDES permit to a facility that meets all legal requirements, see ADEQ's response to comment 30.

Comment 159
Bryan Campbell
Written Comment

Comment 159:

I am writing to the ADEQ to register my concerns over the proposed renewal of AZPDES Discharge Permit No. AZ0026387 for South32's Hermosa Project Mine. The proposed permit would allow for dangerous discharges of mine water to Harshaw Creek, Alum Gulch, and Sonoita Creek, threatening the health of local residents and the environment in violation of the Federal Clean Water Act and the State of Arizona's laws relating to surface water quality. The permit, as currently written, is also contrary to ADEQ's own statutory duties, which require, that ADEQ "act to protect the environment" and to promote "the protection and enhancement of the quality of water resources" and to provide for the "prevention and abatement of all water and air pollution"; and to "[e]nsure the preservation and enhancement of the natural beauty" in our state.

Under controlling law, that ADEQ is subject to, the permit cannot issue, among other things, ADEQ updates or first prepares the Total Maximum Daily Load (TMDL) studies and necessary waste load calculations required by the Federal Clean Water Act so that the impaired (contaminated) surface waters of Harshaw Creek, Alum Gulch, and Sonoita Creek can finally be returned to good health. The TMDL program is a core element of overall efforts to protect and restore water quality to surface waters across the United States and here in Arizona.

I have enclosed a file that summarizes my comments that are based on Patagonia Area Resources Alliance that are broken out under the Harshaw Creek, Alum Gulch, and Sonoita Creek discharges.

In addition, it contains my comments that this mine is a NEW mine that predicates that ADEQ must consider any proposed permit issuance with a "new source" analysis for the entire site, which has been modified very significantly over the last 10 years compared to the historic mine site, which was very small, compared to the site that has been built.

Lastly it contains my comments of the fact that manganese and sulfate must be monitored frequently, at least once a month and reported on.

Thanks [sic] you for your consideration and answers.

ADEQ's Response:

ADEQ is committed to protecting human health and the environment. See ADEQ's responses to comments 19, 20, and 21. For information about TMDLs, see ADEQ's responses to comments 2, 4, and 7. For information about "new source", see ADEQ's response to comment 1. For information about manganese and sulfates, see ADEQ's response to comment 8.

Comment 160

Alxe Noden

Written Comment

Comment 160:

It appears that the environmental damage to our water resources caused and potentially caused by the project will far outweigh any benefits. It does not benefit the community to create short-term jobs and parking lots if there is a long-term loss of water through pollution and overuse. I specifically repeat and incorporate the comments made by the Patagonia Area Resource Alliance (PARA) in this comment.

ADEQ's Response:

ADEQ is committed to protecting human health and the environment. See ADEQ's responses to comments 19, 20, and 21. The AZPDES program does not have the authority to consider economic impact as part of a permitting decision. ADEQ is required to issue an individual AZPDES permit to a facility that meets all legal requirements, see ADEQ's response to comment 30.

Comment 161

Karen Christian

Written Comment

Comment 161:

STOP allowing foreign mining companies to destroy Arizona's mountains. Residents LOVE them and often recreate in them. Scars from mines are NOT attractive.

ADEQ's Response:

The AZPDES program regulates the discharge of pollutants to surface waters. The AZPDES program does not regulate the mining process itself. The program does not have the authority to consider where a company is from as part of a permitting decision.

Comment 162

Dona LaSchiava
Written Comment

Comment 162:

Protect the Patagonia Mountains from South32! Water is our planet's most precious natural resource, especially in drought stricken regions such as Arizona, and commands being protected as such! REJECT Permit No. AZ0026387!

The AZPDES Permit would allow discharge of up to 6.48 million gallons of mine water per day into Upper Harshaw Creek. This water will be produced from deep and destructive mine dewatering wells, and it will include historic and new seepage from the mine's tailings piles, core cuttings, and potentially acid-generating (PAG) rock from mine shaft development. The waters of Upper Harshaw Creek are impaired (contaminated) with elevated levels of copper, and low pH (acidity) that can result in heavy metal contamination. Despite documented impairments in the receiving waters of Harshaw Creek, ADEQ takes the position that it need not prepare a TMDL analysis to regulate South32's discharges into these impaired surface waters so that water quality standards can be achieved. This violates the Clean Water Act!

ADEQ's Response:

For information regarding the Harshaw Creek TMDL, see ADEQ's response to comment 4. The AZPDES program does not have authority to regulate groundwater pumping. See ADEQ's response to comment 19. ADEQ is required to issue an individual AZPDES permit to a facility that meets all legal requirements, see ADEQ's response to comment 30.

Comment 163
Margaret Faucher
Written Comment

Comment 163:

As a resident of Patagonia, AZ, I strongly urge the ADEQ not to renew the Arizona Pollutant Discharge Elimination Permit No. AZ0026387 for South32's Hermosa Project Mine. Allowing a foreign company to dewater our precious aquifer and discharge the water as a waste product is an egregious violation of the Federal Clean Water Act. Please do the right thing and protect the residents of Arizona and the wildlife that would be harmed by the discharge of polluted mine water and reject this dangerous and wasteful permit. As a supporter of the Patagonia Area Regional Alliance (PARA) I have included a copy of their comments with their permission.

ADEQ's Response:

The AZPDES program does not have the authority to regulate groundwater pumping. See ADEQ's response to comment 19. ADEQ is required to issue an individual AZPDES permit to a facility that meets all legal requirements, see ADEQ's response to comment 30.

Comment 164
Jesus Cruz
Written Comment

Comment 164:

As a resident of Rio Rico I am very concerned with the possibility that our ground water could become contaminated. I have a responsibility to our family and future generations to make sure that our

groundwater is not contaminated. I am requesting that ADEQ completes all required testing of our groundwater before issuing any permits for the South32 mine. We live in a fragile environment in Santa Cruz County that can become more economically depressed if our groundwater is contaminated. The life and health of our residents is most important to maintain our potential for economic prosperity. We are located at a critical point in Arizona that impacts the state economy. We are major [sic] port in Arizona for imports and exports to Mexico. If groundwater is contaminated it could eventually cause harm to our economy. ADEQ has a responsibility to ensure that proper testing is done and also to keep monitoring and testing the groundwater in Santa Cruz County specifically the areas where south 32 mine will discharge to our water supply.

ADEQ's Response:

The AZPDES program does not have authority to regulate discharges to groundwater. See ADEQ's response to comment 26.

Comment 165
Michael Ingram
Written Comment

Comment 165:

This permit should be denied due to the destructive nature of South32's project for the watershed of the Patagonia Mountains. South32 nor ADEQ can show definitively that this project will NOT destroy this watershed. The models that South32 are using are simply not detailed enough and there is not enough known about the geology of the area to demonstrate that this project will not destroy the watershed. And to top it all off, South32 is not a trusted source of information for the analysis ... their data cannot be counted on as witnessed by the many criminal charges that this company has been brought up on in many countries and under many jurisdictions far removed from Arizona. South32 is simply not to be trusted, certainly not with the geology modeling or our water.

ADEQ's Response:

As part of ADEQ's responsibilities, the Agency performs regular inspections of all AZPDES permitted facilities, including the January Mine Hermosa Project, to verify permittees are complying with their AZPDES permits. For more information about how ADEQ confirms permit compliance, see ADEQ's response to comment 30. ADEQ is committed to protecting human health and the environment. See ADEQ's responses to comments 19, 20, and 21. ADEQ is required to issue an individual AZPDES permit to a facility that meets all legal requirements.

Comment 166
Fred Runkel
Written Comment

Comment 166:

Re: AZDEQ's proposal to allow discharge from "historic tailings" into Alum Gulch.

The problem with this: this ignores the situation in which there are new tailings and new pollutants that would be released into Alum Gulch.

We have verified information about South32's operation of this site for years: the tailings in question are not merely "historic." There are also new tailings. Also ignored are documented findings by both South32 and ADEQ that the tailings pile and mine seepage from this pile includes new sources of pollutants.

ADEQ's conclusion that the only mine seepage that will be discharged to Alum Gulch from the tailings pile will come from historic tailings is plainly inaccurate because it chooses not to acknowledge this documented information. A realistic revised permit will take into account this information and assess the pollutants introduced by all the tailings at his [sic] site, historic as well as new.

Re: New Source Analysis should be required.

ADEQ's stance on this is that South32 operation, both current operations as well as planned, are only a continuation of the historic mine.

To put it plainly, this strains credulity. Of course it is clear and obvious why you want to maintain this fiction, so that current standards of the Clean Water Act can be avoided. But what about ADEQ's stated mission/vision; "To protect and enhance public health and the environment in Arizona"

I think it should be evident to all that the deep mine shafts, two wastewater treatment plants, exploration shafts, dewatering wells, new expanded tailings facility containing both historic and new material, tailings drainage pond, and associated infrastructure at the Hermosa Project site were built within the last 10 years (or are currently being constructed) meet the common sense definition of something more than merely the "historic" mine.

As such these extensive, complicated and new facilities (which South32 loves to extol as "innovative") must be considered a legal new source of discharge before issuing a renewed permit.

Furthermore, ADEQ should revise the permit to acknowledge that the mine is fully expected to go into production during the life of this permit.

Furthermore, As a new source, the mine is subject to all modern performance standards and requirements of the Clean Water Act.

I believe that asking you to do this is nothing more than asking you to honor ADEQ's stated Mission/Vision as declared on your webpage: To protect and enhance public health and the environment in Arizona"

Re: Water quality monitoring frequency.

The Draft Permit only requires these measurements be taken once per quarter (Assessment Levels), twice per year (Discharge Characterization Testing), even only once per year (Whole Effluent Toxicity).

This means that elevated levels of contaminants such as arsenic, cyanide, cadmium, lead, mercury, uranium could go undetected for months. Please recall that the residents of Patagonia actually drink this water.

To reduce the risk of this happening it is absolutely essential, to protect human health, that monitoring be done more frequently.

ADEQ's Response:

ADEQ is applying all applicable standards of the Clean Water Act, see ADEQ's response to comment 30. For a response about "new source" and historic tailings, see ADEQ's response to

comment 1. For information about monitoring frequencies, see ADEQ's response to comments 9 and 11.

Comment 167
Marc Faucher
Written Comment

Comment 167:

It is absurd to have a foreign-owned corporation drain and discharge 6.5 million gallons of groundwater a day from an aquifer shared by the ranchers of San Rafael Grasslands and the Town of Patagonia. The amount of groundwater being withdrawn is similar in scale to the groundwater withdrawals of the farms in La Paz County recently closed down by the State of Arizona. The discharge amounts in this permit application will erode riparian zones and leach heavy metals through the Harshaw Creek and Sonoita Creek basins that flow through the center of Santa Cruz County, thus violating the Clean Water Act. I am attaching a PDF from PARA containing more detailed comments. Thank you.

ADEQ's Response:

The AZPDES program does not have authority to regulate groundwater withdrawals. ADEQ is committed to protecting human health and the environment. See ADEQ's responses to comments 19, 20, and 21. ADEQ is required to issue an individual AZPDES permit to a facility that meets all legal requirements, see ADEQ's response to comment 30.

Comment 168
Keenia Shinagawa
Written Comment

Comment 168:

Please don't build this mine. Water is precious and we live in the desert. Water and a thriving healthy community is more important than making more money. Isn't money supposed to be a tool to improve our lives? So why are we harming nature and making our lives worse for the sake of money?

ADEQ's Response:

The AZPDES program does not have the authority to consider economic impact as part of a permitting decision, see ADEQ's response to comment 30. ADEQ is committed to protecting human health and the environment. See ADEQ's responses to comments 19, 20, and 21. ADEQ is required to issue an individual AZPDES permit to a facility that meets all legal requirements.

Comment 169
Patrick Grady
Written Comment

Comment 169:

This proposal is simply irresponsible. It will destroy the environment. At a time when all Arizonans have acknowledged we are in a water crisis, this project's water use and impact is a devastating [sic] and unconscionable. The negative impact on the unique natural beauty of the Patagonia community must outweigh whatever minimal economic benefits might result.

ADEQ's Response:

ADEQ is committed to protecting human health and the environment. See ADEQ's responses to comments 19, 20, and 21. ADEQ is required to issue an individual AZPDES permit to a facility that meets all legal requirements, see ADEQ's response to comment 30.

Comment 170
Barb Saulsbury
Written Comment

Comment 170:

I am very fortunate to have settled in Patagonia Arizona. My husband and I spent parts of four years traveling around the United States to find a place. We are very excited and pleased to be here. The beauty of the area attracted us. As we become members of this community I feel it necessary to express concerns to impress the importance that the agency, ADEQ, seriously and to its best abilities monitor and regulate the South 32 mining project.

As you review the permit #AZ0026387 please address these concerns.

- 1. The discharge proposed actually Outfall 002 is on Upper Harshaw Creek. This water creek is listed as impaired under Arizona's Clean Water Act. Therefore the agency should revise this before issuing the renewed permit.*
- 2. The agency should also provide the extent of ongoing discharge to Harshaw creek. This information is important before the issuing of this permit.*
- 3. Concerns about Alim Gluch [sic] also need to be addressed. The Total Maximum Daily Load should be updated and new studies may be necessary. New lead impairments should be studied.*
- 4. The idea that "historic tailing" into Alum Gluch does not acknowledge that South 32 is operating and pollutants from the tailing piles and seepage includes dangerous new sources of pollutants.*
- 5. Sonoita Creek is an important waterway. It seems important that this agency complete Total Maximum Daily Load for zinc impairment. This appears to be required by the Clean Water Act.*
- 6. Manganese and Sulfate need to be monitored. It makes sense to request this monthly.*
- 7. South 32 is a new mine with new minerals being removed. As such, the agency should legally require the permits to be "new sources" of discharges.*

Please take these concerns into your considerations as you go through the process of the renewal of AZPDES Discharge Permit #AZ0026387.

I personally ask your agency to take into considerations [sic] the safety of people of Santa Cruz county. Be thorough and thoughtful because you protect the people and enviroment [sic] of this wonderful area.

ADEQ's Response:

For information about the location of Outfall 002, see ADEQ's response to comment 3. ADEQ acknowledges the ongoing discharge to Harshaw Creek, see ADEQ's response to comment 5. For information about TMDLs, see ADEQ's responses to comments 2, 4, and 7. For information about "new source" and historic tailings, see ADEQ's response to comment 1. For information about manganese and sulfate, see ADEQ's response to comment 8. For information about monitoring frequencies, see ADEQ's response to comments 9 and 11. ADEQ is required to issue an individual AZPDES permit to a facility that meets all legal requirements, see ADEQ's response to comment 30.

Comment 171
Carol Milligan
Written Comment

Comment 171:

My husband, Eric Findeis and I own Lot 34 in the Mesa in Patagonia (30 Copper Court) and are working with a local builder to create what will be our primary residence. Over the past few years we have carefully followed the development of the South 32 mining project. We believe that successful 21st mining can only be achieved with appropriate oversight and regulations at the highest levels to ensure protection of human residents and the local environment. As outlined by the Patagonia Area Resource Alliance in the attached document, there are significant concerns regarding the renewal of South 32's AZPDES Permit. We urge ADEQ to not only consider these concerns, but to ensure that they are addressed as outlined for South 32's permit. For us, this is critical as we look forward to making Patagonia our home.

ADEQ's Response:

ADEQ is committed to protecting human health and the environment through appropriate oversight and regulations. See ADEQ's responses to comments 19, 20, and 21. For information on how ADEQ oversees facilities through inspections, see ADEQ's response to comment 30.

Comment 172
Onur Azeri
Written Comment

Comment 172:

Hello: My name is Onur Azeri and I am a resident of this incredible town we get to call home. Patagonia, AZ.

I moved here from the dense, polluted, crowded, loud and awful concrete jungle of NY to escape all of that and come to a small town I could call home: With clean water, beautiful skies and incredible natural beauty, wildlife, and flora.

I strongly oppose the renewal of the AZDPES [sic] for the South 32 Hermosa Mine. Water is our most precious resource in this fragile biosphere in the desert and it needs to be protected and valued for all its benefits. I am referencing, full support and I am including PARAs comments as part of my comments.

The proposed discharge permit will allow dangerous discharge into our waterways, drain our life giving aquifer which the town of Patagonia relies on for drinking water. It threatens the health of the community, residents and greater environmental area.

Fact 1 - South 32 Hermosa is a CLEARLY A NEW MINE. The old mine in the similar site was CLOSED DOWN. And all legal steps need to take the NEW mine into consideration. No permits should be given without that consideration. ADAQ [sic] needs to live up to the standards set out in the ADEQ mission statement.

Fact 2 - the proposed monitoring are [sic] insufficient! Monitoring need [sic] to account for manganese and sulfate, among other minerals baselines need to be set and monitoring need to random ad [sic] well as conducted at much more frequent intervals Additionally, monitoring need [sic] to be done by an independent monitoring agency, NOT by the polluter South 32.

TMDL analysis needs to be completed for the Zinc in Sonoita Creek before issuing the permit. Additionally, waste load allocation for the discharge into Sonoita Creek must be preformed [sic]. This is mandated by the Clean Water Act.

Fact 3 - Santa Cruz County is in a multi year extreme drought! The use of 6.5 million gallons of water being polluted and discharged is absolutely unacceptable.

Fact 4 - ADEQ discharge location is in reality in Upper Harshaw Creek, not Lower Harshaw as falsely claimed. The permit MUST take the impairments of Lower Harshaw Creek into consideration. The true ongoing discharge MUST be calculated in the proposed permit.

We EXPECT our State agencies to be true to their mandate - "To protect and enhance public health and the environment in Arizona. Through consistent, science-based environmental regulation..."

ADEQ's Response:

For information about "new source", see ADEQ's response to comment 1. For information about manganese and sulfate, see ADEQ's response to comment 8. The Clean Water Act discharge permitting program, administered by ADEQ as the AZPDES program, is designed by law to require permittees to conduct monitoring, see ADEQ's response to comment 37. For information about monitoring frequencies, see ADEQ's response to comments 9 and 11. For information about TMDLs, see ADEQ's responses to comments 2, 4, and 7. The AZPDES program does not have authority to regulate groundwater pumping. See ADEQ's response to comment 19. For information about the location of Outfall 002, see ADEQ's response to comment 3. ADEQ is required to issue an individual AZPDES permit to a facility that meets all legal requirements, see ADEQ's response to comment 30.

Comment 173

Gary Kiser

Written Comment

Comment 173:

Water in Arizona is a precious resource. We do not need this mine as it will reduce ground water in the Patagonia area. Patagonia is such a beautiful area. Don't let mining ruin the area.

ADEQ's Response:

The AZPDES program does not have the authority to regulate groundwater pumping, see ADEQ's response to comment 19. ADEQ is required to issue an individual AZPDES permit to a facility that meets all legal requirements, see ADEQ's response to comment 30.

Comment 174

Orion Niles

Written Comment

Comment 174:

Please incorporate PARA's comments into my comment.

I object to the renewal of the South 32 Hermosa pollutant discharge permit, AZ0026387.

Of course this is a "new" mine, and totally unlike anything that was happening 3 quarters of a century ago.

Do you who are responsible to decide this want to be remembered as someone who held the gate open while the toxic pollutants came through, carrying with them an environmental catastrophe in southern Arizona... lost lives, ruined ecology.

If you believe in God and the cosmic law of cause and effect, how could you do other than protect the families and children of our community, by doing all you can to stop this mine?

To grant this permit would be criminal.

What is water? As spoken by a few others... It's life... it's a matter of life and death!

South 32 has a public researchable global record of fines, broken regulations, backroom deals, unremediated health catastrophes... cancer, parkinson's, and worse.

That's your mother... your father...your son... your daughter.

They've proven they're not concerned with prioritizing people, health, and communities.

Of course monitoring must be done frequently, and by a third party.

The fact that it's gotten this far and we have to be here shows the vulnerability of our supposed environmental protections, and those who are to uphold them.

Governmental protection entities here seem to have a tendency to strongly rest on the "limitations" of their authority.

What about being the one to take responsibility, when no one else is? To use a term from decades past, what about 'throwing your body upon the gears' of the evil machinations of unscrupulous people who will endanger all life in this region.

You are entrusted with the highest responsibility to protect the people, and are very much responsible and accountable before God, humanity, and all of our local families... not to your limitations.

Please, take a stand!

Wow - how wonderful it'd be if we could see you really put your butts on the line...!?

ADEQ's Response:

The permit contains effluent limitations and monitoring requirements to ensure all discharges are protective of human health and the environment. See ADEQ's responses to comments 19, 20, and 21. The AZPDES program does not have the authority to consider compliance history with other permits when making a permitting decision.

ADEQ completes regular inspections of all AZPDES-permitted facilities, including the January Mine Hermosa Project, to ensure permit compliance, see ADEQ's response to comment 30. ADEQ is required to issue an individual AZPDES permit to a facility that meets all legal requirements. For information about "new source", see ADEQ's response to comment 1. The Clean Water Act discharge permitting program, administered by ADEQ as the AZPDES program, is designed by law to require permittees to conduct monitoring, see ADEQ's response to comment 37.

Comment 175
Robin Kolwicz
Written Comment

Comment 175:

The ADEQ's posted mission statement is to protect and enhance public health and environment in Arizona. In order to fulfill that mission, the ADEQ must be extremely conservative in considering mining permits such as the proposed renewal of Pollutant Discharge Elimination Permit No. AZ0026387 for South32's Hermosa Project mine. It is my understanding that this Permit would allow massive mine water discharge into several creeks, endangering human health and the environment in violation of both the Federal Clean Water Act and Arizona's laws relating to surface water quality. Moreover, the reckless waste of groundwater is remarkably irresponsible in light of Arizona's dwindling water resources. Acting in direct opposition to the best interests of Arizona's citizens and ADEQ's own mission statement in order to enrich Australian investors is shameful. Please do not issue this permit and please keep me updated on all aspects of this permit process. Thank you for your consideration.

ADEQ's Response:

The permit complies with the Clean Water Act and Arizona law. ADEQ is committed to protecting human health and the environment. See ADEQ's responses to comments 20 and 21. The AZPDES program does not have the authority to regulate groundwater pumping, see ADEQ's response to comment 19. ADEQ is required to issue an individual AZPDES permit to a facility that meets all legal requirements, see ADEQ's response to comment 30.

Comment 176
Emma Simonson
Written Comment

Comment 176:

I STRONGLY oppose the renewal of the AZPDES for the South 32 Hermosa Mine. This cannot happen. Water is Life for absolutely everything and everyone on Earth. Patagonia is a precious place with a precious community of humans, plants, birds, wild game and so much Vital Life. Water feeds us all, it is a Resource that gives us all Life and we must REMEMBER and treat it as such. We must protect our Water as though it was our very own child.

This permit allows for dangerous contaminants into our waters and it will drain the aquifer. The community of Patagonia relies on this water. These actions threaten the health of the community and the environment in every way possible. Again, I STRONGLY oppose this renewal.

We EXPECT, hope and trust that our State agencies will also help protect these lands knowing the high level stakes and consequences that these actions will have on this environment and its people. We hope they stay true to their mandate - "To protect and enhance public health and the environment in Arizona. Through consistent, science-based environmental regulation..."

ADEQ's Response:

The permit contains effluent limitations and monitoring requirements to assure all discharges are protective of human health and the environment. See ADEQ's responses to comments 19, 20, and 21. ADEQ is required to issue an individual AZPDES permit to a facility that meets all legal requirements, see ADEQ's response to comment 30.

Comment 177
Julie Arma
Written Comment

Comment 177:

I object to the proposal from Arizona Department of Environmental Quality (ADEQ) to renew the Arizona Pollutant Discharge Elimination Permit (AZPDES) No. AZ0026387 for South32's Hermosa Project mine.

The renewal of this permit could allow dangerous discharges of mine water to Harshaw Creek, Alum Gulch, and Sonoita Creek, threatening the health of local residents, wildlife and the environment. Endangered species including the Jaguar which is well within range of this project and water discharge, could be impacted. Mark Hart, Arizona Game and Fish has confirmed a Jaguar in Southern Arizona, Jan. 2024 as well as the Center for Biological Diversity.

I am extremely concerned about the Seismology impacts of the water continuously being removed and relocated, the weight on the crust of the earth will change possibly causing earthquakes, land subsidence and many fissures. The AZPDES Permit would allow discharge of up to 6.48 million gallons of mine water per day into Upper Harshaw Creek and 172,000 gallons of mine water per day into Alum Gulch. Water weighs 62.4 lbs. per cubic foot! This does not seem to be a consideration in the permit documentation. Has this been taken into account for the safety of local residents, and more widely Santa Cruz County?

Below I include the comments from Patagonia Area Resource Alliance, I ask that these comments be careful [sic] examined before approving this permit.

We are all part of the web of life whatever we do to the web we do to ourselves - attributed to Chief Seattle

ADEQ's Response:

ADEQ is committed to protecting human health and the environment. See ADEQ's responses to comments 19, 20, and 21. The Endangered Species Act does not apply to AZPDES permits, see ADEQ's response to comment 36. The AZPDES program does not have the authority to regulate groundwater pumping, see ADEQ's response to comment 19. The AZPDES program does not have the authority to consider seismology impacts when making a permitting decision. ADEQ is required to issue an individual AZPDES permit to a facility that meets all legal requirements, see ADEQ's response to comment 30.

Comment 178
Tiffany Bertelsen
Written Comment

Comment 178:

We need less development in these key corridors for wildlife in this beautiful yet harsh environment THEY call home!!!!

Please do not allow this to proceed. We can find another way.

ADEQ's Response:

The AZPDES program regulates the discharge of pollutants to protected surface waters. The program does not have the authority to regulate development. ADEQ is required to issue an

individual AZPDES permit to a facility that meets all legal requirements, see ADEQ's response to comment 30.

Comment 179
Anita Conner, Calabasas Alliance
Written and Oral Comments

Comment 179:

Good evening. My name is Dr. Anita Conner. I am the Chief Medical Advisor of the Calabasas Alliance and I live in Rio Rico. Our organization is a relatively new but active grassroots advocacy group with the mission of preserving and protecting the natural environment of biodiverse flora and fauna, water resources, air quality, and the health and safety of all residents of Santa Cruz county. Through active advocacy, in cooperation with like minded groups and legal counsel, the Alliance seeks to mitigate the negative effects of major industrial development, especially mining, ore processing and accompanying transport in Santa Cruz county.

First and foremost, speaking for myself and the Calabasas Alliance, I want to express my strongest possible support for the Patagonia Area Resource Alliance's (PARA's) legal team's document of their specific comments on the proposed renewal of the Arizona Pollutant Discharge Elimination Permit for South32 Hermosa. I am including that document as an addendum to my comments which I will be submitting to you online. Each one of their points is critically important but I personally want to emphasize the need to revise the Draft Permit to require monitoring for manganese.

The health risks associated with too much exposure to manganese are well documented and would be of greatest risk to our very young and our older populations. Imagine the possibility of a young family unknowingly using contaminated well water to make their baby's formula, unaware that they could be contributing to permanent neurotoxic effects for their child. Or an elderly family member potentially developing manganism which may look like Parkinson's disease, but for which anti Parkinson's disease medications do not help, and no other treatments are currently available to effectively treat the symptoms. I also fully support the recommendations to increase the frequency of monitoring.

All the comments relating to the needed Total Maximum Daily Load studies in PARA's document must be carefully and consciously incorporated into any revised or new permit that might be approved for South32 Hermosa. Furthermore, the need to identify this as a new mine is well described in the same document. The consequences of not taking all these points seriously are far-reaching and potentially devastating to our county. The classification of Santa Cruz county as being in an extreme drought state (in the 5% worst category for the state) as per the Arizona Department of Water Resources at their meeting yesterday makes the situation all the more dire. Your role with the Arizona Department of Environmental Quality is one which will shape the destiny of this area for many years to come. Thank you for your time.

ADEQ's Response:

For information about manganese, see ADEQ's response to comment 8. For information about TMDLs, see ADEQ's responses to comments 2, 4, and 7. For information about "new source", see ADEQ's response to comment 1. ADEQ is required to issue an individual AZPDES permit to a facility that meets all legal requirements, see ADEQ's response to comment 30.

Comment 180
Kathryn Schrag
Written Comment

Comment 180:

I am writing to address AZPDES Permit No. AZ0026387. I have lived in Patagonia for over 20 years, and have watched with growing concern as foreign mining interests have made plans to extract minerals from the surrounding mountains. This is one of the most biodiverse areas in the world, and although it contains minerals valuable to all of us, the price of extraction on the health of the land, the air, the water, the plants, the animals, and humans may be too steep. If we are unable to stop South 32 and the other companies, it is the responsibility of ADEQ to be certain they do it to the HIGHEST safety standards possible. Tonight I attended the session sponsored by ADEQ at the Patagonia High School Over 100 people attended, from all over Santa Cruz County. The concerns were well articulated and i will not bother reiterating them here. What i will say, is that i oppose the ADEQ permit as drafted for the Hermosa Mine, and beg you to readdress the issue.

ADEQ's Response:

ADEQ is committed to protecting human health and the environment. See ADEQ's responses to comments 19, 20, and 21. ADEQ is required to issue an individual AZPDES permit to a facility that meets all legal requirements, see ADEQ's response to comment 30.

Comment 181
Katerina Sacoman
Written Comment

Comment 181:

The January Mine is a direct threat to the health of the headwaters of The Santa Cruz River. These headwaters affect the water in the rest of the watershed and those who's [sic] water is supplied by The Santa Cruz River. The mine should not receive a renewal on permit No.AZ0026387. The pollutant discharge system will be detrimental to the communities and ecosystems in the area.

ADEQ's Response:

ADEQ's surface water quality standards and designated uses must be set to be protective of downstream waters per A.A.C. R18-11-104(F). ADEQ sets AZPDES permit limits based on applicable surface water quality standards, which ensures protection of both the receiving water and downstream waters. By setting appropriate surface water quality standards and monitoring waters, as well as setting appropriate permit limits, ADEQ protects the health of the receiving water and downstream waters. When ADEQ set the designated uses and standards for Alum Gulch and Harshaw Creek, ADEQ ensured the designated uses were protective of downstream waters, including the Santa Cruz River. The permit limits are protective of not only Alum Gulch and Harshaw Creek, but also the Santa Cruz River. ADEQ is required to issue an individual AZPDES permit to a facility that meets all legal requirements, see ADEQ's response to comment 30.

Comment 182
Susan Husband
Written Comment

Comment 182:

I'm writing to urge you to deny South32's Hermosa permit (#AZ0026387) for discharge of mine water into Harshaw and Alum creeks.

This issue highlights the difficult choices we are faced with and the ironic, and often unintended consequences of our efforts to make environmentally conscious decisions. Currently there is a lot of pressure on policy makers and business executives to embrace and promote actions that will decrease climate change, and the search for metal resources such as copper, cadmium, zinc and other elements found at this location, is at a fevered pitch. The unfortunate truth is that in our attempts to stave off environmental harm in one area we create it in other ways.

There is nothing more precious to our planet, and life on our planet, than water. It is said that we are in the middle of a 20 year drought because it has been going on that long – it could be a 50 or 100 year drought. Faced with this knowledge it is critical that we conserve and use wisely our precious water resources . How can we (actually you) allow ground water to be removed and flushed away to make room for extremely destructive mining activity.

I have read the figure of more than 6 million gallons of water per day! Can this be true! Such a volume of transference would dewater the surrounding area and create a cone of depression, drying springs, killing vegetation, leaving animal life without the resources they need. Further damage will be done when the removed water is then flushed down Harshaw Creek and Alum Creek. I believe a moonscape would be the result of this action with the die-off the plants near the mine and the erosion of land downstream.

In addition, these mountains are a biological hot spot, a place where the ecology of the Sierra Madre and the Rocky Mountains come together, resulting in many plants and animals found no where [sic] else in the U.S. These rare plants and animals, especially birds, draw scientists, artists, visitors of all types to this remote part of the state and the financial resources they bring are critical to the economy. Unlike mining, they do not cause destruction and devastation when they leave and no Superfund millions are needed to clean up after them.

In Arizona's past the mining interests always benefited. I hope we can move past that. Please consider the many aspects, not just mining but also ecology, economy and sustainability in making your decision. Much is at stake.

ADEQ's Response:

The AZPDES program does not have authority to regulate groundwater pumping. See ADEQ's response to comment 19. The program does not have the authority to consider economic impact as part of a permitting decision, and ADEQ is required to issue an individual AZPDES permit to a facility that meets all legal requirements, see ADEQ's response to comment 30.

Comment 183**Kelvin Murray****Written Comment****Comment 183:**

As a Professional Ecologist certified by the Ecological Society of America, I object to ADEQ's plan to renew the AZPDES No. AZ0026387 for South32's Hermosa Project mine. My reading of the project description suggests that the project would require draining an aquifer upon which the flow of several

vital springs depends, alter the hydrology of several other streams in such a way that their ecological relationships would be damaged, and discharge harmful chemicals from the mines into the water supply upon which the area's human and animal populations depend. It's likely that both federal and Arizona water quality laws would be violated by this action. The issuance of the Permit is also contrary to ADEQ's own rules which require that ADEQ "act to protect the environment", promote "the protection and enhancement of the quality of water resources", provide for the "prevention and abatement of all water and air pollution"; and "[e]nsure the preservation and enhancement of natural beauty" in our state. You need to do your job to enforce the discharge provisions of the Clean Water Act to protect human health and the environment as required by law. You cannot issue the permit until ADEQ complies with Total Maximum Daily Load (TMDL) rules required by the Clean Water Act so that the contaminated waters of Harshaw Creek, Alum Gulch, and Sonoita Creek can finally be returned to good health. ADEQ's concerted efforts to avoid or trivialize its TMDL obligations in the Permit is astonishing.

Please do not issue this permit and please keep me updated on all aspects of this permit process.

ADEQ's Response:

South32 has demonstrated to ADEQ that the proposed facility will meet Clean Water Act requirements. The permit will ensure that the facility complies with all federal and Arizona water quality laws. The permit contains effluent limitation and monitoring requirements to ensure all discharges are protective of Alum Gulch and Harshaw Creek. ADEQ is committed to protecting human health and the environment. See ADEQ's responses to comments 19, 20, and 21. For information about TMDLs, see ADEQ's responses to comments 2, 4, and 7. ADEQ is required to issue an individual AZPDES permit to a facility that meets all legal requirements, see ADEQ's response to comment 30.

Comment 184

D Sohocki

Written Comment

Comment 184:

We oppose the permitting of January Mine Hermosa project. The groundwater pumping associated with this project is both excessive and destructive. When will ADEQ stand up and protect our dwindling groundwater resources? When will ADEQ stop being a lapdog for the mining and development interests in the state?

ADEQ's Response:

The AZPDES program does not have the authority to regulate groundwater pumping. See ADEQ's response to comment 19. ADEQ is required to issue an individual AZPDES permit to a facility that meets all legal requirements, see ADEQ's response to comment 30.

Comment 185

Susan Schanerman

Written Comment

Comment 185:

Please reconsider this action and protect the environment of this region.

ADEQ's Response:

ADEQ is committed to protecting human health and the environment. See ADEQ's responses to comments 19, 20, and 21. ADEQ is required to issue an individual AZPDES permit to a facility that meets all legal requirements, see ADEQ's response to comment 30.

Comment 186
Suzanne Solvet
Written Comment

Comment 186:

Do not waste our precious water. Think of the big Picture, for a change, of our environment and of future generations instead of greed for today.

ADEQ's Response:

ADEQ is committed to protecting human health and the environment. See ADEQ's responses to comments 19, 20, and 21. ADEQ is required to issue an individual AZPDES permit to a facility that meets all legal requirements, see ADEQ's response to comment 30.

Comment 187
Kelley Gallaher
Written Comment

Comment 187:

South32's Hermosa Mine should: Be identified as a brand new mine; Have its treated wastewater monitored independently for heavy metal contaminants, including manganese, on a monthly basis.

ADEQ's Response:

For information about "new source", see ADEQ's response to comment 1. For information about monitoring frequencies, see ADEQ's response to comments 9 and 11. For information about manganese, see ADEQ's response to comment 8. The Clean Water Act discharge permitting program, administered by ADEQ as the AZPDES program, is designed by law to require permittees to conduct monitoring, see ADEQ's response to comment 37.

Comment 188
Andrea Bernkrant
Written Comment

Comment 188:

I will be brief. There is no project worth wasting precious water sources in AZ and permanently damaging the natural landscape [sic]. None. We already have communities in the valley that have literally run out of water. To allow this project, especially to benefit foreign mining companies who have no vested interest in the welfare of the people or environment of AZ is unconscionable. We cannot continue to ignore the long-term ruination of our land for short-term profits. Do not allow the January Mine Hermosa project to be implemented.

ADEQ's Response:

ADEQ is committed to protecting human health and the environment. See ADEQ's responses to comments 19, 20, and 21. ADEQ is required to issue an individual AZPDES permit to a facility that meets all legal requirements, see ADEQ's response to comment 30.

Comment 189
Leah Gilbert
Written Comment

Comment 189:

I am opposed to the proposed mining project in the Patagonia area that will degrade conditions in the area and waste our precious water resources. I ask that you do not issue any permits for this project.

ADEQ's Response:

ADEQ is committed to protecting human health and the environment. See ADEQ's responses to comments 19, 20, and 21. ADEQ is required to issue an individual AZPDES permit to a facility that meets all legal requirements, see ADEQ's response to comment 30.

Comment 190
Mindy Rubin
Written Comment

Comment 190:

The Hermosa mine project to pump ground water will harm our environment and the lives of people in Az. Please do not continue.

ADEQ's Response:

The AZPDES program does not have the authority to regulate groundwater pumping, see ADEQ's response to comment 19. ADEQ is committed to protecting human health and the environment. See ADEQ's responses to comments 19, 20, and 21. ADEQ is required to issue an individual AZPDES permit to a facility that meets all legal requirements, see ADEQ's response to comment 30.

Comment 191
Emilio Falco
Written Comment

Comment 191:

From the PARA newsletter:

"Despite assurances of safety and sustainability, South 32 has a truly horrific record of environmental devastation poisoning people and places around the planet, as our partners with Calabazas Alliance have shared below. " This is only a general comment, but it is very relevant, because any permit they receive may not be honored. There must be clear rules and consequent enforcement.

ADEQ's Response:

The AZPDES program does not have the authority to consider compliance history with other permits when making a permitting decision. ADEQ completes regular inspections of all AZPDES-permitted facilities, including the January Mine Hermosa Project, to ensure permit compliance. ADEQ also will receive regular submittals of data and reports to ensure the facility is operated in compliance with the AZPDES permit, see ADEQ's response to comment 30.

Comment 192
Mary Steenhoek
Written Comment

Comment 192:

I ask that you do not issue a Permit to AZDPES [sic] for the Hermosa Project for underground discharge. Water is one of the most important and valued resources of our state to be preserved for vital uses. Do not approve this discharge. It is a waste of vital resources.

ADEQ's Response:

The AZPDES program does not regulate underground discharges. The AZPDES program regulates the discharge of pollutants to protected surface waters. ADEQ is required to issue an individual AZPDES permit to a facility that meets all legal requirements, see ADEQ's response to comment 30.

Comment 193-202
Chris Gardner
Written and Oral Comments

Comment 193:

Based on the coarse-grained lithology of the creek deposits, well construction information and water level data, discharge from Outfall 002 will infiltrate into the groundwater supplying domestic wells along Harshaw Creek. Figure 1 depicts Wells Along Harshaw Creek from Outfall 002 to Conceptual POC 4. Table 1 displays ADWR Registered Wells Along Harshaw Creek from Outfall 002 to Conceptual POC 4 and Wells with Connection to Surface Water.

ADEQ's Response:

The AZPDES program regulates the discharge of pollutants to surface waters. Based on the applicable SWQS, ADEQ sets numeric effluent limitations (Part I.A of permit) and narrative water quality standards (Part I.E of permit) in the permit. All discharges must meet these permit requirements. By complying with these permit limitations and standards, the discharges are protective of Alum Gulch and Harshaw Creek.

The AZPDES program does not have authority to regulate discharges to groundwater; however, ADEQ does regulate South32's discharges to groundwater through an Aquifer Protection Permit (APP). For more information about APP, see ADEQ's website:
<https://www.azdeq.gov/APP/ComplianceAssistance>.

Comment 194:

The discharge location for Outfall 002 is in Upper Harshaw Creek which is impaired.

ADEQ's Response:

For information on the location of Outfall 002, see ADEQ's response to comment 3.

Comment 195:

Lower Harshaw Creek is impaired and the ADEQ must complete a TMDL before it can issue a permit.

ADEQ's Response:

For information about the Harshaw Creek TMDL, see ADEQ's response to comment 4.

Comment 196:

Discharge data and actual extent of ongoing discharge must be included in calculating permit limits and waste load allocations.

ADEQ's Response:

For information regarding the extent of discharge data, see ADEQ's response to comment 5.

Comment 197:

The historic tailings represent a new source of pollutants as it is being used to hold new waste from new operations. Discharge from treatment of this [sic] historic tailings can't be discharged to Alum Gulch as it is impaired. ADEQ must acknowledge that the AMI facility is a New Source of discharge before issuing the Permit. As a new source, the mine must be subject to all modern performance standards and requirements of the Clean Water Act.

ADEQ's Response:

For information on "new source" and historic tailings, see ADEQ's response to comment 1.

Comment 198:

Sonoita Creek is a Waters of the US and will receive surface water from the discharge, however Sonoita Creek is impaired for zinc and the ADEQ must complete a TMDL for zinc impairment in Sonoita Creek. A waste load allocation must be performed by the ADEQ as required by the Clean Water Act to support restoration of the creek by not further contaminating it.

ADEQ's Response:

For information about Sonoita Creek, see ADEQ's response to comment 7.

Comment 199:

ADEQ must acknowledge that this mine will go into production during the time frame of this Permit and the waste stream will change over time.

ADEQ's Response:

For information about the mine going into production during the permit term, see ADEQ's response to comment 1.

Comment 200:

The Permit must be revised to require at least monthly monitoring of all Assessment Level Monitoring parameters listed in the Permit especially considering the waste stream will change over time due to the nature of the project.

ADEQ's Response:

For information about monitoring frequency, see ADEQ's response to comment 9.

Comment 201:

So what's in this discharge? What's in the groundwater? I just assumed to be potable. But no, it's not potable. There's lead permitted in the discharge. Lead's not allowed in drinking water. Arsenic, 12 times the drinking water standard. Barium, 49 times. Boron, 93 times the drinking water standard. Chromium, 10 times the drinking water standard. And nitrate isn't even regulated in the permit.

They're blasting shafts to get their shafts down and there's nitrate in the drilling fluids. And it's not even regulated in the permit. Thallium, the permit allows for 37 times the drinking water standard. Sulfate isn't even regulated in this permit and it has a secondary drinking water standard. And there's manganese. We all know it's manganese. It's not regulated in this permit to the point it should be. In conclusion, the connection between surface water, groundwater and domestic wells in the Harshaw Creek is a direct pathway for contaminants, including lead and zinc into the peat.

The Permit does not require the water quality of the discharge to be potable. Current levels in the Permit exceed the Primary Drinking Water Standards. If a Permit must be issued, the discharge must meet all Primary and Secondary Drinking Water Standards. The Permit must be revised to include testing of manganese and sulfate to protect Secondary Drinking Water Standards. There is a Health Advisory for Manganese which should be considered. Table 2 summarizes a comparison between the draft permit effluent limitations and Primary Drinking Water Standard, Public Health Goal or Health Advisory.

ADEQ's Response:

The AZPDES program sets effluent limitations based on surface water quality standards. The AZPDES program does not have the authority to set AZPDES permit limits based on drinking water standards, as the waterbodies referenced are not sources of drinking water. For information about manganese, sulfate, and drinking water standards, see ADEQ's response to comment 8.

Comment 202:

The connection between surface water, groundwater and domestic wells in the Harshaw Creek area has been demonstrated in the previous sections. There is a pathway for contaminants in the discharge, including lead and arsenic, into people. The ADEQ and the EPA have a duty to protect citizens against drinking contaminated groundwater. If Flint, Michigan was a mistake, this Permit is the opposite. If the Permit is granted, this will be permitted poisoning of the people by the agencies who have a duty to protect us. This violates ADEQ's own statutory duties, A.R.S. § 49-104(A)(1), (7), (9) and (10). ADEQ has ignored it's [sic] core obligations and responsibilities and should make every effort to correct it's [sic] actions and withdraw this Permit.

ADEQ's Response:

The permit contains effluent limitations based on surface water quality standards. All discharges must comply with the effluent limitations and narrative requirements in the permit. These limitations and requirements are set to ensure discharge is protective of the receiving waters. ADEQ is required to issue an individual AZPDES permit to a facility that meets all legal requirements, see ADEQ's response to comment 30.

The AZPDES program does not have authority to regulate discharges to groundwater; however, ADEQ does regulate South32's discharges to groundwater through an Aquifer Protection Permit (APP). For more information about APP, see ADEQ's website:

<https://www.azdeq.gov/APP/ComplianceAssistance>.

Comment 203
Andrew Gould
Written Comment

Comment 203:

My wife and I have lived in Lake Patagonia Ranch Estates for over 10 years. The town of Patagonia and Sonoita Creek have been the foci of our lives. We have been active members of the Friends of Sonoita Creek for 10 years and have been very involved in stream assessments on Sonoita Creek, both in The Nature Conservancy and in the State Park. The threat of pollution of our stream and Patagonia Lake are of great concern to us. We are counting on ADEQ to protect our water.

The first and most important thing for us to agree on is that the Hermosa project is not an expansion of an existing mine; it is a new and vastly larger mining operation and its impact on the environment will be vastly larger than anything that was there before.

ADEQ is not fulfilling its obligations under the Clean Water Act and A.R.S. § 49-204(A)(1), (7), (9) and (10). The proposed Permit would allow for dangerous discharges of mine water to Harshaw Creek, Alum Gulch, and Sonoita Creek. ADEQ takes the position that it need not prepare a TMDL analysis to regulate South32's discharges into these impaired surface waters so that water quality standards can be achieved. This violates the Clean Water Act.

South 32 is already in violation of the law by discharging wastewater without a current permit. A complete analysis of toxic contamination over proposed discharged water must be completed before a new permit is issued. In addition, testing and analysis more frequent than anything proposed must be completed right and independent agency. In view of its past record of pollution in its mining operations around the world South 32 cannot be trusted to regulate itself. ADEQ must revise the Draft Permit to require this important monitoring be done at least monthly.

ADEQ's Response:

For information about "new source", see ADEQ's response to comment 1. For information about TMDLs, see ADEQ's responses to comments 2, 4, and 7. South32's existing AZPDES permit is administratively continued, see ADEQ's response to comment 18. For information about monitoring frequencies, see ADEQ's response to comments 9 and 11. The Clean Water Act discharge permitting program, administered by ADEQ as the AZPDES program, is designed by law to require permittees to conduct monitoring, see ADEQ's response to comment 37.

Comment 204
Brooke Wolterstorff
Written Comment

Comment 204:

Leave our wetlands alone! We have few and far between wet areas in the southwest as it is. The wildlife needs that area to survive. These are places that cannot be easily or ever be replaced. Look at what was done to the area around the Panama Canal. Look at how people finally figured out the mistakes they made and how they are returning the area to its former natural conditions and actually improving the area around the canal benefitting the entire area for the wildlife and the canal. The value of the natural wetlands far outweighs the value of the mine.

ADEQ's Response:

ADEQ is committed to protecting human health and the environment. See ADEQ's responses to comments 19, 20, and 21. ADEQ is required to issue an individual AZPDES permit to a facility that meets all legal requirements, see ADEQ's response to comment 30.

Comment 205**Rabbi Nina Perlmutter****Written Comment****Comment 205:**

As a rabbi, college instructor in Environmental Ethics and "Eco-theology", I am extremely disappointed about Arizona Department of Environmental Quality's (ADEQ) plan to renew the Arizona Pollutant Discharge Elimination Permit (AZPDES) No. AZ0026387 for South32's Hermosa Project mine. My understanding is that this Permit would allow for dangerous discharges of mine water to Harshaw Creek, Alum Gulch, and Sonoita Creek, threatening the health of local residents and the environment in violation of the Federal Clean Water Act and Arizona's laws relating to surface water quality. The issuance of the Permit is also contrary to ADEQ's own rules which require that ADEQ "act to protect the environment", promote "the protection and enhancement of the quality of water resources", provide for the "prevention and abatement of all water and air pollution"; and "[e]nsure the preservation and enhancement of natural beauty" in our state. Please remember that your job is to enforce discharge provisions of the Clean Water Act in order to protect human health and the environment. Please do not issue this permit and please keep me updated on all aspects of this permit process.

ADEQ's Response:

ADEQ is committed to protecting human health and the environment. The permit complies with the Clean Water Act and Arizona state law. See ADEQ's responses to comments 19, 20, and 21. ADEQ is required to issue an individual AZPDES permit to a facility that meets all legal requirements, see ADEQ's response to comment 30.

Comment 206**Mark Willaman****Written Comment****Comment 206:**

As a property owner in Patagonia, AZ, I am strongly opposed to the renewal of the Arizona Pollutant Discharge Elimination Permit (AZPDES) No. AZ0026387 for South32 Hermosa, Inc.'s Hermosa Project mine. It seems that this permit violates both the Federal Clean Water Act and Arizona's surface water quality laws:

Environmental Threats: The permit would allow harmful discharges into Harshaw Creek, Alum Gulch, and Sonoita Creek, posing significant risks to local health and the environment. This action is in direct contradiction to ADEQ's duty to protect the environment and ensure water quality.

Legal Non-Compliance: The ADEQ seems to have neglected its responsibilities under the Clean Water Act, particularly in failing to update or prepare necessary Total Maximum Daily Load (TMDL) studies. These studies are crucial for restoring the health of already impaired waters like Harshaw Creek, Alum Gulch, and Sonoita Creek.

Specific Issues with Water Bodies:

Harshaw Creek: The permit would allow discharges of millions of gallons of mine water daily, which could exacerbate existing contamination with copper and acidity.

Alum Gulch: The permit would allow significant discharges that could increase contamination levels of various heavy metals.

Sonoita Creek: As a receiving body for tributaries Harshaw Creek and Alum Gulch, it is at risk, yet ADEQ has not completed the required TMDL studies for it.

The Hermosa Project's Scale: The Hermosa Project is a large-scale, modern industrial mine, not just a continuation of historical mining activities. As such, it should be subject to modern environmental standards and regulations.

Monitoring and Regulation Issues: There is a need for ADEQ to monitor additional contaminants like manganese and sulfate, which could affect human health and water infrastructure. The frequency of monitoring for various contaminants is considered too infrequent to effectively protect human health and the environment.

Public Health Concerns: The potential impact on the Town of Patagonia and its residents, who rely on simple chlorination of water, raises serious concerns about the health effects of contaminants like arsenic, cyanide, cadmium, lead, mercury, and uranium.

I urge ADEQ to reconsider the permit renewal, emphasizing the need for more stringent environmental protection and adherence to legal standards to prevent further contamination and environmental degradation.

What's the right thing to do? That's the bottom line. This community does not want the mine and did not vote for any of this. It is simply wrong to allow a company - a foreign company with a history of environmental issues, lawsuits, and destruction to local communities - to walz into the quiet town of Patagonia and destroy the quality of life for residents, pollute the ecosystem, and put at risk one of the most important and sensitive environmental and tourist regions in North America. Is this the "green economy" we want? We have a chance now to do the right thing - the future will thank us for making the right decision.

I am also including PARAs comments as part of my comment (attached).

ADEQ's Response:

ADEQ is committed to protecting human health and the environment. See ADEQ's responses to comments 19, 20, and 21.

For information about TMDLs, see ADEQ's responses to comments 2, 4, and 7. For information about "new source", see ADEQ's response to comment 1. For information about monitoring frequencies, see ADEQ's response to comments 9 and 11. For information about manganese and sulfate, see ADEQ's response to comment 8. ADEQ is required to issue an individual AZPDES permit to a facility that meets all legal requirements, see ADEQ's response to comment 30.

Comment 207
Katya Peterson and Pierre Landau
Written Comment

Comment 207:

As a family who has owned property off of Harshaw Road for a decades [sic], with the idea of eventually building a house on it, we object strenuously to the current rush to permitting for the Hermosa Mine project. Please note the mine is located only a stone's throw away from our property.

Two principal issues concern us:

(1) a discharge permit allowing water to flow into Harshaw Creek will sweep large amounts of heavy metals into the watershed used for Patagonia's drinking water. This is true whether or not the water itself is sourced from somewhere much deeper than surface water, since the whole area is heavily laden with metals, and the additional water will serve only to mobilize it.

(2) worldwide experience with manganese mining has shown major health issues related to manganese dust, which would be scattered not only adjacent to the mine site, but all along the ore transport route. While that route has not been finalized, the most likely options would still allow major contamination of significant portions of the Patagonia township area and all options would contaminate Harshaw Road. We strongly urge you to consider the opinions of the local residents and long-term taxpayers such as our family. The opinions of experts NOT associated with the applicant mining company should also be front and center in your deliberations. We urge you to deny South32 these permits!

ADEQ's Response:

For information regarding the transportation of pollutants downstream, see ADEQ's response to comment 20. For information about manganese, see ADEQ's response to comment 8. ADEQ is required to issue an individual AZPDES permit to a facility that meets all legal requirements, see ADEQ's response to comment 30.

Comment 208
Mary Normandia
Written Comment

Comment 208:

Please vote to deny the water rights permit. I moved to AZ to be part of this great naturally beautiful area. Don't kill me now!

ADEQ's Response:

ADEQ acknowledges your opposition to this permit. ADEQ is required to issue an individual AZPDES permit to a facility that meets all legal requirements, see ADEQ's response to comment 30.

Comment 209
Blue Evening Star
Written and Oral Comment

Comment 209:

My name is Blue Evening Star. I represent Friends of the Santa Cruz River, where I have served as an active board member for 16 years.

Friends of the Santa Cruz River was formed in 1991 to “ensure a continued flow of the river’s surface waters, promote the highest river water quality achievable, and to protect and restore the riparian ecosystem and diversity of life supported by the river’s waters.”

Our non-profit, all-volunteer group focuses on the portion of the river from its headwaters in the San Rafael Valley in Arizona, south into Mexico, and then north through Santa Cruz County to the Pima County line — in other words, the entire watershed. We work with riverside landowners, government agencies, and other citizens and community groups to keep the river flowing, its banks clean and green, and its environment bountiful to both wildlife and people.

Friends of the Santa Cruz River adamantly objects to the proposal from ADEQ to renew the Arizona Pollutant Discharge Elimination permit No. AZ0026387 for South32’s Hermosa Mine Project.

In order to uphold your mandate to protect local residents and the environment, ADEQ must determine these new facilities to be legal new sources of discharge into Harshaw Creek, Alum Gulch and Sonoita Creek — before issuing this renewed Permit.

As a new source , the mine is subject to all modern performance standards and requirements of the Clean Water Act.

I reference and incorporate the Patagonia Area Resource Alliance comments into my comments.

ADEQ’s Response:

For information regarding “new source”, see ADEQ’s response to comment 1.

Comment 210
Leanna Goose
Written Comment

Comment 210:

We cannot move from one heavily polluting industry to another. Mining to fix the climate crisis will be a grave mistake that we cannot afford to make. We all need clean water to survive, and the amount of water wasted to get all these minerals from the ground is unacceptable. Once that water is polluted with toxic contaminants from mining it will become poisonous to humans and all other living beings. We must think of the next generations as they will also need clean water to survive. In a world dealing with climate change clean water is becoming scarce [sic]. We have all watched as ancient rivers have begun to dry out before our eyes. Most of the water in our world is already heavily polluted we cannot afford to add to that problem exponentially through mining. STOP THIS MINE BEFORE IT STARTS! THINK OF OUR CHILDREN AND THE NEXT GENERATIONS!

ADEQ’s Response:

ADEQ is committed to protecting human health and the environment. See ADEQ’s responses to comments 19, 20, and 21. ADEQ is required to issue an individual AZPDES permit to a facility that meets all legal requirements, see ADEQ’s response to comment 30. The AZPDES program does not have the authority to regulate water quantity.

Comment 211
Cameron Falconer

Written Comment

Comment 211:

Hello, I am not a resident of Arizona however I spend quite a bit of time in the Patagonia area as my partner lives there. I will not repeat the information that PARA and other organizations and individuals have provided the AZDEQ regarding the South 32 Hermosa mine. It is abundantly clear that the area around Patagonia is a truly special place and is already heavily impacted by ongoing drought. The fact that this mine will consume so much water in this environment is deeply irresponsible. This is a separate issue to the questionable permitting process and lack of needed analysis on the impact of this mine on the natural and built environments of Santa Cruz County. Again, I point the AZDEQ to the information provided by PARA attached to this note.

ADEQ's Response:

The AZPDES program does not have authority to regulate water quantity, see ADEQ's response to comment 19.

Comment 212

Vanessa Register

Written and Oral Comments

Comment 212:

January 11th 2024

ADEQ #AZ0026387

Hermosa 32 Pollutant Discharge Permit

Good evening and Thank you for being here to listen to my concerns.

My name is Vanessa Register. I live at Lake Patagonia.

My concerns are for the record, the highest evidence, and will be submitted in writing and to be included in the minutes.

The very name of this application should be of great concern.

Pollutant Discharge

Your website goals and protections are:

To Protect and Enhance

Public Health and the Environment.

How can you as a board "Protect and Enhance" our Public Health and Environment [sic]?

How will this applications [sic] for Hermosa 32 Protect and enhance our public health and environment?

How has Hermosa 32 performed in the past?

Can their self testing be trusted?

I submit to you that they can not be trusted to Protect and Enhance our Public health and environment, this falls to you.

The Federal Clean Water Act, that you are charged with enforcing requires that discharged pollutants into our affected waters are:

Prevented, Reduced and Eliminated.

Does this application protect our waterways, our surface waters?

These protections must be Scienced [sic] Based, a rigorous systematic endeavor that builds and organizes knowledge in the form of testable predictions.

The TMDL, Total Maximum Daily Load:

Must account for "all" sources of the pollutants that cause the water to be listed.

Your data base, the science, in this application does not account for "all"

'All' the rivers and locations have not been tested or reported.

"Testable" Predictions

- 1. You need a Base, you do not have a current base of contamination, it is not included in this application. With out a base you can not say how much you can allow to enter and be safe.*
- 2. Unbiased sampling to ensure Total Maximum daily load of pollution to enter our surface water Shall not be sampled by H32 and not a month later.*

The discharge testing needs to be done by a third party, not the discharger H32, as submitted in this application.

Immediately sampled, not a week later as submitted in this application.

To know the contaminates [sic] that are being released the testing needs to be immediate, at several, predetermined locations to ensure the surface water quality in this permit is being met.

I ask you how are you going to change this application to ensure that "ALL: the pollutions do not exceed the maximum daily discharge and that "All" the locations are protected and enhanced?

Thank you

*I would like to add, that this is a new mine, new owner, new mineral being mined.
H 32 needs to apply for a new permit.*

ADEQ's Response:

A.A.C. R18-11-107 establishes antidegradation requirements to ensure that existing surface water quality baselines are maintained and protected. Upper Alum Gulch, Middle Alum Gulch, and Lower Harshaw Creek are intermittent waters. Therefore, the discharges from the January Mine Hermosa Project will be to waters which receive Tier 1 antidegradation protection per A.A.C. R18-11-107.01(A).

Per A.A.C. R18-11-107.01(A)(3), Tier 1 antidegradation review requirements are satisfied for a point-source discharge regulated under an individual AZPDES permit to an ephemeral water, effluent dependent water, intermittent water, or a canal listed in Appendix B, if water quality-based effluent limitations designed to achieve compliance with applicable surface water quality standards are established in the permit and technology-based requirements of the Clean Water Act for the point source discharge are met.

Effluent quality limitations and monitoring requirements have been established under the permit to ensure that the discharge will meet the applicable water quality standards in the receiving waters. As long as the permittee maintains consistent compliance with these provisions, the designated uses of the receiving water will be protected, and the facility will meet currently applicable antidegradation requirements under A.A.C. R18-11-107.

ADEQ conducts sampling across the state to assess the health of Arizona surface waters against established standards according to CWA § 305(b) and § 303(d). ADEQ continues to monitor Alum Gulch and Harshaw Creek to determine if new impairments exist, current impairments remain, or the waterbody is meeting standards. For information about ADEQ's monitoring efforts and data, see <https://www.azdeq.gov/SW-monitoring-n-assessment>.

The Clean Water Act discharge permitting program, administered by ADEQ as the AZPDES program, is designed by law to require permittees to conduct monitoring, see ADEQ's response to comment 37. For information about TMDLs, see ADEQ's responses to comments 2, 4, and 7. For information regarding "new source", see ADEQ's response to comment 1. ADEQ is committed to protecting human health and the environment. See ADEQ's responses to comments 19, 20, and 21.

Comment 213
Jacob Thompson
Written Comment

Comment 213:

Sponsoring the destruction of delicate, unique, and protected areas is a foolish and short sided choice. The town of Patagonia is a flourishing center that doesn't need "boosts in the economy" or at least not the one provided by this mining operation. In the long term the continued success of the natural ecosystem will determine OUR success. Additionally, continued access to clean water should be regarded as a human right, and no company or corporation should be tended to before the general public. I understand the demand for precious metals and minerals but possibly we can make advancements in repurposing/recycling older materials, maybe electronic buy back programs, or other lass [sic] consumptive methods of resource extraction can be invested in rather than tearing this entire mountain down and destroying the Harshaw creek drainage.

ADEQ's Response:

The AZPDES program does not have the authority to consider economic impact as part of a permitting decision, see ADEQ's response to comment 30. The January Mine Hermosa Project is an underground mining operation and will not require removal of the mountain as some forms of surface mining would, such as mountaintop removal mining. ADEQ is required to issue an individual AZPDES permit to a facility that meets all legal requirements. The permit ensures the protection of Harshaw Creek, Alum Gulch, and downstream waters. ADEQ is committed to protecting human health and the environment. See ADEQ's responses to comments 19, 20, and 21.

Comment 214
Edward Pirl
Written and Oral Comments

Comment 214:

Ed Pirl, Board Member Calabasas Alliance, Rio Rico

Hello. I want to take this opportunity to share my opposition to the renewal of the Arizona Pollutant Discharge Elimination Permit for the South32 Hermosa project.

The permit, which would allow discharges of mine water into Harshaw Creek, Alum Gulch and Sonoita Creek poses a threat to both the health of the public and the environment. Prior to renewing this permit the ADEQ must prepare a TMDL study and necessary waste load allocations as required by the Clean Water Act as well as a planning process for achieving water quality standards. So that the waters of Harshaw creek, Alum Gulch and Sonoita creek can be returned to good health.

The significant discharges of mine water into the tributaries leading to Sonoita Creek creates a significant issue given that Sonoita creek is impaired for zinc. ADEQ must complete a TMDL for zinc for Sonoita creek prior to renewing the permit The Clean Water Act also requires a waste load allocation to be performed for the discharges to Sonoita Creek so that South32's discharges will not further

contaminate surface waters downstream. ADEQ must take measures to uphold its duty to "act to protect the environment."

ADEQ must recognize the Hermosa project to be a new mine and a new source of discharge. As such it is subject to all modern performance standards and requirements of the Clean Water Act. There is ample evidence to support this claim. The current project is in no way similar to the much smaller project of decades past.

Finally, to protect the quality of drinking water, public health, the environment, and the ecosystems in the region, Manganese and sulfate must be monitored, along with the monitoring for other toxins like lead, arsenic, mercury, cyanide, and uranium on a monthly basis. At present the monitoring is far too infrequent. It is essential that monitoring take place MONTHLY if not more often. It is imperative that ADEQ revise the draft permit to require more frequent testing.

ADEQ exists to protect and improve the environment of Arizona, to provide for the prevention and abatement of ALL water and air pollution. You must step up and safeguard the water of this county and the environment of all who live here, humans, domestic, wild and endangered creatures. As Arizonans we deserve clean air and water and we expect our state agencies to remain true to their mandate and protect the environment.

ADEQ's Response:

For information about TMDLs, see ADEQ's responses to comments 2, 4, and 7. For information about "new source", see ADEQ's response to comment 1. For information about monitoring frequencies, see ADEQ's response to comments 9 and 11. For information about manganese and sulfate, see ADEQ's response to comment 8. ADEQ is committed to protecting human health and the environment. See ADEQ's responses to comments 19, 20, and 21. ADEQ is required to issue an individual AZPDES permit to a facility that meets all legal requirements, see ADEQ's response to comment 30.

Comment 215

Laura S Monti

Written Comment

Comment 215:

I express My [sic] vehement opposition to the Proposed Renewal of AZPDES Discharge Permit No. AZ0026387 to South32 Hermosa, Inc. for all the the [sic] reasons presented in the attached document of objections by the Patagonia Area Resource Alliance. As a nurse practitioner, human and environmental health professional I urge you to assert your responsibility for the health of humans, species and our whole Santa Cruz watershed and deny the permit. This "dewatering" in the Patagonia watershed where I live is an untested proposition with inadequate independant [sic] monitoring. This is a new modern industrial mine I urge you to apply current modern standards of water quality and the precautionary principle. If approved S32 and ADEQ violate fundamental environmental justice ethics to allow this wealthy international industrial mine with a lousy track record to operate under old substandard water quality criteria. In my extensive clinical practice with children and pregnant women with lead poisoning and other toxic substances I witnessed the horrific effects of brain damage and mental health issues that lead poisoning causes in developing children. Do the right thing and deny this permit proposal.

ADEQ's Response:

ADEQ is committed to protecting human health and the environment. See ADEQ's responses to comments 19, 20, and 21. The AZPDES program does not have the authority to regulate mine dewatering, see ADEQ's response to comment 19. For information about "new source", see

ADEQ's response to comment 1. ADEQ notes that the water quality-based effluent limitations (WQBELs) in the permit are more stringent than the new source performance standards (NSPS). For information about environmental justice, see ADEQ's response to comment 41. The AZPDES program does not have the authority to consider compliance history with other permits when making a permitting decision. ADEQ ensures all AZPDES permittees comply with their AZPDES permits, see ADEQ's response to comment 30 for more information. ADEQ is required to issue an individual AZPDES permit to a facility that meets all legal requirements.

Comment 216
Lori Bryant
Written Comment

Comment 216:

Water is life. A foreign mining company making a profit by sucking up the groundwater and disrupting springs supply and upsetting the delicate balance of water patterns in the SONORAN DESERT is not a good idea. We already are experiencing unprecedented drought cycles and pumping water out of the ground for a new mining project makes no sense whatsoever. And dumping huge amounts of underground water day after day into the creeks and disrupting entire ecosystems along the creeks is criminal in its potential to upset the biodiversity of our land. PLEASE do not permit this. Thank you for considering all of us and not the fortune seekers of foreign companies.

ADEQ's Response:

The AZPDES program does not regulate groundwater pumping, see ADEQ's response to comment 19. ADEQ is required to issue an individual AZPDES permit to a facility that meets all legal requirements. See ADEQ's response to comment 30.

Comment 217
Karene Bennett, Global Community Communications Alliance
Oral Comment

Comment 217:

Thank you for all your comments. This has been an amazing evening for me. I was relatively not versed in this issue, but I have comments that I want to share with you. My name's Karene Bennett.

I'm a minister and a chaplain with our local hospice, Solstice Hospice. I do oppose the ADEQ's proposed renewal of this discharge permit, and I do want my comments to be referenced to have the reference of the PARA objection, so I hope that will be included. What I see happening is private interest versus public good. This is a moral issue for us. This is a time of reckoning, and we have to determine what's right and what's wrong. The compass that I use is the Ten Commandments. Do you put God first and do you treat your neighbor as yourself?

These are basic ways of living and understanding what's right and what's wrong. The question is, is the Hermosa Project an endeavor to serve the greater good, or is it the private interest? You can look at it in many different ways, but what I see about it is that every step of the project itself is a decision point. So we're at a decision point right now, whether this permit will allow the South32 to continue, or whether we're going to have to take another, have ADEQ look at it again and go further and deeper. This is a very serious issue and it impacts the local community. It doesn't seem to address, the permit does not seem to address the impact of this project on our local environment. It doesn't. So if it doesn't, there's a point of is it right or is it wrong?

And at this point it seems to be wrong. The decisions that everyone makes has consequences. Every decision we make has a consequence. This would be a very serious consequence. Hopefully the consequence is that we take another look. The good that comes out of our meeting tonight is a good that should raise the whole issue of whether this mine is going to continue and whether we would have the impacts, we would allow them to happen.

So we're looking at goodness. We're looking at right motive. What is our motive in being here? What is their motive? If their motive is profit, then that's self-interest. If their motive is the greater community and it's health and welfare, that's ADEQ.

ADEQ's Response:

ADEQ is committed to protecting human health and the environment. See ADEQ's responses to comments 19, 20, and 21. ADEQ is required to issue an individual AZPDES permit to a facility that meets all legal requirements, see ADEQ's response to comment 30.

Comment 218

Leslie Schupp

Written Comment

Comment 218:

Please fo [sic] not issue an antiquated permit for the S 32 mine. I live 3 miles below the mine on Alum Gulch which is my water supply. Arizona should not be issuing permits that will dry ip [sic] our waters and pois p n [sic] water and air. I agree eith [sic] PARA.

ADEQ's Response:

The permit issued for the Hermosa mine is a modern, up to date permit containing all required limits, monitoring, recordkeeping and reporting. The AZPDES program does not have authority to regulate groundwater pumping. See ADEQ's response to comment 19. ADEQ is committed to protecting human health and the environment. See ADEQ's responses to comments 19, 20, and 21. ADEQ is required to issue an individual AZPDES permit to a facility that meets all legal requirements, see ADEQ's response to comment 30.

Comment 219

Louis Dombroski

Written Comment

Comment 219:

I am writing to urge you to DENY the proposed AZPDES Permit No. AZ0026387 for the January Hermosa Mine Project.

I spent the last four years (through October 2023) living in Patagonia while I worked at Tucson Audubon's Paton Center for Hummingbirds.

Sonoita Creek is the life blood of the town of Patagonia. The pumping of millions of gallons of water into Harshaw Creek, which flows into Sonoita Creek, could have devastating consequences for the environment and for the community. Nature study, and especially birdwatching or "birding" are vitally important to the area economy, and any environmental changes that would make the area less appealing to birders would harm the community. The impact of releasing huge amounts of water into an ephemeral/intermittent creek will bury springs and irrevocably change the landscape in ways that will

make it less appealing to birders. Many springs and seeps in the Patagonia Mountains could be harmed by the cone of depression in the water table caused by pumping so much water into Harshaw Creek. Thank you for your consideration of my concerns, which are shared by many birders throughout the country.

ADEQ's Response:

The AZPDES program does not have authority to regulate groundwater pumping. See ADEQ's response to comment 19. ADEQ is committed to protecting human health and the environment. See ADEQ's responses to comments 19, 20, and 21. ADEQ is required to issue an individual AZPDES permit to a facility that meets all legal requirements, see ADEQ's response to comment 30.

Comment 220

MagiCa Castillo

Written and Oral Comments

Comment 220:

My Spiritual cosmic name is MagiCa and I am an indigenous man originally from Los Angeles but moved to Rio Rico at Avalon Gardens about 10 years ago. I am a human rights advocate, change agent for global change, and a spiritual warrior aligned with the spiritualution movement. I think the discharge permit to South 32 Hermosa Project should not be granted. ADEQ should not allow the discharge of heavy metals and pollutants into our waters. ADEQ must not allow the harm of us, our loved ones, and Mother Earth, this sacred land. Water is life, water is sacred, human life is sacred. The beautiful laws of virtue and morality are written in our hearts by the Creator. I challenge all ADEQ employees to think about the person you love the most being effected [sic] by pollutants and how you would feel about that. I'm sure you are all good people with loving souls but know who you are working for and what they are about. You as employees may not be able to make changes within the company but you have the power to quit the job. South 32 mining operation will not benefit anyone in our community, it will only benefit the pockets of the men in power who have no real regard for human life. I ask ADEQ, how you can grant a permit to any company who cannot guarantee % 100 [sic] safety, especially when the ramifications of failure are catastrophic to the environment, the animal kingdom and human life. The Patagonia Area Resource Alliance is making comments regarding this Draft Permit. By my reference to them, I now request you incorporate their comments into my comments.

ADEQ's Response:

ADEQ is committed to protecting human health and the environment. See ADEQ's responses to comments 19, 20, and 21. ADEQ is required to issue an individual AZPDES permit to a facility that meets all legal requirements, see ADEQ's response to comment 30.

Comment 221

Matthew Nelson, Arizona Trail Association

Written Comment

Comment 221:

As the organization responsible for the protection and maintenance of the Arizona National Scenic Trail, we object to the Arizona Department of Environmental Quality's (ADEQ) plan to renew the Arizona Pollutant Discharge Elimination Permit (AZPDES) No. AZ0026387 for South32's Hermosa Project mine. Our primary concerns are impacts to groundwater health on the Coronado National Forest, and within the Town of Patagonia – both of which are vital resources supporting the Arizona Trail.

The proposed permit would allow for dangerous discharges of water into Harshaw Creek, Alum Gulch, and Sonoita Creek, potentially compromising the health of local residents and public lands nearby. This may be in violation of the Federal Clean Water Act and Arizona's surface water quality laws. The issuance of the permit is also contrary to ADEQ's own rules which require ADEQ to:

- act to protect the environment*
- promote the protection and enhancement of the quality of water resources*
- provide for the prevention and abatement of all water and air pollution*
- ensure the preservation and enhancement of natural beauty in our state*

The Arizona Trail Association recognizes the importance of the mining industry to maintain a diversified economy within rural communities. In addition, we are supportive of mining projects that are socially and environmentally responsible – especially when the project proponent can offset their negative impacts through proper mitigation measures. We also understand the Biden Administration has prioritized this particular project to support the harvesting of critical minerals. However, the negative impacts to water resources on public lands and within the local community are alarming and require further hydrological analyses and sufficient monitoring protocols before the AZPDES is issued.

Impacts to springs and ephemeral streams in the Patagonia Mountains increase the risk of uncharacteristic wildfires, compromising forest health, wildlife, and Arizona's outdoor recreation industry, which contributes over \$18 billion to our state's economy each year. Additionally, if groundwater levels continue to drop or contain harmful contaminants, the Town of Patagonia's very sustainability may be threatened. As one of the most important gateway communities along the Arizona Trail, our organization is very invested in preserving the quality of life within the Town for locals and visitors alike.

We trust ADEQ to enforce the discharge provisions of the Clean Water Act to protect human health and the environment as required by law. Please comply with Total Maximum Daily Load (TMDL) rules required by the Clean Water Act so that the contaminated waters of Harshaw Creek, Alum Gulch, and Sonoita Creek can be returned to good health.

The Arizona Trail Association (ATA) is an Arizona nonprofit organization whose mission is to protect, maintain, enhance, promote and sustain the Arizona Trail as a unique encounter with the natural environment. The 800-mile trail spans the length of the state from Mexico to Utah, connecting deserts, mountains, canyons, forests, communities and diverse peoples. It was designated a State Scenic Trail in 2006 and a National Scenic Trail in 2009. Patagonia is one of 19 designated Arizona Trail Gateway Communities. The ATA works in collaboration with county, state and federal land management agencies, municipalities, volunteers, industry partners, elected representatives, private property owners, and many others to ensure the protection and sustainability of the Arizona Trail for the benefit of all.

Thank you for considering our objection, and please keep me informed throughout the permitting process.

ADEQ's Response:

For information about TMDLs, see ADEQ's responses to comments 2, 4, and 7. ADEQ is committed to protecting human health and the environment. See ADEQ's responses to comments 19, 20, and 21. The AZPDES program does not have authority to regulate discharges to groundwater; however, ADEQ does regulate South32's discharges to groundwater through an

Aquifer Protection Permit (APP). For more information about APP, see ADEQ's website:
<https://www.azdeq.gov/APP/ComplianceAssistance>.

Comment 222
Mark Berg
Written Comment

Comment 222:

I object to the Arizona Department of Environmental Quality's proposal to renew the Arizona Pollutant Discharge Elimination Permit for the South 32's Hermosa Project mine until the following issues are resolved:

- 1. The discharge location is not in Lower Harshaw Creek, as ADEQ claims, but is actually constructed in Upper Harshaw Creek which is listed as impaired under Arizona's Clean Water Act 303(d)list. The 20-year-old [sic] Total Maximum Daily Load analysis must be updated before the permit can be renewed. Also, impairments in Lower Harsahw [sic] Creek must be acknowledged and a TMDL be prepared.*
- 2. The outdated TMDL for Alum Gulch must be updated and a new study completed on the new lead impairment before the permit is renewed.*
- 3. ADEQ must complete a TMDL for the zinc impairment in Sonoita Creek before renewing the permit.*
- 4. ADEQ must revise the Draft Permit to required monitoring for manganese and sulfate to protect the drinking water for the Town of Patagonia. The permit must require this monitoring be done at least monthly.*

ADEQ's Response:

For information about the location of Outfall 002, see ADEQ's response to comment 3. For information about TMDLs, see ADEQ's responses to comments 2, 4, and 7. For information about manganese and sulfate, see ADEQ's response to comment 8. For information about monitoring frequencies, see ADEQ's response to comments 9 and 11.

Comment 223
Rebecka Meyers
Written Comment

Comment 223:

In reading the proposed Arizona DEQ permitting process for Hermosa South 32 water treatment and discharge, it appears there are no transparent plans for monitoring and/or remediation of high sulfate levels in the water released into Harshaw Creek and Alum Creek. Because public South 32 documents already report that their first water treatment plan [sic] at the mine site is already having to remove excess sulfate from water at the mine site, how is it possible that this is not acknowledged and that there are no requirements for future monitoring and regulation of sulfate concentrations in the effluent water?

After acquiring our property on [sic] at 360 Harshaw Creek we have discovered significant issues with extremely high sulfate groundwater levels in the Harshaw Creek drainage; our current well on Harshaw Creek consistently tests sulfate levels of 2600-2800. EPA recommends sulfate levels <250 for human consumption, so all of our well water must already by [sic] treated by RO/nanofiltration. Introduction of large volumes of high sulfate water into the aquifer could make this problem worse and make our well unusable. Our horses drink out of Harshaw Creek on our property; cattle on Harshaw Creek Coronado National Forest cattle leases rely on this water source. There are multiple livestock resources that recommend sulfate levels <1000 for livestock. When these levels are exceeded multiple sources

document that the livestock will have chronic diarrhea, poor weight gain, and dehydration of young animals. And yet livestock use is one of the acknowledged uses of the effluent water... how is this possible without monitoring sulfate levels? I realize that EPA considers sulfate a secondary contaminant, but, it is well documented that values in the range of sulfate measured in our well water on Harshaw creek (ie sulfate of 2600-2800) are so extremely high they will make people and animals sick!).

Please add requirements to the ADEQ permitting process for monitoring and regulation of sulfate levels in the effluent water into Harshaw Creek compatible with keeping us, and our livestock, from getting sick.

ADEQ's Response:

For information on sulfate, see ADEQ's response to comment 8.

Comment 224
Patty Willis
Written Comment

Comment 224:

I am asking you not to go ahead with the mining project. It will severely diminish a beautiful area that needs to be with us for the next generations. Please look at the long view of keeping the beauty of this Earth. The wonderful town of Patagonia will be harmed by this as well---and will suffer with contaminated water and a diminished environment. Please think of future generations and don't go ahead with this mining project!

ADEQ's Response:

ADEQ is committed to protecting human health and the environment. See ADEQ's responses to comments 19, 20, and 21. ADEQ is required to issue an individual AZPDES permit to a facility that meets all legal requirements, see ADEQ's response to comment 30.

Comment 225
Jeanette Joy
Written Comment

Comment 225:

I am extremely concerned about the detrimental effect the South 32 mine will have on the health of the surrounding community and the environment. The area is an extremely biodiverse area with many threatened and endangered species present. I am including PARAs comments as part of my comments. Please see the attached file. Thank you.

ADEQ's Response:

ADEQ is committed to protecting human health and the environment. See ADEQ's responses to comments 19, 20, and 21.

Comment 226
James Wolfe
Written and Oral Comments

Comment 226:

I moved to this area for the incredible, rich, and diverse natural environment that has persevered here

in spite of the harms perpetrated against it for well over a century by mineral extraction. We all know the General Mining act of 1872, written when "mining" was usually a mule and a prospector, is WOEFULLY unsuited to regulate 21st-century industrialized mining.

The same can be said of the proposed renewal of the A Z P D E S Discharge Permit renewal for South32's Hermosa Mine.

For starters, the ORIGINAL permit is contrary to ADEQ's mission and vision. I got this from its website last night:

"To protect and enhance public health and the environment in Arizona: ...through consistent, science-based environmental regulation and clear, equitable engagement and communication".

While I appreciate ADEQ's engagement and communication, I do not feel that it is applying "consistent, science-based environmental regulation" in the case of South32's Hermosa Mine's A Z P D E S permit and its renewal.

In particular, the lack of concern for establishing a realistic T D M L [sic] is astonishing. I'm not great in math, but I did the calculation for the disparity between the original permit's 172,000 Gallons per Day allowance... and the proposed wastewater discharge level of 6.48 MILLION gallons per day that South32 would like to dump into Harshaw Creek.

That 6.48 million GPD that is proposed to be dumped into Harshaw creek is 37 times the volume of the permissible level of waste water discharge into Alum Gulch granted by the existing permit. Yes, I understand the existing permit is for "exploratory" purposes but we all know the adage: "the camel's nose under the tent"! Both Alum Gulch and Harshaw Creek feed into the Sonoita Creek watershed which then runs thru the town of Patagonia on its way to the Lake

Regardless of treatment, the magnitude of the increased volume and movement of mine waste water, in concert with the chemical action of the highly acidic PH on the mineralized geology and legacy mine tailings, could release untold heavy metals into an already polluted watershed. Even IF the permissible levels of SOME of the heavy metal pollutants are met... and I would remind the audience that contaminants like manganese and sulfates are not regulated by the TDML [sic]... the sheer volume of mine wastewater interacting with the mineralized geology can lay down heavy metal pollutants over time.

Also of great concern to me is that the Hermosa Mine is not being regulated as a Brand New Mine. One only has to look at South32's elevation view graphic of the Hermosa mine site to see this. While it may share the same footprint of the historic mine, the new deposits of Zinc and Manganese that are proposed to be mined are thousands of feet below the original mine's depth and should be considered a new mining operation subject to modern requirements of the Clean Water Act.

I urge the ADEQ to undertake a more rigorous "scientific based study" to establish a realistic TDML [sic] for the proposed Hermosa Mine and affected environs before proceeding to grant a renewal of A Z P D E S Discharge Permit # A Z O 0 2 6 3 8 7

ADEQ's Response:

The AZPDES program regulates the water quality of the discharge. The AZPDES program does not have the authority to regulate the volume of water discharged. The permit authorizes discharges to Alum Gulch and Harshaw Creek and contains effluent limitations and monitoring requirements to protect the water quality of Alum Gulch and Harshaw Creek, including ensuring a pH that will protect the waters. For information about TMDLs, see ADEQ's responses to comments 2, 4, and 7. For information about manganese and sulfate, see ADEQ's response to comment 8. The AZPDES program does not have the authority to regulate the transportation of pollutants downstream, see ADEQ's response to comment 20. For information about "new source", see ADEQ's response to comment 1.

Comment 227
Miriam Gilbert
Written Comment

Comment 227:

I strongly urge AZDEQ to deny the AZPDES Permit no. AZ0026387 January Mine Hermosa Project. I have lived in Patagonia since 1988. The health and prosperity of Patagonia are tied to the well-being of two areas of interest: the Patagonia Mountains and the Harshaw/Sonoita Creek watershed. These two areas are the source of our water, clean air and world renown biodiversity. If the water in these areas is drained away and polluted, Patagonia and the surrounding area would become inhospitable to life as we know it. Thank you for denying Permit no. AZ0026387 until much more testing of the existing waterways is performed and we can be assured our water will not be contaminated in Patagonia and Santa Cruz County, AZ.

I am also including PARA's comments as part of my comment.

ADEQ's Response:

The AZPDES program does not have the authority to regulate groundwater pumping, see ADEQ's response to comment 19. ADEQ is committed to protecting human health and the environment. See ADEQ's responses to comments 19, 20, and 21. ADEQ is required to issue an individual AZPDES permit to a facility that meets all legal requirements, see ADEQ's response to comment 30.

Comment 228
Julie Holding
Written Comment

Comment 228:

I request that ADEQ deny the application for an Arizona Pollutant Discharge Elimination Permit, No. AZ0026387, for the South 32 Hermosa Project mine in the Patagonia Mountains.

The proposed permit would allow mine waste water to be discharged into Harshaw Creek, Alum Gulch, and Sonoita Creek. As a resident of the Town of Patagonia who drinks water provided by Town municipal wells, I am concerned to learn that the surface waters of Sonoita Creek are already impaired by zinc pollution. I am concerned that requirements of the Clean Water Act to meet existing surface water quality standards in Sonoita Creek have not been met, specifically, that ADEQ is required to prepare Total Maximum Daily Load (TMDL) studies for Sonoita Creek and has not done so.

I am concerned about reports that ADEQ has allowed mine waste water to be discharged into Harshaw Creek, for months, even though the last permit for surface pollutant discharge expired months ago. I am

concerned that this mine waste water currently being discharged, and proposed future mine waste water, may contain manganese, sulfates, arsenic, cyanide, cadmium, lead, mercury, and uranium. I am concerned that these pollutants discharged into Harshaw Creek may make their way into Sonoita Creek, and may infiltrate the Town of Patagonia's water wells and the water that my neighbors and I drink.

I am also concerned that ADEQ plans to issue a permit that would not require monthly, or more frequent, water monitoring for elevated contaminants such as manganese, sulfates, arsenic, cyanide, cadmium, lead, mercury, and uranium.

Finally, I do not understand why the historic Trench Camp mine tailings would be allowed to discharge into Alum Gulch—up to 172,000 gallons of mine waste water per day. I do not understand why surface water pollution from a historic mine is not being fully abated to improve water quality. And I do not understand why a permit is proposed to be issued for a new mine to pollute surface waters of Harshaw Creek and Sonoita Creek with up to 6.48 million gallons of mine waste water per day.

Patagonia Area Resource Alliance's comments about this application are attached and included as part of my comments. Thank you for this opportunity to submit my comments.

ADEQ's Response:

ADEQ is committed to protecting human health and the environment. See ADEQ's responses to comments 19, 20, and 21. For information about TMDLs, see ADEQ's responses to comments 2, 4, and 7. South32 has been discharging as authorized by their previous AZPDES permit which was administratively continued, see ADEQ's response to comment 18. For information about manganese and sulfate, see ADEQ's response to comment 8. For information about monitoring frequencies, see ADEQ's response to comments 9 and 11.

The permit contains effluent limitations and monitoring requirements for 32 different regulated pollutants, including many of the pollutants identified in this comment, to protect the water quality of Alum Gulch and Harshaw Creek. The AZPDES permit requires any discharged water to be treated to meet effluent limitations. ADEQ is required to issue an individual AZPDES permit to a facility that meets all legal requirements, see ADEQ's response to comment 30.

Comment 229

Wendy L. Islas

Written Comment

Comment 229:

I am submitting my objection to the proposal from the Arizona Department of Environmental Quality (ADEQ) to renew the Arizona Pollutant Discharge Elimination Permit (AZPDES) No. AZ0026387 for South32's Hermosa Project mine. Of grave concern is the contamination of our surface waters in Harshaw Creek, Alum Gulch, and Sonoita Creek. These surface waters are an integral part of the Sky Islands and the entire ecosystem in Santa Cruz County. These surface waters are far-reaching in the health of the biodiversity, the ecosystem, and those who reside in Santa Cruz County, human and wildlife.

According to the ADEQ's website, "Water quality standards play a central role in the successful implementation of Arizona's surface water quality management programs as required by federal Clean Water Act (CWA) and Arizona's Surface Water Protection Program (SWPP) as described in the Arizona Administrative Code Title 18, Chapter 11."

"Water quality standards include:

Define water quality goals for surface waters in Arizona

Designate uses to be protected in Arizona's surface waters

Prescribe criteria to maintain and protect surface water quality for the designated uses

Provide the measure by which to assess the water quality of Arizona's rivers, streams and lakes

Provide the regulatory basis for establishing load allocations in total maximum daily load (TMDL) analyses

Provide the regulatory basis for establishing water quality-based discharge permits on point sources

Inform efforts to mitigate or eliminate non-point source pollution and measure effectiveness."

The Federal Clean Water Act and Arizona Revised Statutes provide governance to protect the surface waters noted above in Santa Cruz County, Arizona. The ADEQ is required to abide by these federal and state laws which mandate ADEQ's responsibility to maintain the health of these surface waters.

As reported by the Arizona Department of Water resources at the January 10, 2024, Santa Cruz County Active Management Meeting, Santa Cruz County has been designated as being in an extreme drought. This emphasizes the need to ensure our surface waters are healthy and protected. With South32 discharging over 6.2 million gallons per day, this places this "extreme drought" region in dire jeopardy.

Arizona Governor [sic] Hobbs, just this week made statements and the need to protect Arizona's waters and update Arizona's water laws. TRANSCRIPT: Governor Hobbs 2024 State of the State Address | Office of the Arizona Governor (azgovernor.gov) Moreover, in 2023 she commissioned the Governor's Water Policy Council. This Council recently published recommendations regarding Arizona's waters on November 29, 2023. SDirector_P23112914380 (azgovernor.gov). These recommendations emphasize the need for you to pause this permit for South32, or at the very least, modify the permit.

I urge you to revise the draft permit to require monitoring for manganese and that you articulate what standards you are using for manganese mining to ensure the protection of the health of humans and the watersheds in Santa Cruz County, Arizona. I urge you to revise the draft permit to include regular contaminant monitoring monthly rather than quarterly. I urge ADEQ to complete new, and in some cases, updated Total Maximum Daily Load Total (TMDL) studies for upper and lower Harshaw Creek, Alum Gulch, and Sonoita Creek to ensure the health and safety of these surface waters. I urge you to acknowledge and state that South32 is not just doing continuation of historical mining. New mining activity is happening on a historic site which requires the ADEQ to treat this as a new source of discharge. As a new source, this mine is required to abide by modern performance and standards and requirements of the Clean Water Act. South32 cannot use their described and practiced "next-generation mining technology" in a historic mine, but rather, it is new mining and new drilling. Their practices are not currently in use in any other mining in the United States. South32 itself purports this is a new type of mining, and since it is a new form of mining, it is subject to utmost scrutiny.

I am including in my objection the Patagonia Area Resource Alliance (PARA) objection to the proposal from the Arizona Department of Environmental Quality (ADEQ) to renew the Arizona Pollutant Discharge Elimination Permit (AZPDES) No. AZ0026387 for South32's Hermosa Project mine. I support the objection and comments contained therein.

I urge you to abide by the Federal Clean Water Act and the Arizona Revised Statutes which govern the ADEQ requirements.

Thank you for your time and consideration in this most crucial matter. The current and future health of Santa Cruz County, Arizona residents and watersheds is at stake.

ADEQ's Response:

ADEQ acknowledges the drought conditions in Santa Cruz County, Governor Hobbs' 2024 State of the State Address comments regarding water resources, and the Water Policy Council's recommendations. However, the AZPDES program does not have the authority to regulate groundwater pumping, see ADEQ's response to comment 19. Generally, groundwater pumping is regulated by the Arizona Department of Water Resources (ADWR). The Water Policy Council's recommendations are specific to the Arizona Groundwater Management Act and ADWR and these recommendations will not impact the AZPDES program.

For information about manganese and sulfate, see ADEQ's response to comment 8. For information about monitoring frequencies, see ADEQ's response to comments 9 and 11. For information about TMDLs, see ADEQ's responses to comments 2, 4, and 7. For information about "new source", see ADEQ's response to comment 1. ADEQ is required to issue an individual AZPDES permit to a facility that meets all legal requirements, see ADEQ's response to comment 30.

Comment 230
Anastasia Rabin
Written Comment

Comment 230:

The beauty and ecological importance of Arizona's remaining intact natural areas is far more valuable and important than anything this mine will produce, be it jobs, mineral wealth, or revenue. It is time for our state to adopt sane water policies that will protect what remains of this critical and very strained resource. Arizona needs to change the way that water is valued and used or we will simply squander what is left and permanently destroy what remains of our iconic landscapes and enviable quality of life.

ADEQ's Response:

The AZPDES program does not have the authority to consider economic impact as part of a permitting decision, see ADEQ's response to comment 30. ADEQ is committed to protecting human health and the environment. See ADEQ's responses to comments 19, 20, and 21.

Comment 231
Donna Hutchinson-Muri
Written Comment

Comment 231:

Having spent much time hiking and investigating on my own these areas I am certain without any doubt or hesitation, that the Hermosa Project will continue to rape the ecology of the Patagonia mountains and surrounding life in all forms. The destruction of plant life due to grading new and existing roadways, the abundant use of water to control dust and supply the "projects" so called exploratory mining goals will not only contaminate the underground waters, it will also inevitably result in extreme loss of needed habitat springs and seeps. WATER is precious in our deserts, it is more precious than what potentially

could be mined. The Patagonia area is a haven for wildlife due to the existence of water. People come from all over the world to view over 200 species of birds alone! It is past time that mankind take [sic] into account greedy actions that impact other creatures [sic] survival. The Hermosa Project is an example of such greed. I sincerely hope that AZ Dept of Environmental quality will live up to the name and reject this permit and any others that may follow. Use your conscience when making decisions.

ADEQ's Response:

ADEQ is committed to protecting human health and the environment. See ADEQ's responses to comments 19, 20, and 21. The AZPDES program regulates discharges to surface waters. The AZPDES program does not regulate impacts to underground waters. Groundwater quality is regulated by ADEQ's Aquifer Protection Permits (APP). For more information about APP, see <https://www.azdeq.gov/APP/ComplianceAssistance>. ADEQ is required to issue an individual AZPDES permit to a facility that meets all legal requirements, see ADEQ's response to comment 30.

Comment 232

William McDowell

Written Comment

Comment 232:

I'm writing to urge you to deny South32's Hermosa permit (#AZ0026387) for discharge of mine water into lower Harshaw and Alum Gulch. The proposed impacts are ecologically and socially unacceptable and fall into three main categories: 1) dewatering due to the "cone of depression" that would be created around the mine and 2) disturbances that would come from dramatically increased flow rates in nearby creeks, and 3) potential contamination of downstream water bodies.

First, pumping to drop the groundwater level to facilitate mining will change the ecology of these watersheds. In a semi-arid woodland watershed area this would be highly destructive. Drying out the shallow aquifers in these watersheds will alter the natural vegetation as native plants, including large trees, experience long-term drying of their deep root zones, potentially causing significant die-off of the native woodland tree species. This has occurred in the Tucson area over the past five decades (my lifetime).

Second, the large quantities of continuous discharge of groundwater into these two streams will alter the sediment balance of these streams, causing damaging increased sedimentation of the lower areas of these two watersheds. This will be particularly true during rainstorm runoff, since the mine discharge water will fill the absorption capacity of the stream channels, propelling much higher stormwater flows further down the watershed towards Sonoita Creek, potentially downcutting the stream channel and eventually increasing sedimentation of the lower Harshaw Creek watershed.

Third, the high levels of mine discharge water (up to 6 million gallons of water per day in lower Harshaw Creek and up to 172,000 gallons per day down Alum (Gulch) Creek) will transform lower Harshaw Creek into a perennial stream, with storm flows entering Sonoita Creek, just 5 miles away, much more frequently. As these periodic combined mine discharge/ stormflows will have higher metals concentrations than existing, water quality damage downstream could be severe. Copper is exceedingly toxic to fish, and several rare and endangered fish species exist in Sonoita Creek, a treasured local resource which feeds Patagonia Lake State Park and Natural Area. Cadmium, lead, and zinc have toxic properties for mammals, including humans. These discharges and increased sediment loads also will

damage seven rheocrene seeps and springs known in Harshaw Creek and the nine rheocrene seeps and springs known in Alum Creek.

Water quality results of proposed groundwater pumping, hardrock mining, and mine waste water treatment systems are difficult to accurately predict. If actual results of water treatment do not meet the whole effluent toxicity (WET) tests or other effluent standards, it is typically quite difficult to remedy this situation by developing new treatment methods once mine operation is underway. Once money is invested and new employees are hired for new mine operation, social and political pressures on State agencies make it difficult to force modification of proposed treatment systems to meet the real world situation.

Finally, the Patagonia Mountains/Sonoita Creek area is very important to Arizona for both recreation and ecological reasons. Tens of thousands of people come to this area every year to enjoy the natural environment, wildlife, state parks, and other natural features. Opening a huge new mine in the middle of this area is highly risky to existing [sic] economy and ecology of the area.

For all these reasons, I urge you and the Arizona Department of Environmental Quality to deny the permit for this project.

ADEQ's Response:

The AZPDES program has authority to regulate the discharge of pollutants to protect surface water quality. The AZPDES program does not have the authority to regulate groundwater pumping or limit the flow or volume of water discharged by a permittee, see ADEQ's response to comment 19.

The proposed permit protects the environment and public health in accordance with ADEQ's legal authority. While water quality may vary naturally over time, the permit requires regular monitoring to assess the water quality of the discharge. The permit contains effluent limitations for copper, cadmium, lead, and zinc to protect the wildlife and human health. For information about how permit limitations are set, see ADEQ's response to comment 19.

The AZPDES program does not have the authority to mandate which treatment technologies are used by AZPDES permittees, but all discharges must meet the effluent limitations established in the permit. An exceedance of an effluent limitation is a permit violation. ADEQ is notified of all effluent limitation exceedances through the discharge monitoring report (DMR) system. If an effluent limitation is exceeded, ADEQ will complete a file review or inspection to verify the exceedance and identify any additional compliance issues. ADEQ will work with the permittee to determine the root cause of the exceedance. ADEQ will take enforcement action as necessary to require the permittee to return to compliance.

If a WET test exceeds an action level set in the permit, the permittee must follow the procedures in Part III.E of the permit. The permittee must perform follow up testing within two weeks of receipt of the sample results that exceeded the action level. If an action level is exceeded during additional tests, the permittee must immediately begin developing a Toxicity Reduction Evaluation (TRE) plan based on EPA guidance manual *Toxicity Reduction Evaluation Guidance for Municipal Wastewater Treatment Plants*, 1999. The permittee must submit the plan to ADEQ for review and approval within 30 days after receipt of the toxic result. ADEQ

oversees the implementation of the TRE plan to ensure toxicity is prevented in subsequent discharges.

The AZPDES program does not have the authority to consider economic impact as part of a permitting decision. ADEQ is required to issue an individual AZPDES permit to a facility that meets all legal requirements, see ADEQ's response to comment 30.

Comment 233
Michelle Ceballos
Written Comment

Comment 233:

I'm writing to urge you to deny South32's Hermosa permit (#AZ0026387) for discharge of mine water into Harshaw and Alum creeks. I grew up in the Nogales area and I am deeply concerned about the environmental and health impacts of this project. The proposed impacts are unacceptable and fall into two main categories: 1) dewatering due to the "cone of depression" that would be created around the mine and 2) disturbances that would come from dramatically increased flow rates in nearby creeks. Concerned citizens have cited concerns about impacts to their well-being and their environment and I stand with them in rejecting this permit and the entirety of the South32 Hermosa Project.

ADEQ's Response:

The AZPDES program does not have the authority to regulate groundwater pumping or limit the flow or volume of water discharged by a permittee, see ADEQ's response to comment 19. ADEQ is required to issue an individual AZPDES permit to a facility that meets all legal requirements, see ADEQ's response to comment 30.

Comment 234
Thomas Prim
Written Comment

Comment 234:

If you don't deny this, I will go out there with sophisticated technology and take readings on how there is proof. It's ruining the environment that technology I have is really going to make the government really upset. It's something I invented and I'm currently working on making a presentation about its technology that can depict things without blood tests and pick up on the DNA of things, and even detect smells and tune into the subjectivity of things like as if a dam when it's built affects the surrounding area, we can even learn how certain species of plants are entangled in and expressing themselves differently

ADEQ's Response:

ADEQ would be interested in discussing any new monitoring technology. ADEQ encourages citizen scientists to volunteer to help us monitor the health of our waters and inform measures to protect it for future generations. For more information, see ADEQ's Arizona Water Watch program: <https://azdeq.gov/arizona-water-watch>.

Comment 235
David Rossetter
Written Comment

Comment 235:

I'm writing to urge you to deny South32's Hermosa permit (#AZ0026387) for discharge of mine water into Harshaw and Alum creeks. This will damage the aquifer as well as the quality of the surface water, surrounding streams, land, and communities.

For these reasons, I urge you and the Arizona Department of Environmental Quality to deny the permit for this project.

ADEQ's Response:

The permit contains effluent limitation and monitoring requirements to protect Alum Gulch and Harshaw Creek. ADEQ is committed to protecting human health and the environment. See ADEQ's responses to comments 19, 20, and 21. ADEQ is required to issue an individual AZPDES permit to a facility that meets all legal requirements, see ADEQ's response to comment 30.

Comment 236**Julie Gustafson****Written Comment****Comment 236:**

Please deny South32's Hermosa permit (#AZ0026387) for discharge of mine water into Harshaw and Alum creeks. The impacts are unacceptable amid the already unprecedented challenges to local wildlife as a result of climate change.

Dropping the groundwater level in an area like this is highly destructive and permanently harmful and would negatively impact area springs and the flora and fauna, which evolved with them. It would likely forever change this landscape.

The water discharges would far exceed current, intermittent, base flows leading to severe erosion upstream, and excessive sediment loads downstream and again would forever change the biodiversity of this unique place.

While too many landscapes have been forever changed in name [sic] of profit - this is one we can and you should protect.

Again, please deny the permit for this project.

ADEQ's Response:

The AZPDES program does not have the authority to regulate groundwater pumping or groundwater levels. See ADEQ's response to comment 19. ADEQ is committed to protecting human health and the environment. See ADEQ's responses to comments 19, 20, and 21. ADEQ is required to issue an individual AZPDES permit to a facility that meets all legal requirements, see ADEQ's response to comment 30.

Comment 237**Jeffrey Richardson****Written Comment**

Comment 237:

As a frequent visitor to federal public lands in the Patagonia Mountains, I am shocked at the proposed groundwater pumping and related activities connected to the South32/Hermosa project. The notion that such a project might go forward on private or AZ public land without any regard for the resources on adjoining federal lands is completely unacceptable.

I urge you to deny South32's Hermosa permit (#AZ0026387) for groundwater pumping and discharge of mine water into Harshaw and Alum creeks. The resulting loss of springs from a lowered water table and the accelerated and excessive flows resulting from discharge of the pumped water would cause damage that is irreparable. This region is environmentally sensitive by its very nature. Its resilience is being severely tested by diverse forms of habitat loss, human activities and climate change.

Please deny this permit!

ADEQ's Response:

ADEQ is committed to protecting human health and the environment. See ADEQ's responses to comments 19, 20, and 21. The AZPDES program does not have the authority to regulate groundwater pumping or limit the flow or volume of water discharged by a permittee, see ADEQ's response to comment 19. The program does not have the authority to consider proximity to resources on federal lands, but the permit contains effluent limitations to protect the designated uses of Alum Gulch and Harshaw Creek. For more information about designated uses and effluent limitations, see ADEQ's response to comment 19. ADEQ is required to issue an individual AZPDES permit to a facility that meets all legal requirements, see ADEQ's response to comment 30.

Comment 238**Reta Rutledge****Written Comment****Comment 238:**

There are details below my comments if you need more convincing. We live in an arid landscape and all water is precious. Springs are a valuable source of water for people and wildlife. They must be protected.

The idea of a mining company "dropping" the water level by 1900" is horrendous. I know we need the minerals for electric vehicles and other green items but this price includes decreasing water for Arizona residents who live there and count on this water source.

Dumping the dramatic amount of water into two typically intermittent streams will create erosion problems and more.

Please reject the water permit for South32's Hermosa [sic] Project.

ADEQ's Response:

The AZPDES program does not have the authority to regulate groundwater pumping or the volume of flow discharged from the facility. See ADEQ's response to comment 19. ADEQ is required to issue an individual AZPDES permit to a facility that meets all legal requirements, see ADEQ's response to comment 30.

Comment 239
Richard Hartigan
Written Comment

Comment 239:

I'm writing to urge you to deny South32's Hermosa permit (#AZ0026387) for discharge of mine water into Harshaw and Alum creeks. The damage to local springs and landscapes through a lowered water table will likely include a great loss of trees that we count on to process CO2, provide cooling shade and habitat, stabilize slopes, and inspire us with their beauty.

While it would be amazing to have year round surface water flowing in Harshaw Creek and Alum Gulch, it would also disturb and possibly destroy sensitive habitats that exist now, it would also disturb/destroy the diversity and geographic spread of springs in the area, which a number of threatened and endangered species rely on.

Please preserve this unique and extremely diverse habitat and biological community.

ADEQ's Response:

ADEQ is committed to protecting human health and the environment. See ADEQ's responses to comments 19, 20, and 21. ADEQ is required to issue an individual AZPDES permit to a facility that meets all legal requirements, see ADEQ's response to comment 30. The AZPDES program does not have the authority to regulate impacts to the water table or the volume of flow discharged from the facility.

Comment 240
Carol Boquard
Written Comment

Comment 240:

Please keep Patagonia the way it is now. We depend on it. Why should we let a foreign company destroy our land and take the profits? Patagonia as we know it will cease to exist. As will the creeks, water table and animals. Sounds crazy to deplete a water table and let it just run off. At the very least there should be a reservoir to keep and reuse the water.

ADEQ's Response:

The AZPDES program does not have the authority to consider economic impact as part of a permitting decision, see ADEQ's response to comment 30. The program does not have the authority to regulate groundwater pumping. See ADEQ's response to comment 19. ADEQ is required to issue an individual AZPDES permit to a facility that meets all legal requirements, see ADEQ's response to comment 30.

Comment 241
CONRAD MCCARTHYN
Written Comment

Comment 241:

South32's Hermosa permit (#AZ0026387) for discharge of mine water into Harshaw and Alum creeks should be denied due to unacceptable impact from the : "cone of depression" from dewatering and the subsequent impact on the surrounding springs and creeks.

Lowering the groundwater level will change local hydraulic gradients, causing current natural springs to causing [sic] potential significant loss of upland trees. and severe disruption of the present ecosystem.

Although water in the desert is a rarity, and one would think that increased flow would help our streams, because of the sensitive ecological balance of these riparian ecosystems, a change in flow regime this drastic could permanently alter the character and species composition of these areas.

ADEQ's Response:

ADEQ is committed to protecting human health and the environment. See ADEQ's responses to comments 19, 20, and 21. The AZPDES program does not have the authority to regulate groundwater pumping. See ADEQ's response to comment 19. ADEQ is required to issue an individual AZPDES permit to a facility that meets all legal requirements, see ADEQ's response to comment 30.

Comment 242

Lucille Flaaten

Written Comment

Comment 242:

I'm writing to urge you to deny South32's Hermosa permit (#AZ0026387) for discharge of mine water into Harshaw and Alum creeks. This global company is headquartered in Australia and will offer very little to the economy if [sic] Arizona. Please protect the Patagonia area.

ADEQ's Response:

The AZPDES program does not have the authority to consider economic impact as part of a permitting decision. ADEQ is required to issue an individual AZPDES permit to a facility that meets all legal requirements, see ADEQ's response to comment 30.

Comment 243

Carolyn Cooper

Written Comment

Comment 243:

It's time for ADEQ to recognize the importance of preserving sensitive habitats for the survival of all animals and flora that depend on our limited and endangered water sources. It's time to stop bowing to short term mining interests who threaten to destroy natural habitats for profit seeking interests. Their habitat destruction will forever change the land.

ADEQ's Response:

ADEQ is committed to protecting human health and the environment. See ADEQ's responses to comments 19, 20, and 21. The AZPDES program does not have the authority to consider economic impact as part of a permitting decision. ADEQ is required to issue an individual AZPDES permit to a facility that meets all legal requirements, see ADEQ's response to comment 30.

Comment 244

Craig Anderson

Written Comment

Comment 244:

Please deny South32's Hermosa permit (#AZ0026387) for discharge of mine water into Harshaw and Alum creeks. The proposed impacts are unacceptable and fall into two main categories: 1) dewatering due to the "cone of depression" that would be created around the mine and 2) disturbances that would come from dramatically increased flow rates in nearby creeks.

ADEQ's Response:

ADEQ is committed to protecting human health and the environment. See ADEQ's responses to comments 19, 20, and 21. The AZPDES program does not have the authority to regulate groundwater pumping or limit the flow or volume of water discharged by a permittee, see ADEQ's response to comment 19. ADEQ is required to issue an individual AZPDES permit to a facility that meets all legal requirements, see ADEQ's response to comment 30.

Comment 245-246

Gary Levine

Written and Oral Comments

Comment 245:

I am writing to express my strong opposition to the proposal referenced above to issue renewal permit number AZ0026387. I request that you consider the following facts as to why this discharge permit should not be issued.

1) The Arizona Water Resource Board has designated Santa Cruz County, AZ (the county in which Patagonia is located) as an Extreme Drought area. This is reported on the State of Arizona Drought Status report at:

<https://www.azwater.gov/drought/droughtstatus#:~:text=Extreme%20%28D3%29%20longterm%20drought%20advanced%20in%20Maricopa%20and, and%20Maricopa%20counties%20expanded%20Severe%20%28D2%29%20longterm%20drought.>

Allowing South32 to pump out and discharge up to 6.5 million gallons of groundwater per day in an arid state like Arizona is absurd in and of itself, but allowing them to do so when we are experiencing an extreme drought is simply beyond comprehension.

2) The AZPDES permit would allow the pumping and discharge of up to 6.5 million gallons of mine water per day into Upper Harshaw Creek from deep and destructive mine dewatering wells. This water will include seepage from the mine's tailing piles, core cuttings and potentially acid-generating rock from the mine shaft development. The waters of Upper Harshaw Creek are already impaired with elevated levels of copper and low pH that can result in heavy metal contamination. ADEQ has not prepared a TMDL analysis of South32's discharges into these impaired waters. ADEQ is not only obligated to perform such an analysis as part of its mission and responsibility to protect our groundwater, but it is also clearly a violation of the Clean Water Act to not do so.

3) Any representations or assertions that the Hermosa project is not a brand new mine cannot be supported by the facts. The mining activity that took place in that area occurred many decades ago by a different company and were vastly different than those being done by South32. The old mine that was located on a small portion of the Hermosa project was abandoned long ago, and everything that South32 is now doing is brand new, including the deep mine shafts, two wastewater treatment plants, and the associated infrastructure at the Hermosa Project site. That has all been built within the last 10

years or is currently being constructed. Saying that the Hermosa Project is just a continuation of the small historic mine that was once there is like saying that a factory currently building electric automobiles is just a continuation of building horse and buggies on the basis that both of them happen to be located in the same area. This project clearly does not qualify for a renewal permit. It should and needs to be subject to all modern performance and legal requirements of the Clean Water Act which were enacted in order to protect the quality of our water and the health of the residents of Santa Cruz County and southwestern Arizona.

4) The mission and vision of the ADEQ, as stated on its webpage is: To protect and enhance public health and the environment in Arizona. • Through consistent, science-based environmental regulation; and clear, equitable engagement and communication; • With integrity, respect, and the highest standards of effectiveness and efficiency; • Because Arizonans treasure the unique environment of our state and its essential role in sustaining well-being and economic vitality, today and for future generations. ADEQ will be acting contrary to its mission of protecting the water and health of our people by issuing a renewal permit and not treating this as a new mine subject to the latest mining performance requirements as well as all of the provisions of the Clean Water Act. Issuing this renewal permit will also be in direct contradiction to all of those other statements above with respect to ADEQ's mission and vision.

5) In her State of the State address this past week, Governor Hobbs declared water to be a top issue for her administration, committed to protecting the state of Arizona's groundwater supplies, and to update the state's water laws. She made clear that this is such an important issue to our state that she would act on her own initiative if necessary and that we cannot allow corporations to "rob us of our water future". That is precisely what this South32 permit renewal proposal will do if approved. ADEQ has sufficient factual information available to legally not allow this to happen.

6) I also wish to reference and incorporate into my comments all of the comments submitted to ADEQ by PARA (Patagonia Area Regional Alliance) regarding this proposal. Thank you for your consideration.

ADEQ's Response:

ADEQ is committed to protecting human health and the environment. See ADEQ's responses to comments 19, 20, and 21. ADEQ acknowledges the drought conditions in Santa Cruz County and Governor Hobbs' 2024 State of the State Address comments regarding the importance of protecting groundwater supplies. However, the AZPDES program does not have authority to regulate groundwater pumping, see ADEQ's response to comment 19. For information about TMDLs, see ADEQ's responses to comments 2, 4, and 7. For information about "new source", see ADEQ's response to comment 1. ADEQ is required to issue an individual AZPDES permit to a facility that meets all legal requirements, see ADEQ's response to comment 30.

Comment 246:

My name's Gary Levine. I live in Rio Rico. I appreciate very much that ADEQ is here this evening to allow us and the people here to comment on the proposed discharge permit. I truly hope that you're here to listen and not to just fulfill your legal obligation to do that. ADEQ's responsibility by law is to enforce the discharge provisions of the Clean Water Act to protect human health. By issuing permits to South 32, ADEQ will be abandoning its legal responsibility to protect the water quality from South 32's operations. Since my wife and I live near Sonoita Creek, I will use that waterway as an example. Significant discharges of mine water from Alum and Harshaw Creek will reach Sonoita Creek. And if that's not enough cost for concern, the waters of Sonoita Creek are already impaired by zinc. However, the required TMDL has never been completed by ADEQ. Moreover, ADEQ must perform a waste load allocation for

the discharges to Sonoita Creek. This is required by the Clean Water Act so that South 32's discharges will not further contaminate or degrade these downstream surface waters, but rather can support the further restoration of water quality in the creek. For that reason, and as well as all of the other very factual based reasons that have been presented to you this evening, no discharge permit should be issued to South 32. ADEQ has an immense responsibility to protect the people and the water here, water is life, and we urge you to do that. I also wholeheartedly reference and incorporate the Patagonia Area Resource Alliance comments into my comments.

ADEQ's Response:

ADEQ is required to issue an individual AZPDES permit to a facility that meets all legal requirements, see ADEQ's response to comment 30. For information about Sonoita Creek, see ADEQ's response to comment 7. The effluent limitations and monitoring requirements in the permit are protective of downstream waters, including Sonoita Creek, see ADEQ's response to comment 20.

Comment 247

TerraSol Center LLC, Mary Tolena

Written Comment

Comment 247:

I live on Harshaw Avenue in Patagonia, and operate TerraSol Center, a campground that serves hikers, cyclists, and van/RV travelers. My property is approximately 300 yards from Harshaw Creek, and my well taps into the creek aquifer. Not only is ongoing water quality essential to the health of myself and my camping guests, the ecological health of the entire Harshaw/Sonoita creek watershed is crucial to the future of my business and the entire town of Patagonia.

I fully agree with the Summary and Comments on the proposed renewal of AZPDES Discharge Permit No. AZ0026387 prepared by Patagonia Area Resource Alliance (PARA), and hereby incorporate them into my comments (see attachment).

In addition, I'd like to emphasize:

1. It is preposterous and unconscionable for anyone -- ADEQ, South32, or anyone else -- to consider the Hermosa Project as anything other than a NEW source of pollution. "Source" means ORIGIN, which entails many dimensions. The ORIGIN of the Hermosa pollution concern is entirely different than what was present 60 years ago when the original Trench Mine was closed. Water discharge from the NEW mine comes from entirely NEW drilling, processing and tailings operations (still being built); NEW types and sources of ore (not even accessible 60 years ago); and from many thousands of feet below what was mined in the 1960s. In addition, the potential quantities of water to be discharged are orders of magnitude greater than historically permitted quantities, which will have an obviously NEW effects on the ecosystem which must be studied.

*2. Thus, an AZPDES permit for the Hermosa project must go through the entire proper study and review process that CURRENT Arizona and federal environmental laws require for a new mine. That includes full and complete TMDL studies for Alum Gulch and Harshaw & Sonoita creeks, acknowledging their factual status as impaired waterways due to historic mining, and setting TMDL limits that *improve* their environmental quality over time. South32 touts the Hermosa project as being designed to the highest*

modern standards of environmental controls. ADEQ's job is to make sure they're required to meet TODAY's standards, not those of 20, 40, or 60 years ago.

3. As a new toxic pollutant with apparently little prior regulation or oversight, manganese is of great concern to the people in the entire Sonoita Creek and Santa Cruz River watersheds. Manganese levels MUST be monitored and reported to assure this new pollutant is not entering our water supply to cause long-term damage.

4. To assure residents that our water is safe on an ongoing basis, monitoring must be done at least monthly, and reported in real-time. With South32's high-tech approach to the whole project and purported commitment to community transparency, it should not be difficult to build in such monitoring and reporting processes.

The Sonoita Creek watershed is the major U.S. tributary to the Santa Cruz River, a crucial Arizona waterway in both historical and modern terms. I ask ADEQ to fully exercise its regulatory ability and duty to protect this entire ecosystem, and the health of the people who live here, by properly applying current water quality laws and procedures.

Thank you for considering my comments.

ADEQ's Response:

For information about "new source", see ADEQ's response to comment 1. For information about TMDLs, see ADEQ's responses to comments 2, 4, and 7. For information about manganese, see ADEQ's response to comment 8. For information about monitoring frequencies, see ADEQ's response to comment 9 and 11.

Comment 248

Reformed Catholic Church, Rev. Andrew Barreras OPR

Written Comment

Comment 248:

You are not doing your job to enforce the discharge provisions of the Clean Water Act to protect human health and the environment as required by law.

You cannot issue the permit until ADEQ complies with Total Maximum Daily Load (TMDL) rules required by the Clean Water Act so that the contaminated waters of Harshaw Creek, Alum Gulch, and Sonoita Creek can finally be returned to good health. ADEQ's concerted efforts to avoid or trivialize its TMDL obligations in the Permit is astonishing.

Please do not issue this permit and please keep me updated on all aspects of this permit process.

ADEQ's Response:

For information on TMDLs, see ADEQ's responses to comments 2, 4, and 7. ADEQ is required to issue an individual AZPDES permit to a facility that meets all legal requirements, see ADEQ's response to comment 30.

Comment 249

Ecotone Biodiversity LLC, Caleb Weaver

Written Comment

Comment 249:

As a business owner in Patagonia, Arizona, I am concerned about the impact that South32's Hermosa Mine will have on my ability to do business in the region. The location of the South32 Hermosa Mine lies within a biological community that has been internationally recognized for its diversity. The International Union for the Conservation of Nature has identified the Madrean Pine-Oak Woodland as a hotspot for biodiversity. In fact, this location is only one of three recognized hotspots for biodiversity within the entire United States. Due to the unique biological wealth of the area - boasting 3,975 endemic plant species (meaning they don't live anywhere else) and 133 endemic animal species - this region is in need of extra care. This is not a habitat that should be mined. Since a mine is going in, the Arizona Department of Environmental Quality has the duty to follow the strictest protective measures possible to protect the uniquely delicate ecosystem, let alone the people who live here. Attached is a file prepared by the Patagonia Area Resource Alliance that outlines some of the ways the ADEQ can do right by the residents - both human and nonhuman - who's lives will be impacted by this mine. And in the instance of my business, the ability to make a living the area.

ADEQ's Response:

ADEQ has applied all aspects of the Clean Water Act to ensure the discharges will be protective of the receiving waters and downstream waters. ADEQ is committed to protecting human health and the environment. See ADEQ's responses to comments 19, 20, and 21.

Comment 250
Submitted by Terri Engel
Written Comment

Comment 250:

Please do not approve a permit for the Hermosa Project AZ0026387 I am very concerned about the environmental damage from this mine.

ADEQ's Response:

ADEQ acknowledges your opposition to this permit. ADEQ is committed to protecting human health and the environment. See ADEQ's responses to comments 19, 20, and 21. ADEQ is required to issue an individual AZPDES permit to a facility that meets all legal requirements, see ADEQ's response to comment 30.

Comment 251
Michael Collins
Written Comment

Comment 251:

I support this water permit renewal. The project supports a wide range of mineral production that is very necessary for a clean energy transition. The project offers local and regional benefits in the form of economic development and diversification. Enforcement of water quality standards to protect human and natural resource interests will be essential, but this project has a positive track record for the protection of water resources.

ADEQ's Response:

ADEQ acknowledges your support of the permit.

Comment 252
Sydney Hay, AMIGOS President
Written Comment

Comment 252:

This comment is provided in support of the proposal by the Arizona Department of Environmental Quality to renew the AZPDES permit for the January Mine Hermosa Project owned by South32 Hermosa Inc. I am President of the mining industry trade association, Arizona Mining and Industry Get Our Support (AMIGOS.) We are over 300 Arizona businesses that provide goods and services to the mining industry. Our members collectively employ thousands of Arizonans in good, high-paying jobs. The mine proposed by South32 Hermosa is important to our membership. The project will provide significant economic benefits to the local and regional economy in the form of hundreds of jobs during construction and operation, local/regional/state direct spending, and tax revenue. These benefits are critically important for Santa Cruz County, which has a very high unemployment rate. South32 Hermosa has displayed its commitment to the local community by already making significant investments in local infrastructure and education. The company has also acted transparently by sharing information with and seeking input from community members and its community advisory panel which includes several environmental organizations. The mine will be a source of two critical minerals, manganese, and zinc, that will aid in the country's transition to clean energy sources. Partly for this reason, we understand that the project is the first mining project to be accepted into the federal FAST-41 program that attempts to streamline permitting without sacrificing environmental protection or opportunities for public input. As explained by ADEQ, this would be a renewal of an existing permit. As we understand it, the treatment plants at the mine have been designed to meet all applicable federal and state legal requirements. The discharges are regulated not only by the permit currently under consideration but also by another permit issued by ADEQ (a groundwater protection permit). Moreover, based on the ADEQ fact sheet, it appears that the changes being proposed to the existing permit would serve to make the renewal permit even more stringent and environmentally protective. For these reasons, we support ADEQ's proposal to issue the renewal permit. Thank you for the opportunity to comment.

ADEQ's Response:

ADEQ acknowledges your support of the permit.

Comment 253
Brett Tanner
Written Comment

Comment 253:

I support the Arizona Department of Environmental Quality's proposal to renew the AZPDES permit for the South32 Hermosa Project south of Patagonia. I believe the permit complies with the federal Clean Water Act and parallel Arizona state law and will protect the quality of the permitted receiving waters. I represent CTI, INC, a bulk transportation company located in Marana, AZ. CTI provides trucking services to the local southern Arizona market and for decades has employed over 300 individuals in the Tucson and south area. This project is very important to the local community and particularly CTI to provide good paying jobs to support the families of this geographical area. Hermosa has shown their ability to work safely and environmentally sensitive over the past years and I enthusiastically share my support the South 32 project and the tremendous economic value it represents to so many local residents. Thank you.

ADEQ's Response:

ADEQ acknowledges your support of the permit.

Comment 254
Jerry Harris, Southwest Energy
Written Comment

Comment 254:

I support the Arizona Department of Environmental Quality's proposal to renew the AZPDES permit for the South32 Hermosa Project south of Patagonia. I believe the permit complies with the federal Clean Water Act and parallel Arizona state law and will protect the quality of the permitted receiving waters.

This project is important to my business because it will employ both direct and indirect labor from Southwest Energy as well as many other locally owned businesses.

South32 has proven itself to be a responsible permit holder and good corporate citizen. The Hermosa project also offers the prospect of badly needed economic development in a community that needs more. If the mine is ultimately developed, it will also provide the only domestic source of manganese and a key additional domestic source of zinc. Manganese and zinc are critical minerals of substantial strategic importance to the American economy and the clean energy transition.

I urge ADEQ to approve the proposed permit renewal as written.

ADEQ's Response:

ADEQ acknowledges your support of the permit.

Comment 255
Leon Punt, Copper State Bolt & Nut Co.
Written Comment

Comment 255:

I support the Arizona Department of Environmental Quality's proposal to renew the AZPDES permit for the South32 Hermosa Project south of Patagonia. I believe the permit complies with the federal Clean Water Act and parallel Arizona state law and will protect the quality of the permitted receiving waters.

This project is important to the company I work for (Copper State Bolt & Nut Co.), but not only is it important for us with the support we give the project, it also is very important to the contactors on site and any other supply company who is providing good to the Site. This is an economic boost for all. The Hermosa project also is an economic boost severely needed for the surrounding communities with the jobs it helps provide.

South32 has proven itself to be a responsible permit holder and good corporate citizen. If the mine is ultimately developed, it will also provide the only domestic source of manganese and a key additional domestic source of zinc. Manganese and zinc are critical minerals of great importance to the American economy and the clean energy transition.

I would sincerely hope ADEQ would approve the proposed permit renewal as written.

ADEQ's Response:

ADEQ acknowledges your support of the permit.

Comment 256
Mark Davis, Arizona Pump & Machine/Keto Pumps NA
Written Comment

Comment 256:

I support the Arizona Department of Environmental Quality's proposal to renew the AZPDES permit for the South32 Hermosa Project south of Patagonia. I believe the permit complies with the federal Clean Water Act and parallel Arizona state law and will protect the quality of the permitted receiving waters.

The South32 Hermosa project has already become an important part of Arizona Pump & Machine's business. Our work on water and wastewater treatment equipment as well as mining equipment at the Hermosa site has led us to hire additional millwrights and machinists. Hermosa's water treatment system is one of the [sic] best run and best designed we have seen in this type of application and they are scrupulous in its operation and maintenance.

Hermosa forms an integral part of our growth plan for the next several years and AZP&M will be hiring additional skilled and unskilled personnel in Pima and Santa Cruz counties to support this valuable customer as they expand their operations. These are good paying, long term jobs with very competitive benefits that can build community and support families in southern AZ.

South32 has proven itself to be a responsible permit holder and good corporate citizen. The Hermosa project also offers the prospect of badly needed economic development in a community that needs more. If the mine is ultimately developed, it will also provide the only domestic source of manganese and a key additional domestic source of zinc. Manganese and zinc are critical minerals of substantial strategic importance to the American economy and the clean energy transition.

I urge ADEQ to approve the proposed permit renewal as written.

ADEQ's Response:

ADEQ acknowledges your support of the permit.

Comment 257
Michael Guymon, Tucson Metro Chamber
Written Comment

Comment 257:

The Tucson Metro Chamber supports the Arizona Department of Environmental Quality's proposal to renew the AZPDES permit for the South32 Hermosa Project south of Patagonia. We believe the permit complies with the federal Clean Water Act, in addition to parallel Arizona state law, and will protect the quality of the permitted receiving waters.

South32 has proven itself to be a responsible permit holder and good corporate citizen. The Hermosa project also offers the prospect of much needed economic development and quality jobs within the region. If the mine is ultimately developed, it will also provide the only domestic source of manganese and a key additional domestic source of zinc. Manganese and zinc are critical minerals of substantial strategic importance to the American economy and the clean energy transition.

According to research completed by the University of Arizona School of Mining and Brad Ross, interim director for the University of Arizona's School of Mining and Mineral Resources, "Mineral demands are

expected to grow as much as 1,000% by 2050. Much of this demand will come from automakers, which plan to spend \$300 billion globally to produce new electric vehicles over the next decade. The Infrastructure Investment and Jobs Act makes mining even more critical to Arizona's economy."

We urge the agency to approve the proposed permit renewal as written.

ADEQ's Response:

ADEQ acknowledges your support of the permit.

Comment 258

Bret Halley C.O.O. Valley Forge & Bolt Mfg. Co.

Written Comment

Comment 258:

I support the Arizona Department of Environmental Quality's proposal to renew the AZPDES permit for the South32 Hermosa Project south of Patagonia. I believe the permit complies with the federal Clean Water Act and parallel Arizona state law and will protect the quality of the permitted receiving waters. This project is important to my business because Valley Forge & Bolt has supplied products to many of Arizona's mines since 1974. Our 100 employees appreciate new opportunities within Arizona. It is good to know ADEQ looks after Arizona and helps look after our economic wellbeing in the process. South32 has proven itself to be a responsible permit holder and good corporate citizen. The Hermosa project also offers the prospect of badly needed economic development in a community that needs more. If the mine is ultimately developed, it will also provide the only domestic source of manganese and a key additional domestic source of zinc. Manganese and zinc are critical minerals of substantial strategic importance to the American economy and the clean energy transition. I urge ADEQ to approve the proposed permit renewal as written.

ADEQ's Response:

ADEQ acknowledges your support of the permit.

Comment 259

Rick Grinnell, Southern Arizona Business Coalition

Written Comment

Comment 259:

On behalf of the over 10,000 employees directly and indirectly impacted by the mining industry here in Southern Arizona thank you for your efforts with respect to this project. The Southern Arizona Business Coalition (SABC), formed in 2012 stands for the responsible development of our human and natural resources.

This comment is provided in support of the proposal by the Arizona Department of Environmental Quality to renew the AZPDES permit for the January Mine Hermosa Project owned by South32 Hermosa Inc.

The mine proposed by South32 Hermosa will be a source of two critical minerals, manganese and zinc, that will aid in the country's transition to clean energy sources. Partly for this reason, We understand that the project is the first mining project to be accepted into the federal FAST-41 program that attempts to streamline permitting without sacrificing environmental protection or opportunities for public input. The project also will provide significant economic benefits to the local and regional economy in the form of hundreds of jobs during construction and operation, local/regional/state direct spending, and tax

revenue. These benefits are critically important for Santa Cruz County, which has a very high unemployment rate. South32 Hermosa has displayed its commitment to the local community by already making significant investments in local infrastructure and education. The company has also acted in a transparent fashion, for example by sharing information with, and seeking input from, community members and its community advisory panel which includes several environmental organizations.

As explained by ADEQ, this would be a renewal of an existing permit. As We understand it, the treatment plants at the mine have been designed to meet all applicable federal and state legal requirements. The discharges are regulated not only by the permit currently under consideration, but also by another permit issued by ADEQ (a groundwater protection permit). Moreover, based on the ADEQ fact sheet, it appears that the changes being proposed to the existing permit would serve to make the renewal permit even more stringent and environmentally protective.

For these reasons, we support ADEQ's proposal to issue the renewal permit.

ADEQ's Response:

ADEQ acknowledges your support of the permit.

Comment 260

Alberto Bennett, M3 ENGINEERING & TECHNOLOGY CORP.

Written Comment

Comment 260:

I support the Arizona Department of Environmental Quality's proposal to renew the AZPDES permit for the South32 Hermosa Project south of Patagonia. I believe the permit complies with the federal Clean Water Act and parallel Arizona state law and will protect the quality of the permitted receiving waters. This project is important to my business because we are a local engineering firm with over 300 employees in Arizona and over 700 worldwide, and we works mainly on the mining industry and the local Arizona mining companies are a big part of our client basis. South32 has proven itself to be a responsible permit holder and good corporate citizen. The Hermosa project also offers the prospect of badly needed economic development in a community that needs more. If the mine is ultimately developed, it will also provide the only domestic source of manganese and a key additional domestic source of zinc. Manganese and zinc are critical minerals of substantial strategic importance to the American economy and the clean energy transition. I urge ADEQ to approve the proposed permit renewal as written.

ADEQ's Response:

ADEQ acknowledges your support of the permit.

Comment 261

Brent Musslewhite, South32 Hermosa, Inc.

Written Comment

Comment 261:

South32 Hermosa Inc. ("South32") appreciates the opportunity to comment on the draft AZPDES renewal permit for two surface water discharges at its January Mine Hermosa Project ("Project"). ADEQ published the public notice for the renewal on November 28, 2023. These same discharges are also regulated by an aquifer protection permit ("APP"), No. P-512235. South32 supports issuance of the renewal permit. Project Background

The Project consists of ongoing exploration activities and potential future underground mining in an area of historic mineral production south of Patagonia, Arizona. If developed, the Project will produce manganese, zinc, silver, and lead. Two of these minerals, manganese and zinc, are on the most recent list of critical minerals published by the United States Geological Service in February 2022. See 87 Fed. Reg. 10381 (February 24, 2022). Increased domestic production of critical minerals is a priority of current and past Congresses and Administrations, as reflected in numerous pieces of legislation and executive directives, and is critical to allowing the country to transition to cleaner energy sources. The Project is the only advanced manganese development project in North America.

In recognition of its potential to produce critical minerals, the Project is the first (and thus far only) mining project accepted by the Federal Permitting Improvement Steering Council (“FPISC”) for inclusion in the FAST-41 program (42 U.S.C. § 4370m et seq.). Participation in FAST41 is intended to lead to a single, coordinated, and transparent permitting timetable for all federal environmental reviews and authorizations for a covered project and to allow expedited issue elevation and dispute resolution procedures. The FPISC has established a framework and schedule for coordinating the necessary federal environmental reviews and authorizations for the Project.

Comments on Draft Permit

- 1. ADEQ is correct in noting that the existing permit has been administratively continued (Fact Sheet, p. 1): The draft Fact Sheet (p. 1) notes that the existing permit, although it carries an expiration date of January 7, 2023, has been administratively continued. This is correct as a matter of law.*
- 2. The new source language applicable to Outfall 001 is correct and defensible (Part I.A.1.b): ADEQ has proposed language to address new source questions potentially raised by the Arizona Court of Appeals decision in San Carlos Apache Tribe v. State of Arizona, 254 Ariz.179, 520 P.3d 670 (2022), petition for review granted and case argued, No. CV-22-0290-PR (August 22, 2023).*
- 3. South32 supports the proposal to establish WQBELs (rather than TBELs) for mercury and lead at Outfall 001 (Part I, table 1.a).*
- 4. South32 supports the proposal to include a single effluent limitation table based on chronic criteria for Outfall 001 (Part I, table 1.a).*
- 5. South32 supports the use of a default translator to derive WQBELs for certain metals (Part I, tables 1.a and 1.b).*
- 6. South32 supports the addition of discharge characterization testing (Part I.D and Table 4).*
- 7. South32 supports the more frequent effluent limitation monitoring required by the draft permit (Part I, tables 1.a and 1.b): The draft permit increases the frequency of required effluent limitation monitoring from quarterly to monthly. South32 supports this change, in light of concerns raised by some in the community.*
- 8. ADEQ has adequately justified the hardness values used to derive WQBELs for hardness-dependent metals in the permit (Part I, tables 1.a and 1.b).*

9. No additional permit conditions are required relative to Sonoita Creek, and no TMDL is required for Sonoita Creek.

ADEQ's Response:

ADEQ acknowledges your support of the permit.

Comment 262
William Dixon
Written Comment

Comment 262:

As a resident of Santa Cruz County since 1999 I write in favor of a denial of South32's Hermosa permit request (#AZ0026387) for discharge of mine water into Harshaw and Alum creeks. The proposed discharges--in their manner and volume-- would permanently cause irreversible damage--based upon scientific studies and the information provided by the applicant itself.

Detailed information on the need for denial is in the hands of the Department. I hope you will fulfill your responsibilities and deny the requested permit"

What's more, such intense flooding will lead to reduced tree recruitment for riparian species like cottonwoods and sycamores — over time, altering the landscape. Because the water discharges would be ongoing, the surrounding landscape will be more water-logged. This means a reduced capacity to absorb water during rains, and potential downstream flash flooding. And finally, the quality of the water being discharged in such high quantities is a concern. Its source will be deep underground in the Hermosa project, and although the mine has promised to treat the water before release, its quality could change unexpectedly over time.

Although water in the desert is a rarity, and one would think that increased flow would help our streams, because of the sensitive ecological balance of these riparian ecosystems, a change in flow regime this drastic could permanently alter the character and species composition of these areas.

For all these reasons, I urge you and the Arizona Department of Environmental Quality to deny the permit for this project.

ADEQ's Response:

ADEQ is committed to protecting human health and the environment. See ADEQ's responses to comments 19, 20, and 21. The AZPDES program does not have the authority to regulate groundwater pumping or limit the flow or volume of water discharged by a permittee, see ADEQ's response to comment 19. ADEQ is required to issue an individual AZPDES permit to a facility that meets all legal requirements, see ADEQ's response to comment 30.

Comment 263
Kathleen Pasierb, Sandra Porter, and Nathan Shumway
Written Comment

Comment 263:

Comment in regards to AZPDES DISCHARGE PERMIT NO. AZ0026387 to South32, Inc. As you are aware your agency is allowing South32 to discharge mine water since about August 2023 into Harshaw Creek under an EXPIRED AZPDES surface water permit. I strongly object to a renewal of this old permit to S32

unless your agency addresses and includes all of the following issues in a new permit. 1. The S32 water discharge location (outfall 002) is located in the impaired segment of Upper Harshaw Creek not Lower Harshaw Creek. Under the Az Clean Water Act 303 (d) you must revise the outdated TMDL for Upper Harshaw Creek. 2. Acknowledge the impairments in Lower Harshaw Creek and prepare an update on the outdated 20-year old TMDL for Lower Harshaw Creek. 3. Revise the permit to include the true extent of discharge data in calculating permit limits. Your agency and S32 will be partners responsible for the threats to human health and the health of the environment if you do not issue a revised AZPDES permit using all of the points listed above. Please do the right thing and follow your statutory duties which require that ADEQ "act to protect the environment" promote the "protection and enhancement of the quality of water resources" provide for the "prevention and abatement of all water and air pollution" and "ensure the preservation and enhancement of natural beauty " in our state. A.R.S. 49-204 (A), (1), (7), (9), (10).

ADEQ's Response:

South32's existing AZPDES permit is administratively continued, see ADEQ's response to comment 18. See ADEQ's response to comment 3 regarding the location of Outfall 002. For information regarding the Upper Harshaw Creek TMDL, see ADEQ's response to comment 4. For information regarding the extent of discharge data, see ADEQ's response to comment 5. ADEQ is required to issue an individual AZPDES permit to a facility that meets all legal requirements, see ADEQ's response to comment 30.

Comment 264

**Gayle Perrine and Robert Speckels
Written Comment and Oral Comment**

Comment 264:

I object to the proposal from the Arizona Department of Environmental Quality (ADEQ) to renew the Arizona Pollutant Discharge Elimination Permit (AZPDES) NO. AZ 0026387 for South 32's Hermosa Project mine. I agree with all the Patagonia Area Resource Alliance objections summarized in the attached PDF below. My spouse and I own a home and live full time in The Mesa planned community adjacent to the Town of Patagonia. ADEQ is supposed to act to protect the environment and the quality of water resources, prevent water and air pollution and protect the preservation and enhancement of natural beauty. Issuing the Permit would allow the dangerous discharges of mine water into the Patagonia Mountains and Harshaw/Sonoita Creek watershed: sources of our drinking water, air, soil, and biological diversity. Monitoring must be done more frequently to protect local residents from elevated levels of contaminants such as arsenic, cyanide, cadmium, lead, mercury and uranium. The requirement to monitor manganese and sulfate must also be added to the Permit as these contaminants are likely to be present in the discharged wastewater. The Hermosa project is a brand new mine, not a continuation of a historical mine. No buildings or structures remain from the historic activities which bear no resemblance to the massive and destructive large-scale industrial mine currently being constructed. The Hermosa project should be considered a "new source" under the Clean Water Act, and subject to all the modern performance standards and requirements of the Clean Water Act. I ask ADEQ to fulfill their responsibility to enforce the discharge provisions of the Clean Water Act to protect human health and the environment as required by law.

ADEQ's Response:

The permit does not allow dangerous discharges of mine water. South32 utilizes modern treatment systems to ensure the discharge meets all Clean Water Act and Arizona state law

requirements. The permit contains effluent limitations, assessment levels, and monitoring requirements to ensure the designated uses of Alum Gulch and Harshaw Creek are protected. For information about monitoring frequencies, see ADEQ's response to comments 9 and 11. For information about manganese and sulfates, see ADEQ's response to comment 8. For information about "new source", see ADEQ's response to comment 1. ADEQ is required to issue an individual AZPDES permit to a facility that meets all legal requirements, see ADEQ's response to comment 30.

Comment 265
Thomas Nelson
Written Comment

Comment 265:

I urge ADEQ to reconsider its position to approve APP for the Hermosa Mine/South 32 project. The eventual consequences that the surrounding community will suffer due to toxic water quality, lives will be disrupted, not to mention the dire effects it will have on wildlife natural habitats. This is a tragedy that can be avoided. A foreign mining company will have no ethical or moral responsibility and will only be seeking profit at the expense of Arizona citizens [sic] health.

ADEQ's Response:

This response to comments addresses comments on the individual AZPDES permit for the January Mine Hermosa Project. The aquifer protection permit (APP) was not part of the public notice and is not addressed in this response to comments. ADEQ is committed to protecting human health and the environment. See ADEQ's responses to comments 19, 20, and 21. ADEQ is required to issue an individual AZPDES permit to a facility that meets all legal requirements, see ADEQ's response to comment 30.

Comment 266
Michael White
Oral Comment

Comment 266:

Thank you very much. Good evening. My name is Michael White and I am a 15-year resident of Santa Cruz County and a 28-year resident of Arizona. I read a very inspiring vision statement today on the internet. I'd like to share with everybody it reads quote, "to protect and enhance public health and the environment in Arizona through consistent science-based environmental regulation and clear equitable engagement and communication with integrity, respect, and the highest standards of effectiveness and efficiency because there is only treasure the unique environment of our state and its essential role in sustaining well-being and economic vitality today and for future generations." Anyone want to guess where I found that? It was on the ADEQ website homepage.

So I would like to consider these high ideals that are stated there with respect to South 32's proposed renewal of the AZPDES discharge permit number AZ0026387. I understand the earlier mine at the South32 mountain site was closed down in the 1960s and that now this site has been treated as a continuation of that mine and as such the standards for this operation will not be updated to include protections that are now in place. That is ADEQ will not require South32 to meet the new higher standards. Imagine if you will if the president of the Ford Motor Company proposed that their new 2024 trucks be allowed to adhere to the same emission standards that the EPA set in the 1960s. Everyone

would consider that as a prosperous idea and even the executive of Ford itself would likely not consider making such a proposal and yet the situation of South32 is exactly parallel. Now regulations naturally evolve over time to meet the new needs and circumstances and ADEQ's own staff no doubt had a major hand in creating and crafting these updated regulations so why on earth would ADEQ go back 60 years and allow South 32 to operate on these same these antiquated regulations and not uphold your own standards that your own scientists and staff members have crafted?

So in all honesty I am only asking you to live up to your own publicly stated ideals. Hold South32 to this higher standard please please don't make a mockery of your own mission statement and for our friends at South32 since you claim to be so environmentally sensitive why are you not voluntarily offering to adhere to these same new higher standards. In closing I reference and incorporate the Patagonia Area Resource Alliance comments into my comments thank you.

ADEQ's Response:

ADEQ is using all of the authorities of the Clean Water Act to protect human health and the environment. The permit meets all requirements of the Clean Water Act and applicable Arizona statutes. The discharge limitations in the permit are more stringent than the new source performance standards (NSPS) that would be applied if the facility was a "new source" and is not allowing South32 to comply with outdated standards. For information regarding "new source", see ADEQ's response to comment 1.

Comment 267

Ernie Edwards

Written and Oral Comment

Comment 267:

Do you know that area expert, Floyd Gray, recently retired of USGS, recently completed a Sonoita Creek soil pollution analysis which was a part of a 2012 University Of Arizona thesis on metal accumulation in plants, showing that those metals originate from Harshaw Creek and other watersheds due to natural leaching and to legacy mine acid discharges?

So how is it that ADEQ can even consider such a high level of discharge of supposedly clean water approximating 6.5 million gallons per day which will be capable of great carrying capacity, to further metal mobilization from Harshaw Creek, putting all downstream aquifers at risk, including the one feeding the municipal water wells of the Town of Patagonia and eventually further contaminating Lake Patagonia?

Can you explain the science behind the recent ADEQ posting at the marina at Lake Patagonia suggesting a limit of fish consumption for adults to be 6 oz. per week, pregnant women and children at half that level with a recommendation even lower than those levels for consumption of catfish?

Conversations with ADEQ personnel have them telling me that there is no record of that poster showing low consumption levels. However, there are many people who distinctly remember that poster.

Now that original poster is replaced by a poster suggesting that with the exception of catfish, all species are now safe to eat with no limits. So I call ADEQ and I say show me the science. How did you guys determine that we have an impaired lake before and how did you determine that we have a safe lake

now? So they sent me stuff, doesn't make any sense, doesn't have a date and they said oh by the way there wasn't a poster there before.

So I guess new glasses are in order but anyway I saw it the poster. Many other people saw the poster and and [sic] did their fish consumption based on the recommendations of ADEQ. So why am I bringing this up? It's a credibility issue. We're relying on them to keep us safe so we were thinking that they're keeping us safe on the fish but as soon as the the [sic] political process changes and there's a reason to take that poster down it disappears. So how are they going to keep us safe here where there comes the water and the manganese?

Can you explain how Lake Patagonia went from impaired status to safe status?

Do you really expect the public to believe that they can eat as much fish as they want with no dangers to their health?

Having a friend who is a mental vegetable from eating too much fish contaminated by poisons in a lake, I find it hard to feel safe to follow your recommendations.

Can you please publish the science that substantiates your changing the Lake from impaired to safe?

Please accept my endorsement of the comments submitted by Patagonia Area Resource Alliance as they regard this permitting issue.

ADEQ's Response:

The AZPDES program does not have authority to regulate the mobilization of downstream pollutants, see ADEQ's response to comment 20. ADEQ is committed to protecting human health and the environment. See ADEQ's responses to comments 19, 20, and 21.

ADEQ will not address comments regarding the Clean Water Act Assessments in this response to comments for an AZPDES permit. For information about the Assessment and impairments, please see <https://www.azdeq.gov/SW-monitoring-n-assessment>.

While not a component of this AZPDES permit, information about Fish Consumption Advisories can be found on ADEQ's website at the following link: <https://azdeq.gov/fca>. ADEQ routinely collects data to update fish consumption advisories and will remove an advisory if fish tissue sampling shows the fish are safe to consume. ADEQ most recently assessed fish tissue data from Patagonia Lake in August 2022. The outcome of that analysis can be found on ADEQ's website: [https://azdeq.gov/press-releases/Fish-Consumption-Advisory-Santa-Cruz-County#:~:text=ADEQ%20recommends%20that%20adults%20limit,\(uncooked%20weight\)%20per%20month..](https://azdeq.gov/press-releases/Fish-Consumption-Advisory-Santa-Cruz-County#:~:text=ADEQ%20recommends%20that%20adults%20limit,(uncooked%20weight)%20per%20month..)

Comment 268
Rita Bradley
Oral Comment

Comment 268:

I think myself and many of my neighbors don't think that it matters much that we talk to you, but we hope it does. I was in Banámichi, Mexico for a wonderful tour that our museum created, and they had

just had a monsoon flood from a mine that had taken the water, had ruined the water all the way down the Sonoran River, which is not far from here. Big monsoon, big climate event, and every house had a big tower with water that was being supplied by the mine, because they couldn't use their own wells. So my background is that I went to a program that the state offered for seniors who wanted to help out. It was called Master Watershed Steward, and after taking this 13-week course, I needed to do 100 hours.

My first 100 hours were at Patagonia Lake, and at the Patagonia State Natural Area, which is 10,000 acres below the lake, some of it belongs to Fish and Game. And so I became very involved with protecting Sonoita Creek for the lake, which receives a certain number of acre feet by law from the lake, except for the year in which the wheel on the dam broke and they couldn't get water. But that water was to keep alive all the species that we have. Now we have a state park with thousands of campers, fishermen, voters, children, families swimming, and that park has significantly silted in due to monsoon activity, and it will certainly be affected by the water that's coming down. Thousands and thousands of people use that park constantly, and that Sonoita Creek Park is going to be affected by when it comes out of Harshaw. I'm concerned we did riparian studies for the last decade with Friends of Sonoita Creek for the habitat for animals. We have over 300 species of birds, we have tourists from all over the world. It's going to affect our economy, it's going to affect our tourism, it's going to affect all the species. And I hope that you'll both take into consideration the legal things that PARA has put forward that all of these other speakers have spoken about, and really consider a way to save the environment.

ADEQ's Response:

ADEQ is committed to protecting human health and the environment. See ADEQ's responses to comments 19, 20, and 21. The AZPDES program does not have the authority to regulate the flow or volume of water discharged by a permittee.

Comment 269

Tina Brubaker, Joe Harding, Yuri Hauswald, Emily Kachorek, and Z S

Written Comment

Comment 269:

I am a resident of Patagonia and STRONGLY oppose the renewal the AZDPES for the South 32 Hermosa Mine. Water is our most precious resource and it needs to be protected and valued for all its benefits. I am referencing, full support and I am including PARAs comments as part of my comments. The proposed discharge permit will allow dangerous discharge into our waterways, drain our life giving aquifer which the town of Patagonia relies on for drinking water. It threatens the health of the community, residents and greater environmental area. Fact 1 - South 32 Hermosa is a CLEARLY A NEW MINE. The old mine in the similar site was closed down. And all legal steps need to take the NEW mine into consideration. No permits should be given without that consideration. ADEQ needs to live up to the standards set out in the ADEQ mission statement. Fact 2 - the proposed monitoring are insufficient! Monitoring need to account for manganese and sulfate (among other toxic heaves metals) baselines need to be set and monitoring need to random as well as conducted at much more frequent intervals. Additionally, monitoring need to be done by an independent monitoring agency, NOT by the permit holder / potential polluter, South 32. TMDL analysis needs to be completed for the Zinc in Sonoita Creek before issuing the permit. Wast load allocation for the discharge into Sonoita Creek MUST be preformed. This is mandated by the Clean Water Act. Fact 3 - Santa Cruz County has been deemed in a multi-year extreme drought. The use of 6.5 million gallons of water being polluted and discharged is absolutely unacceptable under these conditions. Fact 4 - ADEQ discharge location is in reality in Upper Harshaw Creek, not Lower Harshaw as falsely claimed. The permit must take the impairments of Lower Harshaw Creek into consideration. The true ongoing

discharge must be calculated in the proposed permit. We expect our State agencies to be true to their mandate - "To protect and enhance public health and the environment in Arizona. Through consistent, science-based environmental regulation..."

ADEQ's Response:

The permit does not allow dangerous discharges of mine water. South32 utilizes modern treatment systems to ensure the discharge meets all Clean Water Act and Arizona state law requirements. ADEQ is committed to protecting human health and the environment. See ADEQ's responses to comments 19, 20, and 21. For information about "new source", see ADEQ's response to comment 1. For information about manganese and sulfates, see ADEQ's response to comment 8. For information about monitoring frequencies, see ADEQ's response to comments 9 and 11. The Clean Water Act discharge permitting program, administered by ADEQ as the AZPDES program, is designed by law to require permittees to conduct monitoring, see ADEQ's response to comment 37. For information about the Sonoita Creek, see ADEQ's response to comment 7. The AZPDES program does not have the authority to regulate groundwater pumping. See ADEQ's response to comment 19. See ADEQ's response to comment 3 regarding the location of Outfall 002.

Comment 270-272

Celinas Ruth

Written and Oral Comments

Comment 270:

I am a Human Rights Minister with the Temple Community in Rio Rico, AZ where I live. I also practice law with the nonprofit Global Family Legal Services.

The proposed renewal of the DISCHARGE PERMIT TO South32 Hermosa, Inc. must be taken very seriously as it affects the lives of all in our communities and the County land & water forever.

Fact #1 THIS IS A NEW MINE

1. Some historic mining done on a small portion of the Hermosa Project site does not exempt South32's new mine workings, shafts, structures, and facilities from being considered a "new source" under the Clean Water Act.

Comments:

- 1. THEREFORE: ADEQ must determine these new facilities are legally "new sources" of discharge – before issuing this renewed Permit.*
- 2. AND ALSO: ADEQ must revise the Permit to acknowledge this mine is expected to go into production during the life of this Permit.*
- 3. AND MOST important: As a new source, the mine is subject to all modern performance standards & requirements of the Clean Water Act.*

ADEQ's Response:

For information about "new source" and the mine being expected to go into production during the life of the permit, see ADEQ's response to comment 1.

Comment 271:

Fact #2 MANGANESE AND SULFATE ARE PRESENT.

2. ADEQ is allowed to revise the Permit & monitor for manganese and sulfate. Both minerals can harm human health and damage or destroy entire water systems. As the Hermosa Project is a zinc, lead, silver, and manganese mine, these contaminants will likely be present in the discharged wastewater.

Comment:

1. THEREFORE: Before issuing a renewed Permit ADEQ must revise the Draft Permit to require monitoring for manganese and sulfate to protect human health, the drinking water systems, and infrastructure of Patagonia & residents in the area.

ADEQ's Response:

For information about manganese and sulfate, see ADEQ's response to comment 8.

Comment 272:

Fact # 3 MORE MONITORING IS REQUIRED.

3. The Draft Permit contains monitoring requirements for additional testing very infrequently.

Comment:

1. THEREFORE: ADEQ must revise the Draft Permit to require this important monitoring be done at least monthly. But more frequent or random monitoring would be best to adequately protect human health.

The Patagonia Area Resource Alliance (PARA's) is making comments regarding this Draft Permit. By my reference to them, I now request you incorporate their comments into my comments.

ADEQ's Response:

For information about monitoring frequencies, see ADEQ's response to comments 9 and 11.

Comment 273-275

Joan Card, The Nature Conservancy

Written Comment

Comment 273:

This firm serves as outside counsel to The Nature Conservancy ("TNC") and submits these comments on TNC's behalf. The Nature Conservancy is a non-profit, non-governmental charitable organization whose mission is "conserving the lands and waters on which all life depends." In Arizona alone, TNC has protected more than 1.5 million acres of lands important to people and wildlife and has harnessed science and partnerships to keep Arizona rivers flowing and its forests and grasslands healthy.

Over 50 years ago, in 1966, TNC purchased its first property in Arizona, the Patagonia-Sonoita Creek Preserve ("the Preserve"), which protects three miles of perennial Sonoita Creek in and just downstream from the Town of Patagonia. The Preserve consists of two land parcels, one at the confluence of Harshaw Creek and Sonoita Creek and the other approximately one-half mile downstream of the confluence. See the enclosed map.

In the Preserve, TNC protects the rare cottonwood-willow riparian habitat that supports an assemblage of native fishes, which are some of the last remaining of such species in the Santa Cruz River Watershed. Sonoita Creek at and downstream of the Preserve is one of the very few streams in Arizona that supports

four or more native fish species. In addition, the Preserve provides habitat for federally listed threatened and endangered species, including the Huachuca Water Umbel, Mexican Garter Snake, Yellow-billed Cuckoo, and Gila Topminnow. People come from all over the world to visit the Preserve to see the hundreds of species of birds that migrate, nest, and live in this truly special desert riparian habitat. In addition, beyond the bounds of its property at the Preserve, TNC works collaboratively with other organizations, agencies, and private landowners to achieve effective conservation outcomes and ecosystem resilience across the greater Sonoita Creek watershed. TNC convened a group of local stakeholders to develop and implement the collaborative Sonoita Creek Watershed Management Plan. TNC also has engaged directly with people at South32 Hermosa Inc. and its affiliates to monitor water quality and quantity at the Preserve and begin a dialogue assessing other potential impacts of their operations in the watershed.

Given TNC's overall mission, its conservation vision for the Sonoita Creek watershed, and its property interests in the Preserve, TNC maintains an interest in the South32 Hermosa Inc. AZPDES Permit No. AZ0026387, both the currently proposed renewal and its ongoing administration. When the referenced permit was modified in July 2021, TNC participated in the public comment phase due to TNC's concerns about the proposed new outfall 002 to Harshaw Creek for the discharge of approximately 6.5 million gallons per day (MGD) of groundwater from the mine's water treatment plant. Among other things, at that time, TNC identified the need for water quality-based effluent limitations rather than the much less stringent technology-based effluent limitations originally proposed by ADEQ. Additionally, TNC expressed its concern that the continuous discharge of 6.5 MGD to Harshaw Creek may impact water quality on TNC lands at the downstream confluence with Sonoita Creek and the portion of the Preserve with perennial flows.

In the context of the current proposed renewal of the AZPDES permit, TNC continues to be concerned about the potential impact of the permitted discharge to Harshaw Creek on water quality and chemistry in Harshaw Creek and Sonoita Creek and its potential to degrade water quality in the perennial segment of Sonoita Creek in TNC's Preserve. The ADEQ draft fact sheet states that the effluent limitations in the draft AZPDES permit are derived from the designated uses that apply to both "Lower Harshaw" and "Upper Sonoita Creek" "because there is no difference in downstream designated uses" and "the designated uses of Lower Harshaw Creek are protective of downstream waters." See page 9. These statements are problematic. First, these stream segment designations are not defined in the draft fact sheet nor, more importantly, are they identified in Arizona surface water quality standards. See A.A.C. R18-11-123 Appendix B. Also, while the designated uses of the portion of Sonoita Creek from the Town of Patagonia WWTP outfall for approximately 1600 feet are the same as Harshaw Creek, the designated uses in the next segment of Sonoita Creek and through the perennial section of TNC's Preserve are different. In the Preserve, instead of ephemeral uses for aquatic life, warm water aquatic use applies; instead of partial body contact, full body contact use applies; and the additional uses of fish consumption and agricultural irrigation also apply.

ADEQ's Response:

The designated uses of Upper Sonoita Creek are provided for additional context only. ADEQ has updated the fact sheet to clarify that by "Upper Sonoita Creek," ADEQ is referring to the segment of Sonoita Creek from headwaters to the Town of Patagonia WWTP outfall at 31°32'25"/110°45'31" as identified in A.A.C. R18-11-123 Appendix B.

The distinction between Upper and Lower Harshaw Creek is based on the segments having two different waterbody IDs. Upper Harshaw Creek is defined as the headwaters to 31°27'43.9" N,

110°43'21.1" W. This segment of Harshaw Creek is impaired. Lower Harshaw Creek is defined on page 7 of the fact sheet as the segment of Harshaw Creek from 31°27'43.9" N, 110°43'21.1" W to Sonoita Creek at 31°32'35.91" N, 110°44'45.12" W. The definition of Lower Harshaw Creek is the definition for waterbody ID 15050301-025B. This segment is not impaired.

ADEQ acknowledges that the designated uses of the next segment of Sonoita Creek and through the perennial section of TNC's Preserve are different from those of Lower Harshaw Creek.

Comment 275:

Accordingly, it is not correct for the fact sheet to state or ADEQ to presume that standards protective of Sonoita Creek's designated uses at the confluence with Harshaw Creek ensure that the fish and other aquatic life in the perennial waters of the Preserve are fully and adequately protected.

Further, the authorized future discharge of 6.5 MGD will seemingly have a major impact on the flow regime of Harshaw Creek and thus a potential if not likely impact on the flow regime in Sonoita Creek and in the Preserve. In the context of the 2021 modification of AZPDES Permit No. AZ0026387, apparently ADEQ relied on the August 17, 2020, Ecological Resource Consultants, Inc. Technical Memorandum submitted by South32 (at the time, Arizona Minerals Inc.) to conclude that the permitted discharge would not reach or otherwise impact Sonoita Creek. Based on assumptions modeled by the South32 consultant, the Technical Memorandum suggested that the authorized discharge of 6.5 MGD would infiltrate upstream of the Harshaw Creek confluence with Sonoita Creek. The reference in ADEQ's draft fact sheet to Sonoita Creek's designated uses suggests that ADEQ assumptions about the flow regime or expected downstream impacts from the authorized discharge may have changed since the 2021 permit modification. Given ADEQ's reference to the relevance of Sonoita Creek's designated uses in the current draft fact sheet, have ADEQ's assumptions changed about the extent of the surface flow of the permitted discharge? If so, what is the change and its basis? Also, if the discharge flows reach or otherwise impact the perennial waters of Sonoita Creek, how will ADEQ and South32 ensure the discharge does not degrade water quality or otherwise harm the aquatic ecosystem in the Preserve's perennial waters?

ADEQ's Response:

Neither the 2021 permit modification or the current permit renewal made a determination whether the discharge would reach Sonoita Creek.

ADEQ maintains the same rationale for setting permit limitations that are protective of downstream waters, such as Sonoita Creek, as ADEQ did in the 2021 permit modification. The WQBELs for Outfall 002 are set based on the designated uses of Harshaw Creek. The Clean Water Act at 40 CFR 131.10(b), which A.A.C. R18-11-104(F) addresses, requires states to consider downstream water quality standards when establishing water quality criteria and designated uses for upstream waters. When considering the development of uses and/or criteria that ensure the attainment of downstream water quality standards, ADEQ evaluates if the downstream waters are protected by more stringent or additional criteria than those proposed for the upstream water. ADEQ does this by calculating the potential maximum pollutant concentration and load created by the less stringent criteria in the upstream reach, and determining if that pollutant contribution input would cause an exceedance of the downstream standard. If Agency calculations show that any exceedance would occur, more stringent criteria are assigned to prevent any exceedances. In addition, ADEQ considers the potential of bioaccumulation of the pollutant and the presence of any sensitive or rare aquatic species

and/or species with particular economic or social importance which may exist downstream. In short, ADEQ cannot propose criteria for water quality standards in upstream waters that have the potential to contribute to a criteria exceedance of downstream water. For more information on water quality standards, including current rulemaking efforts to ensure criteria is protective of designated uses, visit <https://azdeq.gov/surface-water-quality-standards>.

ADEQ will ensure the protection of the Preserve's perennial waters through our monitoring and assessment programs. Every two years, the Clean Water Act § 305(b) and § 303(d) requires ADEQ to assess the health of Arizona surface waters against established standards. The 2024 Clean Water Act Assessment (Assessment) did not identify any new impairments to Sonoita Creek. The Assessment included sampling results for 24 pollutants within Sonoita Creek; the number of samples for each pollutant ranged from 1-22. The Assessment also proposes to delist a segment of Sonoita Creek (waterbody ID: 15050301-013C) that was impaired for zinc as more recent data demonstrates the segment is meeting surface water quality standards.

Comment 276:

Despite these noted questions and concerns, TNC appreciates other aspects of ADEQ's approach to the permit renewal, including the addition of mass-based effluent limitations, increased monitoring frequency and discharge characterization testing, WQBELs for discharges from outfall 001, and the afore-mentioned consideration of designated uses for Sonoita Creek (if not entirely correctly) rather than solely those of Harshaw Creek. Nevertheless, preserving or improving the existing water quality in Sonoita Creek's perennial waters in the Preserve is a priority for TNC. TNC requests ADEQ's consideration of that in the final version of the permit renewal and its ongoing permit administration and enforcement efforts.

ADEQ's Response:

ADEQ appreciates TNC's comments on the permit and looks forward to working with TNC in future efforts.

Comment 277-283

Robert Gay

Written and Oral Comments

Comment 277:

Good evening, y'all, and thanks for all of the listening on all sides of all tables here. It's difficult to hear some of this stuff, but these are difficult times we live in, so I accept the challenges of that discomfort. My name is Robert Gay, and I'm a delightful, delightfully engaged Patagonian for a decade or so, Southern Arizona before that. And I live at a point which is approximately 400 feet from the junction of Harshaw Creek and Sonoita Creek.

But I want to speak to you about the upper part. I am an amateur cartographer, and I make maps for all sorts of purposes around here. Trails, for example, and I've also made parcel maps for Santa Ritas, Borderlands Restoration Network, and others. A little skinny watershed project that a school can recently, that was a whole watershed map. The watershed map of Harshaw Creek is the real subject of what these permits are actually about and what this discharge is going to affect. And it's this very interesting two-part thing, flooding on one side, potentially, saturation of the ground, modification of the aquifers, and desiccation on the high side. The dewatering is intended to remove water from an immense

area of the mountains. So the model under which ADEQ ought to be operating is an entire watershed model.

And I want to speak about the cone of depression and the upper end of the mountain. I haven't had time to prepare remarks on this, we're going to hear. We have been talking primarily about discharge as a discharge permit, but it is effects that have been brought up. Michael Stabile, for example, the effects of this action of what need to be studied in an ecological, whole watershed way.

So that's been questioned after the proposal was first brought up in a number of ways. But in the course of that South 32 published a movie that was called How We Manage Our Waters, I think. I'm not sure I have the title exactly, but it was a three-minute movie.

PARA also has done a ten-minute movie, the same thing. In this movie, the cone of depression is pictured as a gauzy blue ring that sits on top of the mountains. And it has these lines funneling down to the wells. This is all very diagrammatic, very cartoony, and it was extremely fast. I studied the movie, the three-minute movie.

The cone of depression was given three seconds. So that's what you get. The movie itself was glib, fast-paced, oh crap. This is what happens when you don't prepare your remarks. There's some re-ins that the cone of depression ought to be studied very carefully for ecological events.

ADEQ's Response:

The AZPDES program does not have the authority to regulate groundwater pumping or the flow or volume of water discharged. See ADEQ's response to comment 19.

Comment 278:

Hello, and I hope I can thank you for listening to us, the people you serve. I appreciate the opportunity to make a fuller presentation of a web of thought about the current water permit proposal than can be fitted into the three minute public hearing slot. My name is Robert Gay and I live in Patagonia about 400 ft from the junction of Harshaw and Sonoita Creeks. I'm an amateur cartographer who has been mapping various aspects of the Patagonia area for the decade I've lived here. These maps have been for the town and three of the area's conservation groups. They've included trails, parcels, ownership types, mining claims, watercourse and watersheds.

1. I'd like to speak about the upper part of Harshaw Creek, what's upstream of the proposed Hermosa Project water discharge point. Because of the drama of massive downstream flows and the complexity of aquifers and surface conditions, the human impacts in the town and to the aquifer that supplies our drinking water, have been the focus of the attention and comments thus far.

2. The company's stance has been that if they deliver OK water to the edge of their property, that's all they're responsible for. But watersheds do not work that way: they are a branched tree throughout the whole watershed, and THAT is what your department is charged to protect. It is not just the humans that are at risk, it is about three levels of the critically biodiverse Sky Island range.

ADEQ's Response:

ADEQ regulates impacts to aquifers through an Aquifer Protection Permit (APP). For more information about APP, see ADEQ's website:

<https://www.azdeq.gov/APP/ComplianceAssistance>.

The AZPDES permit contains effluent limitations, assessment levels, and monitoring requirements to ensure the designated uses of Upper Alum Gulch and Lower Harshaw Creek are protected. ADEQ is committed to protecting human health and the environment. See ADEQ's responses to comments 19, 20, and 21.

Comment 279:

The January Mine Hermosa Project may cause manganese air pollution.

ADEQ's Response:

South32 has applied for an Air Quality Permit. ADEQ proposed the permit and is in the process of responding to public comments. ADEQ must share the draft permit with EPA Region 9 after the responses are prepared for a mandatory 45-day review period. EPA can either accept or object to the permit at the end of the review. If EPA objects, ADEQ will need to resolve those objections in a timely fashion prior to taking final action. For more information about the air quality permit, please contact airpermits@azdeq.gov.

Comment 280:

There is a side story that gives insight into the political aspect of the operating methodology of South32. The Northern Territory's chief minister, Natasha Fyles, was recently forced to resign over an ethics scandal, one of several she's experienced. Fyles failed to declare 754 shares in South32. Fyles had denied requests to investigate air pollution levels or health impacts of South32's manganese mine on Groote Eylandt. This raised the issue of a conflict of interest.

The importance of these revelations to Arizonans is that it points to the likelihood that South32 receives benefits from powerful shareholders, with whom it likely has backroom conversations. Why else would Ms. Fyles block a health investigation long called for by the affected locals near the mine and its shipping terminal? Locally the ethics issue of possible influence of ADEQ CEO Karen Peters' possible influence from South32 via her husband, South32 attorney Chris Thomas. Informally I've heard she recused herself from PARA's legal actions against the Department. When, at a December Santa Cruz County Supervisors South32 Update presentation by President Pat Risner, he was asked about this seeming conflict of interest, Risner replied that they'd had their legal team [sic] look into and were satisfied that there was no ethical issue. People I talked with afterwards were not remotely satisfied by the response, finding it to be quite consistent with Risner's frequent use of phrases like "we've had our consultants look into it, and there's no problem."

ADEQ's Response:

Karen Peters, Cabinet Executive Officer (CEO) & Executive Deputy Director (EDD) of ADEQ, has recused herself from the permitting process for South32 from her very first day as the appointed Director (now CEO). Amanda Stone, Deputy Director of ADEQ, is overseeing this permitting decision instead of CEO Peters.

Comment 281:

The possibilities of ecological and hydrological consequences downstream (disruption to wildlife, aquifers, residences and town infrastructure) have been well commented on, but the "cone of depression" has not received much attention in the community's, and apparently the Department's review of the dewatering proposal. My study of the Cone model scared the pants off me, and I concluded the horrors of 37 square miles of eventual dessication and plant death mean we are considering a Cone of Devastation. That's the title of an article I wrote this summer for the August-September issue of the

Patagonia Regional times, which you can find here, or on the next page. The 37-square-mile potential for radical ecological damage deserves very serious study of possible scenarios, at the level of a full environmental impact assessment which explores the potential of dewatering to dessicate the north portion of the entire Patagonia Mountains. To now issue a permit for the multi-decade dessication of this much territory is to give the company permission to evade the very sound and tested Federal provisions of the Environmental Protection Act. 37 square miles is 23,680 acres, roughly 43 times the project acreage currently undergoing its own scale of devastation. And I'd add that the company has not published any closure and remediation plans, so the Asarco-like legacy of enduring pollution, at a much bigger scale, seems guaranteed. PARA's parallel video, 5 minutes long, is at <https://youtu.be/y2eeMLpPzpg>.

WHEN SOUTH32 RELEASED A 3-MINUTE FILM THIS SPRING, TITLED GROUNDWATER MANAGEMENT AT OUR HERMOSA PROJECT. 3 SECONDS OF IT SHOWED THE CONE OF DEPRESSION, and as an amateur cartographer I located its extent on the ground: a 5 mile circle which reaches from Red Mountain to Apache road, where I have friends and from THREE-R canyon on the west to Harshaw Creek Road, where I also have friends. This conceptual circle <https://patagoniaregionaltimes.org/cone-of-devastation>.

ADEQ's Response:

The AZPDES program does not have the authority to regulate groundwater pumping or the flow or volume of water discharged. See ADEQ's response to comment 19.

Comment 282:

One of the speakers at the Jan 11 Patagonia Hearing, name of Kazarian Giannangelo, brought up, in a light way, the possibility that you as an agency, have the power to deny permits, or send them back to the applicant for any form of further study and modification you see as necessary. Were to reject the current version, you would then, in the view all 29 commenters last night, be showing that you serve citizens and wildlife more than corporations, and a foreign one at that.

ADEQ's Response:

ADEQ is required to issue an individual AZPDES permit to a facility that meets all legal requirements, see ADEQ's response to comment 30. The AZPDES program does not have the authority to consider where a company is from as part of the permit decision.

Comment 283:

A bit more Australian South32 history is relevant to know. In 2020, the New South Wales Planning dept rejected a South32 30-year extension plan for its long-producing Dendrobium Coal mine. With its second NSW coal mine, the Appin, about 6 million metric tons of metallurgical coal per year are produced, averaging recent years. Upon the rejection, the company appealed to another agency of the State, one concerned with defense and emergencies, and got around the rejection of their plans by getting coal declared a critical material, since most of their product goes to steel mills. As this was unfolding, they kept using water for mining, from the wetlands above their coal deposits. The wetlands are a part of the catchment area for the city of Sydney, and that city's water utility at the time of the rejection mentioned above, had said of south32's expansion plan, that it was flawed and should be sent back to the drawing board, the sequence I'm suggesting to you as a minimum, unless you find the courage and support for outright rejection.

In July of 2023, as reported by ABC News of Australia, South32 was fined 2.9 million (presumably Australian dollars) for diverting drinking water for 5 years without a permit, at the Dendrobium mine.

This bit of their global track record should make you very concerned about how the company might treat your permit. The Calabasas Alliance has gathered a list of about a dozen other “bad neighbor” behaviors and issues of South32’s various global ventures and it’s a startling pile of evidence on just what kind of entity we are dealing with. They can be reached at <https://youtu.be/y2eeMLpPzpg>, or through any of the Alliance’s speakers on the list from the January 11 hearing.

ADEQ’s Response:

ADEQ ensures AZPDES permittees are complying with all permit requirements. For more information about ADEQ’s inspections and compliance enforcement, see ADEQ’s response to comment 30. AZPDES permittees have a duty to comply with their permit per A.A.C. R18-9-A905(A)(3)(a), which incorporates 40 C.F.R. 122.41(a)(i), and A.R.S. §49- 262, 263.01, and 263.02.