

October 15, 2026

Corin Hammond
Environmental Specialist, Permit Writer
Arizona Department of Environmental Quality
1110 West Washington Street
Phoenix, Arizona 85007

**Re: Application for Amendment of AZPDES Permit No. AZ0026387
Hermosa Critical Minerals Project
Santa Cruz County, Arizona**

Dear Ms. Hammond,

South32 Hermosa Inc. (South32) is hereby submitting an application to amend its Arizona Pollutant Discharge Elimination System (AZPDES) Permit No. AZ0026387, which authorizes discharges from an existing historic mine property southeast of Patagonia, Arizona. Under this permit, South32 is authorized to discharge up to 4,500 gallons per minute (gpm) of treated water (consisting primarily of groundwater) from Water Treatment Plant # 2 (WTP2) into an unnamed ephemeral tributary of Harshaw Creek at Outfall 002.

South32 is seeking this amendment to allow the discharge of a portion (up to 1,500 gpm) of the treated water from WTP2 into Goldbaum Canyon, an ephemeral tributary to lower Harshaw Creek. Based upon hydrologic modelling, at 1,500 gpm, the discharge into Goldbaum Canyon (referred to in this application as Outfall 003) will reach lower Harshaw Creek, at a point where discharge from Outfall 002 is already present. This additional discharge location is part of the recently approved U.S. Forest Service (USFS) South32 Hermosa Inc. Critical Minerals Exploration and Mine Plan of Operations that authorizes South32 to conduct exploration and mine development activities on USFS lands adjacent to South32's private property.

WTP2 is designed and operated to treat and discharge non-process water, primarily groundwater from mine depressurization operations, associated with underground exploration and mine development.

The results of Outfall 002 sampling have indicated that the treated water meets all applicable Effluent Limitations (ELs) and Assessment Levels (ALs) in the current permit except for selenium, which exceeded the AL of 2 micrograms per liter (based on the more stringent A&Wedw chronic criterion rather than the A&We acute criterion applicable to Harshaw Creek) in some samples. South32's investigation into the selenium results discovered a failure in a component of the Step 2 treatment process (which is specifically designed to remove selenate). Repairs to that component, as well as other minor WTP2 process modifications were completed by June 2026. Following completion of these activities, South32 conducted accelerated monitoring at Outfall 002 (14 samples) to address their efficacy. The water quality data provided in the Form 2C addendum that is part of this application consists of the data collected since WTP2 repairs and modifications were completed. These data are most representative of future discharge, consistent with 40 C.F.R. 122.21(g)(7)(ix), adopted by reference at A.A.C. R18-9-A905(A)(1)(b) (when

existing data is used to characterize effluent in an application, it should be “representative of the discharge”). No EL or AL has been exceeded in the recent sampling.

The submittal enclosed with this letter is organized as follows:

- Section A: AZPDES Application Form 1.
- Section B: AZPDES Application Forms 2C and 2C Addendum.
- Section C: Supporting Information.
 - Section C.1 – AZPDES APPLICATION FORM 1 - Supplemental Information
 - Section C.2 – AZPDES APPLICATION FORM 2C – Supplemental Information
 - Section C.3 – Memorandum: Regulatory Determination for Mowry Wash

Please contact Paul Nazaryk at (970) 903-1792 or paul.nazaryk@south32.net if you have questions or require additional information for your review.

Sincerely,

Signed by:

EB8BDADC3A5E4C9...

Brent Musslewhite
Director, Environment and Permitting
Brent.Musslewhite@South32.net

Enclosures: AZPDES Application Forms 1, 2C, and 2C Addendum, Form 1 Supplemental Information, Form 2C Supplemental Information, and Memorandum: Regulatory Determination for Mowry Wash

**AZPDES PERMIT AMENDMENT APPLICATION
FOR
AZPDES PERMIT NO. AZ0026387
HERMOSA CRITICAL MINERALS PROJECT, SANTA CRUZ COUNTY, ARIZONA**

Submitted by:

South32 Hermosa Inc.
1860 East River Road, Suite 200
Tucson, Arizona 85718

October 15, 2026

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- A. AZPDES Application Form 1.
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 - Section C.3 – Regulatory Determination for Mowry Wash

SECTION A
AZPDES APPLICATION FORM 1



AZPDES APPLICATION FORM 1 GENERAL INFORMATION

Arizona Department of Environmental Quality
AZPDES Individual Permits
1110 W. Washington Street
Phoenix, AZ 85007

I. ACTIVITIES REQUIRING AN AZPDES PERMIT

INSTRUCTIONS

Complete A through F to determine whether you need to submit any permit application forms to the ADEQ. If you answer "Yes" to any questions, you must submit the form listed in the parentheses following the question. If you answer "no" to each question, you need not submit any of these forms. You may answer "no" if your activity is excluded from permit requirements.

SPECIFIC INSTRUCTIONS	MARK "X"		SPECIFIC INSTRUCTIONS	MARK "X"	
	Yes	No		Yes	No
A. Is this facility a treatment works treating domestic sewage (TWTDSs) which currently discharges, is permitted to discharge, or proposes to discharge to waters of the U.S.? (Form 2A/2S) If yes, STOP. Do NOT complete Form 1. Complete Form 2A/2S.		X	B. Is this a facility which currently does, is permitted to or proposes to treat or dispose of sewage sludge (biosolids) with or without treating domestic wastewater? Or, is this a facility which currently does, is permitted to or proposes to treat domestic wastewater? (Form 2A/2S) If yes, STOP. Do NOT complete Form 1. Complete Form 2A/2S.		X
C. Does or will this facility (either existing or proposed) include a concentrated animal feeding operation or aquatic animal production facility which currently discharges, is permitted to discharge or proposes to discharge to waters of the U.S.? (Form 2B) If yes, complete Form 1 and Form 2B.		X	D. Is this an industrial, commercial or other operation which currently discharges or is permitted to discharge non-domestic wastewater to waters of the U.S.? (Form 2C) If yes, complete Form 1 and Form 2C.	X	
E. Is this an industrial, commercial or other operation which proposes to discharge non-domestic wastewater to waters of the U.S.? (Form 2D) If yes, complete Form 1 and Form 2D.		X	F. Is the facility a new or existing manufacturing, commercial, mining, or silvicultural facility that discharges only nonprocess wastewater? (Form 2E) If yes, complete Form 1 and Form 2E.		X
G. Is this a facility or operation which currently discharges, is permitted to discharge or proposes to discharge stormwater or a combination of stormwater and non-stormwater associated with industrial activity? (Form 2F) Complete Form 1 and Form 2F.		X			

This application is for:	☐ New permit	☐ Permit renewal	☒ Permit modification
If this is a renewal application, Arizona Administrative Code (A.A.C.) R18-9-B904(B) requires that ADEQ receive the renewal application at least 180 days prior to the expiration date of the current permit.			
II. FACILITY INFORMATION		AZPDES (NPDES) Permit No. <u>AZ0026387</u>	
A. Name of Facility: <u>South32 Hermosa Inc.</u>			
B. Facility Contact: (Name & Title) <u>Brent Musslewhite - Director, Environment and Permitting</u>			
C. Contact Phone Number(s): <u>520-485-1300 (off)</u>			
D. Contact Email Address: <u>Brent.Musslewhite@South32.net</u>			
E. Facility Mailing Address: <u>1860 East River Road, Suite 200</u> <u>Tucson, Arizona 85718</u>			
F. Facility Billing Address: <u>1860 East River Road, Suite 200</u> <u>Tucson, Arizona 85718</u>			
G. Facility Location: (Street, Route or finding directions) <u>749 Harshaw Road</u> <u>County</u> <u>Santa Cruz</u> <u>City</u> <u>Patagonia</u> <u>State</u> <u>AZ</u> <u>Zip</u> <u>85624</u>			
H. Latitude/Longitude: <u>Outfall 3</u> (in degrees, minute, sec.) <u>31</u> ° <u>27</u> ' <u>22.15</u> " <u>N</u> <u>110</u> ° <u>41</u> ' <u>43.04</u> " <u>W</u>			
I. Legal Description: Township <u>23S</u> , Range <u>16E</u> , Section <u>3</u> , Quarter <u>SE</u>			
J. Is the facility located on Indian Lands? ☐ YES ☒ NO			
K. Does the treatment works discharge to a receiving water in Indian Country or that is within 100 km (62 miles) upstream from (and/or eventually flows through) Indian Country? ☐ YES ☒ NO If yes, provide name of Tribe and approximate distance from discharge to Indian Country boundary: <u>_____</u>			
L. Is the facility located within 100 km (62 miles) of the Arizona-Mexico border? ☒ YES ☐ NO If yes, provide the following information: 1. A description of the area into which the effluent discharges from the facility may flow <u>WTP2 effluent will be discharged into Goldbaum Canyon, an ephemeral tributary of Lower Harshaw Creek, from Outfall 003.</u> 2. A statement explaining whether the effluent discharged is expected to cross the Arizona-Mexico Border: <u>Discharge is not expected to cross the Arizona-Mexico border as the direction of flow is to the portion of the Santa Cruz River that flows north from border.</u>			
III. FACILITY SIC CODES (4 digits, in order of priority):			
1 st	<u>1031</u>	specify	<u>Mining - Lead and Zinc Ores</u>
2 nd	<u>1061</u>	specify	<u>Mining - Ferroalloy Ores, Except Vanadium (Manganese Ore Mining)</u>
3 rd	<u>1044</u>	specify	<u>Mining - Silver Ores</u>
4 th	<u> </u>	specify	<u> </u>

IV. FACILITY NAICS CODES

1st 212230 specify Copper, Nickel, Lead, and Zinc Mining
2nd 212290 specify Other Metal Ore Mining (Manganese)
3rd 212220 specify Gold Ore and Silver Ore Mining
4th _____ specify _____

V. EXISTING ENVIRONMENTAL PERMITS *(Insert permit number of all applicable)*

AZPDES/ NPDES AZ0026387 UIC (*underground injection of fluid*) Class V wells authorized by rule.
RCRA (*hazardous wastes*) NA PSD (*Air Emissions from Proposed Sources*) 96653
APP (*Aquifer Protection Permit*) P-512235 Reuse NA
Other (*specify*) MSGP AZMSG-81380 Other (*specify*) VRP SITE CODE 505143-02

VI. OPERATOR INFORMATION

A. Name of Operator: South32 Hermosa Inc.
B. Phone Number(s) of Operator: 520-485-1300 (off)
C. Email Address of Operator: Brent.Musslewhite@South32.net
D. Operator's Mailing Address: 1860 East River Road, Suite 200
Tucson, AZ 85718
E. Is the operator identified above also the owner? ☒ YES ☐ NO
F. Status of Operator (*Check the appropriate box; if other, specify*)
☐ F = FEDERAL ☐ M = PUBLIC (*other than federal or state*) ☐ S = STATE
☒ P = PRIVATE ☐ O = OTHER (*specify*) _____

VII. NATURE OF BUSINESS *(Provide a brief description)*

See Section C.1 of application

VIII. MAP

Attach to this application a topographic map of the area extending to at least one mile beyond property boundaries. The map must show the outline of the facility, the location of each of its existing and proposed intake and discharge structures, each of its hazardous waste treatment, storage or disposal facilities and each well where it injects fluids underground. Include all springs, rivers and other surface water bodies in the map area. See instructions for precise requirements.

IX. CERTIFICATION (See instructions)

"I certify, under penalty of law, that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

Name & Official Title (Type or print) Pat Risner, President

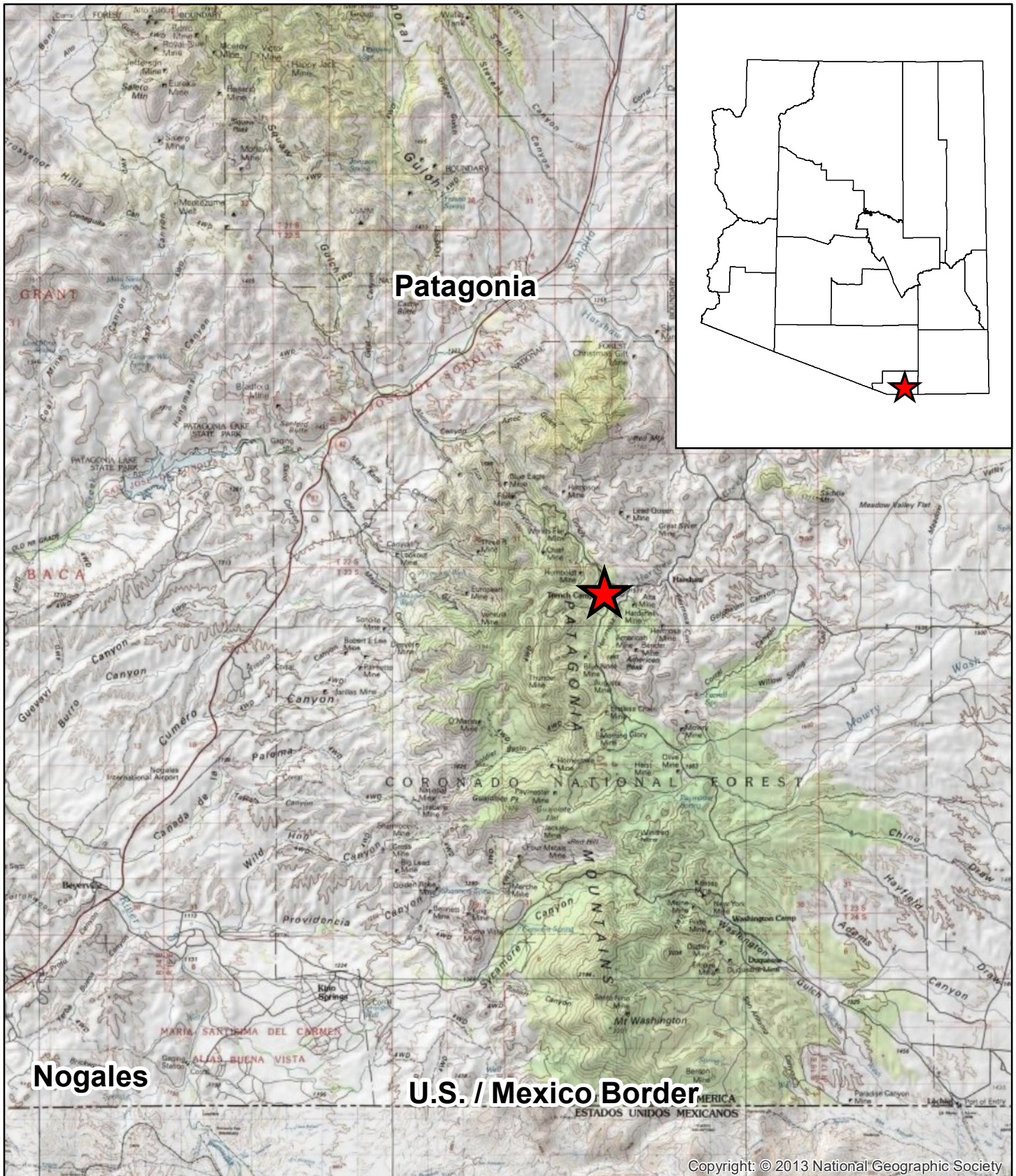
Signature



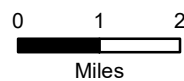
Date Signed 14 October 2026

Pursuant to A.R.S. § 41-1030:

- (1) ADEQ shall not base a licensing decision, in whole or in part, on a requirement or condition not *specifically* authorized by statute or rule. General authority in a statute does not authorize a requirement or condition *unless* a rule is made pursuant to it that specifically authorizes the requirement or condition.
- (2) Prohibited licensing decisions may be challenged in a private civil action. Relief may be awarded to the prevailing party against ADEQ, including reasonable attorney fees, damages, and all fees associated with the license application.
- (3) ADEQ employees may not intentionally or knowingly violate the requirement for specific licensing authority. Violation is cause for disciplinary action or dismissal, pursuant to ADEQ's adopted personnel policy. ADEQ employees are still afforded the immunity in A.R.S. §§ 12-821.01 and 12-820.02.



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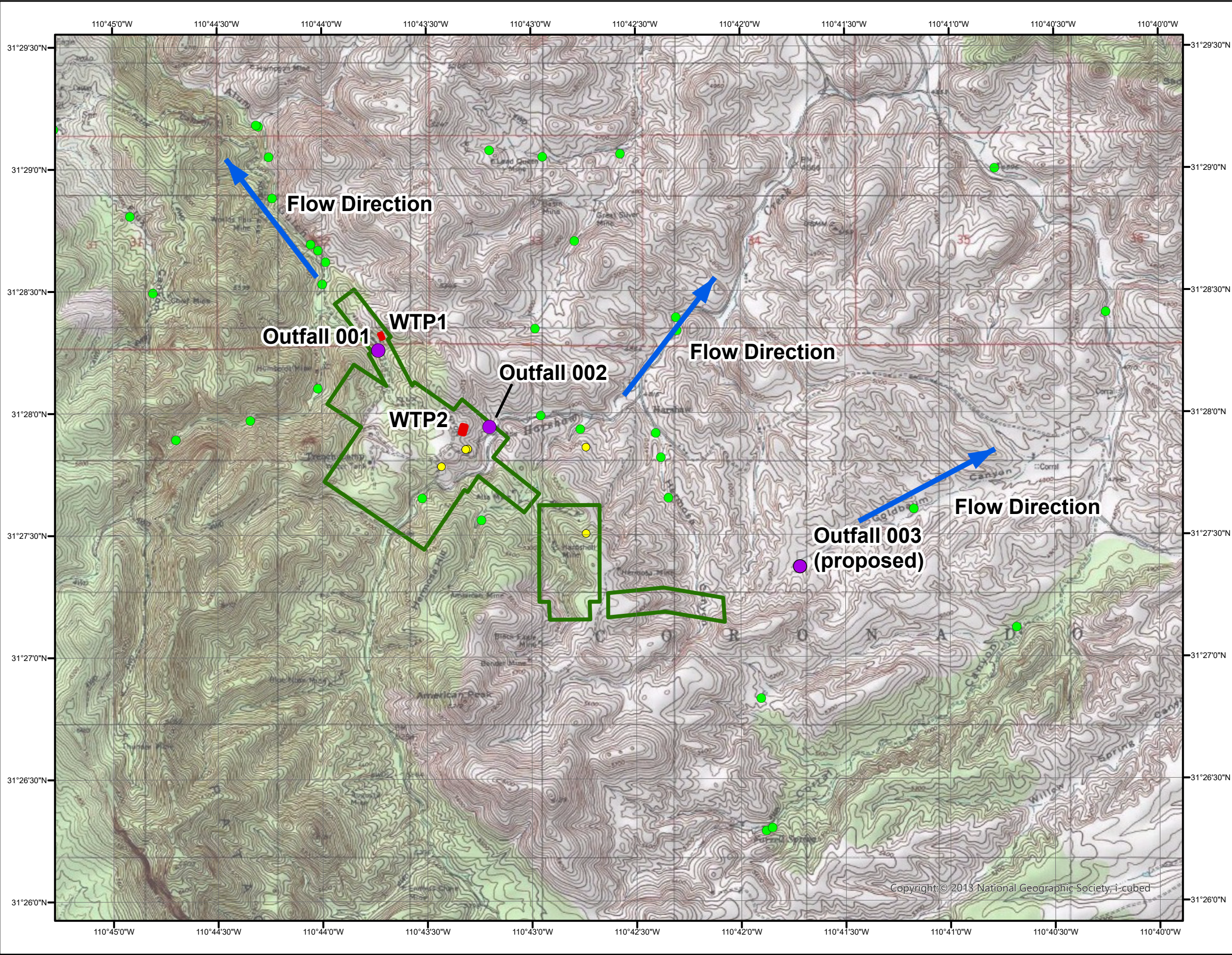


CLEAR CREEK ASSOCIATES

File ID
AZM-132
Date
7/17/2020



Figure 1
Project Location Map



Legend

- South32 Property Adjacent to Outfalls
- Outfall
- Spring*
- Proposed Class V Injection Well
- Water Treatment Plant

* From South32 Hermosa Inc. Seeps and Springs Catalog

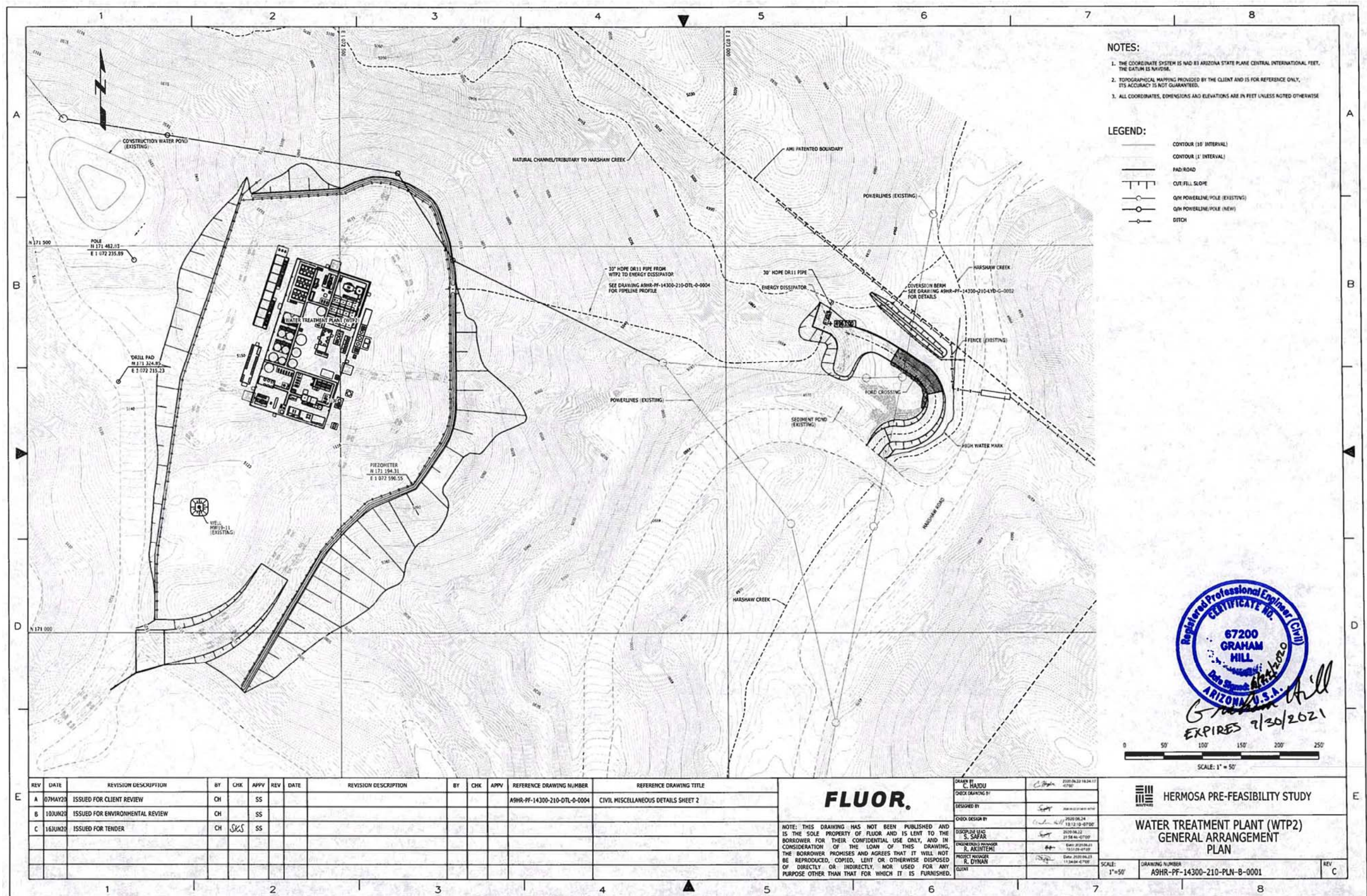
00.51

Miles

Projection: UTM Zone 12N NAD83

Date 10/8/2026	File ID S32-138

Figure 2
Location of WTP1, WTP2,
Outfall 001, Outfall 002,
and Outfall 003



SECTION B
AZPDES APPLICATION FORMS 2C
AND 2C ADDENDUM



AZPDES APPLICATION FORM 2C

Arizona Dept. of Environmental Quality
AZPDES Individual Permits / Water Permits Section
1110 W. Washington Street
Phoenix, AZ 85007

APPLICATION FOR PERMIT TO DISCHARGE NON-DOMESTIC WASTEWATER BY INDUSTRIAL AND COMMERCIAL OPERATIONS

Please print or type in the unshaded areas only

AZPDES (NPDES) Permit No AZ0026387

I. OUTFALL LOCATION

For each outfall, list the latitude and longitude of its location to the nearest 15 seconds and the name of the receiving water.

OUTFALL NUMBER (list)	LATITUDE			LONGITUDE			RECEIVING WATER (list)
	DEG.	MIN.	SEC.	DEG.	MIN.	SEC.	
003	31	27	22.15	110	41	43.04	Goldbaum Canyon, ephemeral tributary
							to Lower Harshaw Creek

II. FLOWS, SOURCES OF POLLUTION AND TREATMENT TECHNOLOGIES

A. Attach a line drawing showing the water flow through the facility. Indicate sources of intake water, operations contributing wastewater to the effluent and treatment units labeled to correspond to the more detailed descriptions in Part II.B. Construct a water balance on the line drawing by showing average flows between intakes, operations, treatment units and outfalls. If a water balance cannot be determined (e.g., for certain mining activities), provide a pictorial description of the nature and amount of any sources of water and any collection or treatment measures.

B. For each outfall, provide a description of: (1) All operations contributing wastewater to the effluent, including process wastewater, sanitary wastewater, cooling water and storm water; (2) The average flow contributed by each operation; and (3) The treatment received by the wastewater. Continue on additional sheets if necessary.

1. OUTFALL NUMBER (list)	2. OPERATION(S) CONTRIBUTING FLOW		3. TREATMENT		
	a. OPERATIONS (list)	b. AVERAGE FLOW (include units)	a. DESCRIPTION	b. LIST CODES FROM TABLE 2C.1	
003	Depressurization Wells	2300-3840 gpm	Chemical Precipitation (<=4,500 gpm)	2-C	
	Underground Dewatering Pumps and Operational Water Services	660 - 717 gpm	Flocculation (<=4,500 gpm)	1-G	
	Underdrain Collection Pond & Dry Stack Tailings drainage	0 - 125 gpm	Sedimentation/Clarification (<=4,500 gpm)	1-U	
Note that only up to 1/3 of the effluent from WTP2 will be discharged to Outfall 003.	Stormwater	0 - 160 gpm	Multimedia Filtration (<=4,500 gpm)	1-Q	
	WTP1	0 - 120 gpm	Ion Exchange (<=4,500 gpm)	2-J	
	January Adit	0 - 25 gpm	Electroreduction (<=400 gpm)	2-L	
Samples will be collected from the discharge line from WTP2 within the plant.	Core Cutting Water	0 - 2 gpm	Thickener (No Code)	XX	
	Drilling Water	0 - 30 gpm	Sludge Filter Press	5-R	
			Lined Storage Facility (No Code)	XX	
			(See the Section C.1 Attachments of the application		
			package for detailed description of the WTP2		
			process design and physical layout)		

C. Except for storm runoff, leaks or spills, are any of the discharges described in Parts II.A or B intermittent or seasonal?

☐ YES (complete the following table) ☒ NO (go to Item III)

1. OUTFALL NUMBER <i>(list)</i>	2. OPERATION(S) CONTRIBUTING FLOW <i>(list)</i>	3. FREQUENCY		4. FLOW				
		a. DAYS PER WEEK (specify average)	b. MONTHS PER YEAR (specify average)	a. FLOW RATE (in mgd)		b. TOTAL VOLUME (specify with units)		c. DURATION (in days)
				1. LONG TERM AVG.	2. MAXIMUM DAILY	1. LONG TERM AVG.	2. MAXIMUM DAILY	

III. PRODUCTION

A. Does an effluent guideline limitation promulgated by EPA under Section 304 of the Clean Water Act apply to your facility?

☒ YES (complete Part III.B) ☐ NO (go to Item IV)

B. Are the limitations in the applicable effluent expressed in terms of production (or other measure of operation)?

☐ YES (complete Part III.C) ☒ NO (go to Item IV)

C. If you answered Ayes® to Part III.B, list the quantity which represents an actual measurement of your level of production, expressed in the terms and units used in the applicable effluent guideline and indicate the affected outfalls.

AVERAGE DAILY PRODUCTION			AFFECTED OUTFALLS (list outfall numbers)
QUANTITY PER DAY	UNITS OF MEASURE	OPERATIONS, PRODUCT, MATERIAL, ETC. (specify)	

IV. IMPROVEMENTS

A. Are you now required by any federal, state or local authority to meet any implementation schedule for the construction, upgrading or operation of wastewater treatment equipment or practices or any other environmental programs which affect the discharges described in this application? This includes, but is not limited to: permit conditions, administrative or enforcement orders, enforcement compliance schedule letters, stipulations, court orders and grant or loan conditions.

☐ **YES** (complete the following table) ☒ **NO** (go to Part IV.B)

1. IDENTIFICATION OF CONDITION, AGREEMENT, ETC.	2. AFFECTED OUTFALLS		3. BRIEF DESCRIPTION OF PROJECT	4. FINAL COMPLIANCE DATE	
	OUTFALL NUMBER	SOURCE OF DISCHARGE		REQUIRED	PROJECTED

B. OPTIONAL: You may attach additional sheets describing any additional water pollution control programs (or other environmental projects which may affect your discharges) you now have underway or which you plan. Indicate whether each program is now underway or planned and indicate your actual planned schedules for construction.

☐ **MARK XX IF DESCRIPTION OF ADDITIONAL CONTROL PROGRAMS IS ATTACHED.**

V. INTAKE AND EFFLUENT CHARACTERISTICS

A, B, C, & D: See instructions before proceeding. NOTE: Parts V.A, V.B, V.C, and V.D are included in the ADDENDUM to Form 2C. Complete one set of Parts V.A - V.D for each outfall. Annotate the outfall and AZPDES (NPDES) permit number in the space provided at the bottom of each page.

E. Use the space below to list any of the pollutants listed in Table 2C.3 Toxic Pollutants and Hazardous Substances, which you know or have reason to believe is discharged or may be discharged from any outfall. For every pollutant you list, briefly describe the reasons you believe it to be present and report any analytical data in your possession.

1. POLLUTANT	2. SOURCE	1. POLLUTANT	2. SOURCE
Uranium	Naturally occurring uranium has been detected in groundwater, but uranium was detected in only 1 of 14 effluent samples at 0.00023 mg/L (detection limit of 0.0001 mg/L), far below the most stringent applicable standard (Partial Body Contact) of 2.8 mg/L.		

VI. POTENTIAL DISCHARGES NOT COVERED BY ANALYSIS

Is any pollutant listed in Part V.C a substance or a component of a substance which you currently use or manufacture as an intermediate or final product or byproduct?

☐

YES (list all such pollutants below)

☒

NO (go to Item VII)

VII. BIOLOGICAL TOXICITY TESTING DATA

Do you have any knowledge or reason to believe that any biological test for acute or chronic toxicity has been made on any of your discharges or on a receiving water in relation to your discharge within the last three years?

☒

YES (identify the test(s) and describe their purposes below)

☐

NO (go to Item VIII)

WET testing for WTP2 effluent has been conducted since WTP2 began discharging to Outfall 002 according the permit AZ0026387, Part 1C and Part III, with the first WET test conducted within the first six months after commencing discharge. The WET tests are acute and chronic toxicity tests on Ceriodaphnia dubia and Pimephales promelas, and chronic toxicity tests on Pseudokirchneriella subcapitata (formerly known as Raphidocelis subcapitata) as required by the permit. The results of WET tests conducted to date showed no toxicity and were reported to the ADEQ Surface Water Permits Unit in accordance with the permit.

WET testing is conducted by GEI Consultants, Inc., Ecological Division of Denver, Colorado (Arizona Laboratory ID: AZ0754).

VIII. CONTRACT ANALYSIS INFORMATION

Were any of the analyses reported in Item V performed by a contract laboratory or consulting firm?



YES (list the name, address and phone number of and pollutants analyzed by, each such laboratory or firm below)



NO (go to Item IX)

A. NAME	B. ADDRESS	C. TELEPHONE (phone and area code)	D. POLLUTANTS ANALYZED (list)
ACZ Laboratories, Inc.	2773 Downhill Drive, Steamboat Springs, CO 80487	(800) 334-5493	metals, major element ions, radionuclides

IX. CERTIFICATION

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. @

A. NAME & OFFICIAL TITLE (type or print)

Pat Risner, President

B. PHONE NO. (telephone and area code)

C. SIGNATURE



D. DATE SIGNED

14 October 2026

Pursuant to A.R.S. § 41-1030:

- (1) ADEQ shall not base a licensing decision, in whole or in part, on a requirement or condition not *specifically* authorized by statute or rule. General authority in a statute does not authorize a requirement or condition *unless* a rule is made pursuant to it that specifically authorizes the requirement or condition.
- (2) Prohibited licensing decisions may be challenged in a private civil action. Relief may be awarded to the prevailing party against ADEQ, including reasonable attorney fees, damages, and all fees associated with the license application.
- (3) ADEQ employees may not intentionally or knowingly violate the requirement for specific licensing authority. Violation is cause for disciplinary action or dismissal, pursuant to ADEQ's adopted personnel policy. ADEQ employees are still afforded the immunity in A.R.S. §§ 12-821.01 and 12-820.02.

Note: all water quality maximum daily and long-term average values are based on 14 samples collected between June and September 2026, after WTP2 and process improvements and repairs were completed. Maximum daily and long term average flows were calculated from August 2023 when discharge commenced.

FORM 2C — ADDENDUM

PLEASE PRINT OR TYPE IN THE UNSHADED AREAS ONLY.

AZPDES (NPDES) PERMIT NO. AZ0026387

V. INTAKE AND EFFLUENT CHARACTERISTICS (continued from page 3 of Form 2C)											OUTFALL NO. 003		
PART A - You must provide the results of at least one analysis for every pollutant in this table. Complete one table for each outfall. See instructions for additional details.													
1. POLLUTANT	2. EFFLUENT							3. UNITS		4. INTAKE (optional)			
	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30-DAY VALUE (if available)		c. LONG TERM AVERAGE VALUE (if available)		d. NO. OF ANALYSES			a. LONG TERM AVERAGE VALUE	b. NO. OF ANALYSES		
	CONCENTRATION (CONC.)	MASS	CONC.	MASS	CONC.	MASS		CONC.	MASS	CONC.	MASS		
Biochemical Oxygen Demand (BOD)	NA												
Chemical Oxygen Demand (COD)	NA												
Total Organic Carbon (TOC)	NA												
Total Suspended Solids (TSS)	5	39.2			0.36	2.80	14	mg/L	kg				
Ammonia (as N)	<3.5							mg/L					
Flow	VALUE	3.41	VALUE		VALUE	1.72		MGD		VALUE			
Temperature (winter)	VALUE	22	VALUE		VALUE			C		VALUE			
Temperature (summer)	VALUE	27	VALUE		VALUE			C		VALUE			
pH	MINIMUM 6.85	MAXIMUM 7.92	MINIMUM	MAXIMUM				STANDARD UNITS					
PART B - Mark "X" in column 2.a for each pollutant you know or have reason to believe is present. Mark "X" in column 2.b for each pollutant you believe to be absent. If you mark column 2.a for any pollutant which is limited either directly or indirectly but expressly, in an effluent limitations guideline, you must provide the results of at least one analysis for that pollutant. For other pollutants for which you mark column 2.a, you must provide quantitative data or an explanation of their presence in your discharge. Complete one table for each outfall. See the instructions for additional details and requirements.													
1. POLLUTANT AND CAS NO. (if available)	2. MARK "X"		3. EFFLUENT							4. UNITS		5. INTAKE (optional)	
	a. BELIEVE PRESENT	b. BELIEVE ABSENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30-DAY VALUE (if available)		c. LONG TERM AVG. VALUE (if available)		d. NO. OF ANALYSES			a. LONG TERM AVG. VALUE	b. NO. OF ANALYSES
				CONC.	MASS	CONC.	MASS	CONC.	MASS		CONC.	MASS	CONC.
Bromide (24959-67-9)		X											
Chlorine, Total Residual		X											
Color		X											
Fecal Coliform		X											

1. POLLUTANT AND CAS NO. (if available)	2. MARK "X"		3. EFFLUENT							4. UNITS		5. INTAKE (optional)		
	a. BELIEVE PRESENT	b. BELIEVE ABSENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30-DAY VALUE (if available)		c. LONG TERM AVG. VALUE (if available)		d. NO. OF ANALYSES			a. LONG TERM AVG. VALUE		b. NO. OF ANALYSES
			CONC.	MASS	CONC.	MASS	CONC.	MASS		CONC.	MASS			
Fluoride (16984-48-8)	X		0.53	4.83			0.48	4.27	14	mg/L	kg			
Nitrate-Nitrite (as N)	X		6.36	57.9			3.02	27.8	14	mg/L	kg			
Nitrogen, Total Organic (as N)	X		<3.5							mg/L				
Oil and Grease		X												
Phosphorus (as P), Total (7723-14-0)		X												
Radioactivity														
(1) Alpha, Total *	X		5.2				2.1		4	pCi/L				
(2) Beta, Total	X		<5.2							pCi/L				
(3) Radium, Total *	X		0.85				0.57		4	pCi/L				
(4) Radium 226, Total	X													
Sulfate (as SO4) (14808-79-8) *	X		134	1220			112	952	4	mg/L	kg			
Sulfide (as S)		X												
Sulfite(as so3) (14265-45-3)		X												
Surfactants		X												
Aluminum , Total (7429-90-5)	X		<0.3							mg/L				
Barium, Total (7440-39 -3)	X		0.0391	0.356			0.0297	0.266	14	mg/L	kg			
Boron, Total (7440-42-8)	X		0.0884	0.805			0.0607	0.558	14	mg/L	kg			
Cobalt, Total (7440-48-4)	X		<0.01							mg/L				
Iron, Total (7439-89-6)	X		0.142	1.29			0.082	0.75	14	mg/L	kg			
Magnesium, Total (7439-95-4)	X		15.3	139			13.9	124	14	mg/L	kg			
Molybdenum,Total (7439-98-7)		X												
Manganese, Total (7439-96-5)	X		0.138	1.26			0.051	0.52	14	mg/L	kg			
Tin, Total (7440-31-5)		X												
Titanium, Total (7440-32-6)		X												

* Results are from analyses on discrete samples.

PART C - If you are a primary industry and this outfall contains process wastewater, refer to Table 2C.2 in the instructions to determine which of the GC/MS fractions you must test for. Mark "X" in column 2.a for all such GC/MS fractions that apply to your industry and for ALL toxic metals, cyanides and total phenols. If you are not required to mark column 2.a (*secondary industries, non process wastewater outfalls and non required GC/MS fractions*), mark "X" in column 2.b for each pollutant you know or believe may be present. Mark "X" in column 2.c for pollutants you believe are absent. If you mark column 2.a for any pollutant, you must provide results of at least one analysis for that pollutant. If you mark column 2.b for any pollutant, you must provide results of at least one analysis for that pollutant if you know or have reason to believe it will be discharged in concentrations of 10 ppb or greater. If you mark column 2.b for acrolein, acrylonitrile, 2,4 dinitrophenol or 2-methyl-4,6 dinitrophenol, you must provide results of at least one analysis for each if you know or have reason to believe that you discharge in concentrations of 100 ppb or greater. Otherwise, for pollutants for which you mark column 2.b, you must either submit at least one analysis or briefly describe the reasons the pollutant is expected to be discharged. Note that there are 7 pages to Part C; please review each carefully. Complete one table (7 pages) for each outfall. See instructions for additional details and requirements.

1. POLLUTANT AND CAS NO. (if available)	2. MARK "X"			3. EFFLUENT								4. UNITS		5. INTAKE (optional)		
	a. TESTING REQUIRED	b. BELIEVE PRESENT	c. BELIEVE ABSENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30-DAY VALUE (if available)		c. LONG TERM AVG. VALUE (if available)		d. NO. OF ANALYSES				a. LONG TERM AVG. VALUE		b. NO. OF ANALYSES
				CONC.	MASS	CONC.	MASS	CONC.	MASS	CONC.	MASS	CONC.	MASS			
1. METALS, CYANIDE AND TOTAL PHENOLS																
Antimony, Total (7440-36-0)		X		0.0028	21.7			0.0016	13.7	14		mg/L	g			
Arsenic, Total (7440-38-2)		X		0.0007	5.2			0.0004	3.3	14		mg/L	g			
Beryllium, Total (7440-41-7)			X	<0.0004	0			0	0	14		mg/L	g			
Cadmium, Total (7440-43-9)		X		0.00035	3.2			0.00021	2.0	14		mg/L	g			
Chromium, Total (7440-47-3)		X		0.00095	7.6			0.00021	1.0	14		mg/L	g			
Copper, Total (7440-50-8)		X		0.0018	12.9			0.00034	0.92	14		mg/L	g			
Lead, Total (7439-92-1)		X		0.00157	14.3			0.00040	3.6	14		mg/L	g			
Mercury, Total (7439-97-6)		X		1.27	11.6			0.41	3.5	14		ng/L	mg			
Nickel, Total (7440-02-0)		X		0.0051	46.1			0.0031	29.1	14		mg/L	g			
Selenium, Total, (7782-49-2)		X		0.0008	6.4			0.0004	3.6	14		mg/L	g			
Silver, Total (7440-22-4)		X		<0.0001	0			0	0	14		mg/L	g			
Thallium, Total (7440-28-0)		X		0.00011	1.0			0.00002	0.21	14		mg/L	g			
Zinc, Total (7440-66-6)		X		0.0447	407			0.0276	260	14		mg/L	g			

1. POLLUTANT AND CAS NO. (if available)	2. MARK "X"			3. EFFLUENT							4. UNITS		5. INTAKE (optional)		
	a. TESTING REQUIRED	b. BELIEVE PRESENT	c. BELIEVE ABSENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30-DAY VALUE (if available)		c. LONG TERM AVG. VALUE (if available)		d. NO. OF ANALYSES			a. LONG TERM AVG. VALUE		b. NO. OF ANALYSES
				CONC.	MASS	CONC.	MASS	CONC.	MASS	CONC.	MASS	CONC.	MASS		
Cyanide, Total * (57-12-5)			X	<0.003				0		14	mg/L				
Phenols, Total			X												
Hardness (CaCO3)		X		352				294		14	mg/L				
2. DIOXIN															
2,3,7,8- Tetra- chlorodibenzo-P- Dioxin (1764-01-6)			X	Describe results:											
3. GC/MS FRACTION - VOLATILE COMPOUNDS															
Acrolein (107-02-8)			X												
Acrylonitrile (107-13-1)			X												
Benzene (71-43-2)			X												
Bromoform (75-25-2)			X												
Carbon Tetrachloride (56-23-5)			X												
Chlorobenzene (108-90-7)			X												
Chlorodibromo- methane (124-48-1)			X												
Chloroethane (75-00-3)			X												
2-Chloroethylvinyl Ether (110-75-8)			X												
Chloroform (67-66-3)			X												
Dichlorobromo- methane (75-27-4)			X												
1,1-Dichloroethane (75-34-3)			X												

* Free cyanide is reported as permit AZ0026387 specifies Free Cyanide in Table 2.b.

1. POLLUTANT AND CAS NO. (if available)	2. MARK "X"			3. EFFLUENT							4. UNITS		5. INTAKE (optional)			
	a. TESTING REQUIRED	b. BELIEVE PRESENT	c. BELIEVE ABSENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30-DAY VALUE (if available)		c. LONG TERM AVG. VALUE (if available)		d. NO. OF ANALYSES			a. LONG TERM AVG. VALUE		b. NO. OF ANALYSES	
				CONC.	MASS	CONC.	MASS	CONC.	MASS	CONC.	MASS	CONC.	MASS			
1,2 -Dichloroethane (107-06-2)			X													
1,1- Dichloroethylene (75-35-4)			X													
1,2-Dichloropropane (78-87-5)			X													
1,3-Dichloropro-pylene (542-75-6)			X													
Ethylbenzene (100-41-4)			X													
Methyl Bromide (74-83-9)			X													
Methyl Chloride (74-87-3)			X													
Methylene Chloride (75-09-2)			X													
1,1,2,2-Tetrachloro- ethane (79-34-5)			X													
Tetrachloroethylene (127-18-4)			X													
Toluene (108-88-3)			X													
1,2 Trans Dichloro- ethylene (15660-5)			X													
1,1,1 Trichloroethane (71-55-6)			X													
1,1,2 Trichloroethane (79-00-5)			X													
Trichloroethylene (79-01-6)			X													
Vinyl Chloride (75-01-4)			X													

1. POLLUTANT AND CAS NO. (if available)	2. MARK "X"			3. EFFLUENT							4. UNITS		5. INTAKE (optional)		
	a. TESTING REQUIRED	b. BELIEVE PRESENT	c. BELIEVE ABSENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30-DAY VALUE (if available)		c. LONG TERM AVG. VALUE (if available)		d. NO. OF ANALYSES			a. LONG TERM AVG. VALUE		b. NO. OF ANALYSES
				CONC.	MASS	CONC.	MASS	CONC.	MASS	CONC.	MASS	CONC.	MASS		
3. GC/MS FRACTIONS - ACID COMPOUNDS															
2-Chlorophenol (95-57-8)			X												
2,4- Dichlorophenol (120-83-2)			X												
2,4- Dimethylphenol (105-67-9)			X												
4,6-Dinitro-O-Cresol (534-52-1) [2-methyl 4,6, dinitrophenol]			X												
2,4-Dinitrophenol (51-28-5)			X												
2-Nitrophenol (88-75-5)			X												
4-Nitrophenol (100-02-7)			X												
P-Chloro-M-Cresol (59-50-7)			X												
Pentachlorophenol (87-86-5)			X												
Phenol (108-95-2)			X												
2, 4, 6-Trichloro- phenol (88-06-2)			X												
3. GC/MS FRACTION - BASE / NEUTRAL COMPOUNDS															
Acenaphthene (83-32-9)			X												
Acenaphthylene (208-96-8)			X												
Anthracene (120-12-7)			X												
Benzidine (92-87-5)			X												

1. POLLUTANT AND CAS NO. (if available)	2. MARK "X"			3. EFFLUENT							4. UNITS		5. INTAKE (optional)		
	a. TESTING REQUIRED	b. BELIEVE PRESENT	c. BELIEVE ABSENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30-DAY VALUE (if available)		c. LONG TERM AVG. VALUE (if available)		d. NO. OF ANALYSES			a. LONG TERM AVG. VALUE		b. NO. OF ANALYSES
				CONC.	MASS	CONC.	MASS	CONC.	MASS	CONC.	MASS	CONC.	MASS		
Benzo(a) Anthracene (56-55-3)			X												
Benzo(a) Pyrene (50-32-8)			X												
3,4-Benzofluor- anthene (205-99-2)			X												
Benzo (ghi) Perylene (191-24-2)			X												
Benzo (k) Fluor- anthene (207-08-9)			X												
Bis (2-Chloroethoxy) Methane (111-91-1)			X												
Bis (2-Chloroethyl) Ether (111-44-4)			X												
Bis (2-Chloroiso- propyl) Ether (102-60-1)			X												
Bis (2-Ethylhexyl) Phthalate (117-81-7)			X												
4-Bromophenyl Phenyl Ether (101-55-3)			X												
Butyl Benzyl Phthalate (85-68-7)			X												
2- Chloronaphthylene (91-58-7)			X												
4-Chloro-phenyl Phenyl Ether (7005-72-3)			X												
Chrysene (218-01-9)			X												
Dibenzo (a,h) Anthracene (53-70-3)			X												
1,2-Dichlorobenzene (95-50-1)			X												

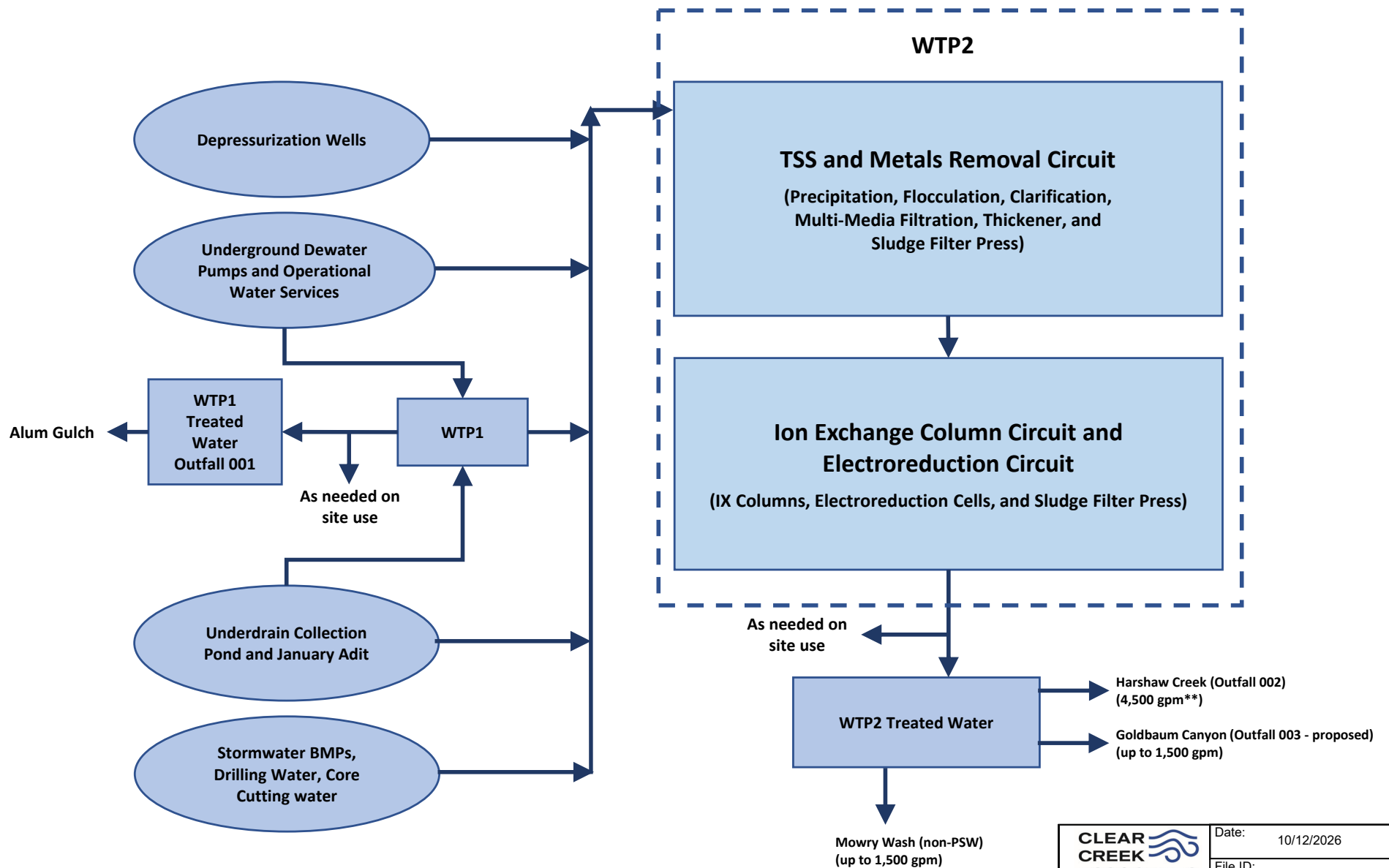
1. POLLUTANT AND CAS NO. (if available)	2. MARK "X"			3. EFFLUENT							4. UNITS		5. INTAKE (optional)		
	a. TESTING REQUIRED	b. BELIEVE PRESENT	c. BELIEVE ABSENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30-DAY VALUE (if available)		c. LONG TERM AVG. VALUE (if available)		d. NO. OF ANALYSES			a. LONG TERM AVG. VALUE		b. NO. OF ANALYSES
				CONC.	MASS	CONC.	MASS	CONC.	MASS		CONC.	MASS			
1,3-Dichlorobenzene (541-73-1)			X												
1,4-Dichlorobenzene (106-46-7)			X												
3,3'-Dichlorobenzidine (91-94-1)			X												
Diethyl Phthalate (84-66-2)			X												
Dimethyl Phthalate (131-11-3)			X												
Di-N-Butyl Phthalate (84-74-2)			X												
2,4-Dinitrotoluene (121-14-2)			X												
2,6-Dinitrotoluene (606-20-2)			X												
Di-N-Octyl Phthalate (117-84-0)			X												
1,2-Diphenylhydra-zine (as Azobenzene) (122-66-7)			X												
Fluoranthene (206-44-0)			X												
Fluorene (86-73-7)			X												
Hexachlorobenzene (118-74-1)			X												
Hexachlorobutadiene (87-68-3)			X												
Hexachlorocyclo- pentadiene (77-47-4)			X												
Hexachloroethane (67- 72-1)			X												

1. POLLUTANT AND CAS NO. (if available)	2. MARK "X"			3. EFFLUENT							4. UNITS		5. INTAKE (optional)		
	a. TESTING REQUIRED	b. BELIEVE PRESENT	c. BELIEVE ABSENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30-DAY VALUE (if available)		c. LONG TERM AVG. VALUE (if available)		d. NO. OF ANALYSES			a. LONG TERM AVG. VALUE		b. NO. OF ANALYSES
				CONC.	MASS	CONC.	MASS	CONC.	MASS	CONC.	MASS	CONC.	MASS		
Indeno (1,2,3-cd) Pyrene (193-39-5)			X												
Isophorone (78-59-1)			X												
Naphthalene (91-20-3)			X												
Nitrobenzene (98-95-3)			X												
N-Nitrosodimethyl- amine (62-75-9)			X												
N-Nitrosodi-N- Propylamine (621-64-7)			X												
N-Nitrosodi- phenylamine (86-30-6)			X												
Phenanthrene (85-01-8)			X												
Pyrene (129-00-0)			X												
1,2,4-Trichloro- benzene (120-82-1)			X												
3. GC/MS FRACTION - PESTICIDES															
Aldrin (309-00-2)			X												
α-BHC (319-84-6)			X												
β-BHC (319-85-7)			X												
γ-BHC (58-89-9)			X												
δ-BHC (319-86-8)			X												
Chlordane (57-74-9)			X												
4,4'-DDT (50-29-3)			X												
4,4'-DDE (72-55-9)			X												

1. POLLUTANT AND CAS NO. (if available)	2. MARK "X"			3. EFFLUENT							4. UNITS		5. INTAKE (optional)		
	a. TESTING REQUIRED	b. BELIEVE PRESENT	c. BELIEVE ABSENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30-DAY VALUE (if available)		c. LONG TERM AVG. VALUE (if available)		d. NO. OF ANALYSES			a. LONG TERM AVG. VALUE		b. NO. OF ANALYSES
				CONC.	MASS	CONC.	MASS	CONC.	MASS	CONC.	MASS	CONC.	MASS		
4,4'-DDD (72-54-8)			X												
Dieldrin (60-57-1)			X												
α -Endosulfan (115-29-7)			X												
β -Endosulfan (115-29-7)			X												
Endosulfan Sulfate (1031-07-8)			X												
Endrin (72-20-8)			X												
Endrin Aldehyde (7421-93-4)			X												
Heptachlor (76-44-8)			X												
Heptachlor Epoxide (1024-57-3)			X												
PCB-1242 (53469-21-9)			X												
PCB-1254 (11097-69-1)			X												
PCB-1221 (11104-28-2)			X												
PCB-1232 (11141-16-5)			X												
PCB-1248 (12672-29-6)			X												
PCB-1260 (11096-82-5)			X												
PCB-1016 (12674-11-2)			X												
Toxaphene (8001-35-2)			X												

PART D - You must report quantitative data for any of the State of Arizona surface water quality standards (SWQS) applicable to the receiving water which is not covered in Item V, Parts A, B, C, and E of Form 2C if you know or have reason to believe that the pollutant(s) is (are) discharged or is (are) expected to be discharged from each outfall. See A.A.C. R18-11-109, Appendix A and Appendix B for the list of applicable SWQS. Fill out this part in the same manner as Part V.A.

[illegible]



**** Note: Option to discharge up to 4,500 gpm to Harshaw Creek will be maintained, but total maximum discharge will not exceed 4,500 gpm.**

	Date:	10/12/2026
	File ID:	PPAZM-001
Figure 4 WTP2 Process Flow Diagram Hermosa Project		

SECTION C
SUPPORTING INFORMATION

SECTION C.1

AZPDES APPLICATION FORM 1 - Supplemental Information

SECTION C.1 - AZPDES APPLICATION FORM 1 - Supplemental Information

1. NATURE OF BUSINESS

South32 Hermosa Inc. (South32) owns property near Patagonia, Arizona (Form 1, Figure 1) that has historically been used for mining purposes. South32 has engaged in remediation of historic site activities under ADEQ's Voluntary Remediation Program (VRP) (Site Code 505143-02). VRP work consisted of capturing and treating mine impacted water from the January Adit, moving historic tailings onto a new lined tailings storage facility, capturing and treating the water collected in the underdrain collection pond or UDCP, and removing impacted soils associated with a former wetlands passive treatment system.

South32 is currently advancing development of underground mining facilities and conducting exploration activities (primarily targeting zinc, lead, silver and manganese). This is being accomplished largely through advancement of a shaft and a decline, which necessitates dewatering of the local aquifer in the vicinity of the features to allow for their safe advancement. The VRP, mining, and exploration activities will require the continued use of Water Treatment Plant 1 (WTP1) and Water Treatment Plant 2 (WTP2). Discharge from WTP1 was authorized in the initial 2018 AZPDES permit, and discharge from WTP2 was authorized in a 2021 amendment to the permit. Discharge from both plants is also authorized in South32's aquifer protection permit (APP).

The locations of WTP1 and WTP2 are depicted on Figure 2 of the application (Form 1, Figure 2).

2. PROJECT BACKGROUND

South32's project is known as the Hermosa Critical Minerals Project, as the current target minerals (lead, manganese, silver, and zinc) have all been identified as critical minerals by the United States Department of the Interior. See 90 Fed. Reg. 50494 (November 7, 2025).

Metal mining in the Harshaw Mining District has occurred since about the 1850s. Some of the historical mining operations are on property previously owned by ASARCO LLC (ASARCO). Arizona Minerals, Inc. (AMI) acquired portions of the former ASARCO property. South32 purchased AMI in 2018 and changed the entity's name to South32 Hermosa Inc. in 2023.

South32 is presently authorized by AZPDES Permit No. AZ0026387 to discharge: (1) WTP1-treated drainage water from historic dry stack tailings and historic workings, as well as stormwater, via Outfall 001 into Alum Gulch; and (2) WTP2-treated mine drainage water, drainage from historic and non-historic dry stack tailings, groundwater, core cutting water, drilling water and stormwater, as well as WTP1-treated water, via Outfall 002 into Harshaw Creek (Form 1, Figure 2).

Since its initial construction, WTP1 has been upgraded to provide additional treatment capability, as authorized in a 2020 APP amendment. WTP1 is designed to treat and release water at flow rates up to 120 gallons per minute (gpm) or 0.172 million gallons per day (MGD). Since Permit No. AZ000026387 first became effective in 2018, treated effluent from WTP1 has been used on the site and no water has been discharged through Outfall 001 into Alum Gulch. WTP1 is designed to discharge water treated to

meet the most stringent of applicable Arizona numeric surface water quality standards (SWQS), Arizona aquifer water quality standards (AWQS), and applicable technology-based effluent limitation guidelines set forth at 40 C.F.R. Part 440, Subpart J.

WTP2 began discharging treated water in August 2023 through Outfall 002 into an ephemeral tributary to Harshaw Creek (Form 1, Figure 2). The primary source of influent to WTP2 has been, and will continue to be, groundwater from depressurization wells or mine workings. WTP2 is permitted to discharge up to 4,500 gallons per minute (gpm), or 6.48 million gallons per day (MGD). The highest discharge from WTP2 is expected to occur in the early years of mine development and operation, with flows declining over time. WTP2 was recently upgraded to provide additional treatment for antimony and other constituents. Like WTP1, WTP2 is designed to discharge water treated to meet the most stringent of applicable Arizona numeric surface water quality standards (SWQS), Arizona aquifer water quality standards (AWQS), and applicable technology-based effluent limitation guidelines set forth at 40 C.F.R. Part 440, Subpart J.

The recently approved U.S. (USFS) *South32 Hermosa Inc. Critical Minerals Exploration and Mine Plan of Operations* (MPO) authorizes South32 to conduct exploration and mining activities on USFS lands adjacent to South32's private property. The MPO includes routing up to 3,000 gpm of water treated at WTP2 to two natural ephemeral drainages. The new proposed discharge locations are in Goldbaum Canyon (discussed below) and Mowry Wash (discussed in Attachment C.3).

South32 is requesting a permit modification to be able to release a portion, up to 1,500 gpm or 2.16 MGD, of the permitted discharge from WTP2 into Goldbaum Canyon, an ephemeral tributary to Harshaw Creek (Form 1, Figure 2). Water from WTP2 would be routed to Goldbaum Canyon through a high density polyethylene enclosed pipeline to an energy dissipator where effluent would be released to Goldbaum Canyon (Outfall 003). The direction of surface flow in Goldbaum Canyon is northeasterly. The flow would continue from Goldbaum Canyon into Corral Canyon, heading northwesterly, and then into the same section of Harshaw Creek that receives treated water from WTP2 that is released to permitted Outfall 002. Per the Approved Jurisdictional Determination (AJD) from the U.S. Army Corps of Engineers (Corps)¹ (August 8, 2024), Goldbaum Canyon and Corral Canyon are not waters of the United States (WOTUS). As ephemeral washes, Goldbaum Canyon and Corral Canyon also do not constitute non-WOTUS protected surface waters (PSWs). See A.R.S. § 49-221(G)(2)(k). However, at the potential maximum discharge rate of 1,500 gpm, the discharge to Goldbaum Canyon is projected to reach lower Harshaw Creek. Therefore, AZPDES permit coverage for this proposed discharge is appropriate.

For the reasons described above, South32 is requesting to amend permit AZ0026387 to allow up to 1,500 gpm, or 2.16 MGD, to be discharged to Goldbaum Canyon (new Outfall 003), a tributary of Harshaw Creek. The permit limits currently applicable at Outfall 002 should also apply to the new outfall.

¹ Department of the Army, U.S. Army Corps of Engineers Los Angeles District, August 8, 2024, to Brent Musslewhite, South32 Hermosa, Inc., Subject: Approved Jurisdictional Determination.

In a separate application, South32 also will be seeking Aquifer Protection Permit coverage for the planned new discharges.

SECTION C.2

AZPDES APPLICATION FORM 2C – Supplemental Information

SECTION C.2 – AZPDES APPLICATION FORM 2C**WTP2 Facility Description, Receiving Water, and Description of Discharge****1. GENERAL FACILITY INFORMATION – WTP2**

Water Treatment Plant # 2 (WTP2) is designed and constructed primarily to receive and treat groundwater from depressurization wells and mine workings. Additional inflows of water to WTP2 are relatively minor and include drilling water, stormwater, core-cutting water, and drainage water from historic and non-historic dry stack tailings.¹ The permitted maximum discharge from WTP2 (expressed as a discharge limitation in the site aquifer protection permit) is 4,500 gallons per minute (gpm) or 6.48 million gallons per day (MGD). The highest discharge from WTP2 is expected to occur in the early years of mine development and operation, with flows declining over time.

Figure 4 in Application Form 2C for Outfall 002 is a process flow diagram illustrating the contributors of flow to WTP2, the WTP2 treatment process, and Outfall 002. Water from depressurization wells and mine workings will comprise approximately 90 to 100 percent of the inflow to WTP2. Discharge will continue to occur on a continuous basis.

WTP2 uses a two-step treatment process. Step 1 treatment removes suspended solids through the addition of ferric compounds, flocculant, and sulfide reagents (and with pH adjustment, if required), and clarification to precipitate metals (including selenium) and separate solids. Step 2 uses ion exchange and electroreduction to remove selenate from the water treated by Step 1. Treated water from Step 2 is permitted to be discharged through Outfall 002.

Water treatment Steps 1 and 2 produce solid residuals. The solid residuals are clarified from solution, dewatered by a filter press, and deposited at the geomembrane-lined Tailing Storage Facility #1 (TSF1). The solid residuals are expected to be non-hazardous based on the results of treatability studies for WTP2 and the testing results for solid residuals produced by similarly designed treatment plants (Amendment of AZPDES Permit No. AZ0026387, May 29, 2020).

2. RECEIVING WATER

Treated water from WTP2 is currently permitted for release to an unnamed ephemeral tributary to Lower Harshaw Creek through Outfall 002. WTP2 is permitted to discharge up to 4,500 gallons per minute (gpm), or 6.48 million gallons per day. Treated water from WTP2 is piped about 700 feet to the east of the plant and discharged through an energy dissipator at Outfall 002, where it flows for about 200 feet in an unnamed ephemeral tributary before entering the channel of lower Harshaw Creek. The design of Outfall 002 includes an armored diversion berm to direct flow from Outfall 002 to Harshaw Creek. Descriptions of the WTP2 design and engineering drawings of WTP2 and Outfall 002 were submitted with the Application for Amendment of AZPDES Permit No. AZ0026387 (May 29, 2020).

South32 is requesting, in this permit modification, to be able to release a portion, up to 1,500 gpm or 2.16 MGD, of the permitted discharge from WTP2 into Goldbaum Canyon, an ephemeral water that

¹ At the time of this application, no new production dry stack tailings have been generated at the site.

flows into another ephemeral water (Corral Canyon) and thence into Lower Harshaw Creek. Water from WTP2 would be routed to Goldbaum Canyon through a high-density polyethylene pipeline to an energy dissipator, where effluent would be released to Goldbaum Canyon (Outfall 003). At the maximum requested discharge rate (1,500 gpm), the discharge is modeled to reach Lower Harshaw Creek. The direction of surface flow in Goldbaum Canyon is northeasterly. The flow would continue from Goldbaum Canyon into Corral Canyon, heading northwesterly, and then into Lower Harshaw Creek, at a point approximately 3.4 miles below Outfall 002. Per the Approved Jurisdictional Determination, U.S. Army Corps of Engineers (August 8, 2024)² (AJD), Goldbaum Canyon and Corral Canyon are not Waters of the United States (WOTUS). As ephemeral washes, Goldbaum Canyon and Corral Canyon also do not constitute non-WOTUS protected surface waters. See A.R.S. § 49-221(G)(2)(k). However, at the potential maximum discharge rate of 1,500 gpm, the discharge is projected to reach lower Harshaw Creek. Lower Harshaw Creek at and below its confluence with Corral Canyon was not addressed in the AJD. For purposes of this amendment application, South32 Hermosa assumes that lower Harshaw Creek constitutes a WOTUS.

The designated uses of Harshaw Creek are aquatic and wildlife ephemeral (A&We), partial body contact (PBC), and agricultural livestock watering (AgL) (Arizona Administrative Code (A.A.C.) Title 18, Chapter 11, Article 1). The design of WTP2 considered the more stringent aquatic and wildlife (effluent-dependent water) (A&Wedw) chronic criteria rather than the A&We criteria assigned to Harshaw Creek pursuant to A.A.C. R-18-11-113.D. WTP2 is designed to discharge water treated to meet the most stringent of applicable Arizona surface water quality standards (SWQS), Arizona aquifer water quality standards (AWQS), and applicable technology-based effluent limitation guidelines set forth at 40 C.F.R. Part 440, Subpart J.

Lower Harshaw Creek is not designated as impaired. The discharge from WTP2 will be continuous.

3. EFFLUENT CHARACTERISTICS

The water that will be discharged through Outfall 003 will be a portion of the treated water from WTP2 that currently is discharged solely through Outfall 002. WTP2 began discharging through Outfall 002 in August 2023. Form 2C Addendum was completed based on the results from samples collected at the effluent port (V250.15) of WTP2 according to Permit AZ0026387 and submitted to ADEQ through Discharge Monitoring Reports (DMRs) to the myDEQ website (azdeq.gov/myDEQ).

The results of Outfall 002 sampling have indicated that the treated water meets all applicable Effluent Limitations (ELs) and Assessment Levels (ALs) in the current permit except for selenium, which exceeded the AL of 2 micrograms per liter (based on the more stringent A&Wedw chronic criterion rather than the A&We acute criterion applicable to Harshaw Creek) in some samples. South32's investigation into the selenium results discovered a failure in a component of the Step 2 treatment process (which is specifically designed to remove selenate). Repairs to that component, as well as other minor WTP2 process modifications were completed by June 2026. Following completion of these activities, South32

² Department of the Army, U.S. Army Corps of Engineers Los Angeles District, August 8, 2024, to Brent Musslewhite, South32 Hermosa, Inc., Subject: Approved Jurisdictional Determination.

conducted accelerated monitoring at Outfall 002 (14 samples) to address their efficacy. The water quality data provided in the Form 2C addendum that is part of this application consists of the data collected since WTP2 repairs and modifications were completed. These data are most representative of future discharge, consistent with 40 C.F.R. 122.21(g)(7)(ix), adopted by reference at A.A.C. R18-9-A905(A)(1)(b) (when existing data is used to characterize effluent in an application, it should be “representative of the discharge”). No EL or AL has been exceeded in the recent sampling.

Memorandum: Regulatory Determination for Mowry Wash

Memorandum

To: South32 Hermosa Inc.

Date: October 7, 2026

From: John Villinski, R.G. and Jim Norris, R.G., Clear Creek Associates

Subject: Regulatory Determination for Mowry Wash

South32 Hermosa Inc. (South32) is authorized by Arizona Pollution Discharge Elimination System (AZPDES) permit AZ0026387 to discharge treated water from Water Treatment Plant #2 (WTP2), which treats water (primarily groundwater) generated at the Hermosa Critical Minerals Project. WTP2 began discharging treated water in August 2023 through Outfall 002 into an unnamed ephemeral tributary to ephemeral Harshaw Creek (Figure 1). WTP2 is permitted to discharge up to 4,500 gallons per minute (gpm), or 6.48 million gallons per day (MGD).

South32 is seeking to expand operations to include activities on U.S. Forest Service (USFS) land. Such activities were recently approved following completion of an environmental impact statement (EIS) prepared under the National Environmental Policy Act¹ and subsequent issuance of a Record of Decision and approval of a Mine Plan of Operations by the USFS. The USFS preferred approach for management of treated water from WTP2, as reflected in the final EIS and the Record of Decision, is for a portion of that water to be released to two natural ephemeral drainages. The proposed discharge locations are in Goldbaum Canyon and Mowry Wash, with up to 1,500 gpm of treated water discharged to each location (Figure 1). The Goldbaum Canyon discharge is included in the AZPDES permit amendment application. This memorandum discusses the Mowry Wash discharge.

Per an Approved Jurisdictional Determination (AJD) by the United States Army Corps of Engineers (Corps) (August 8, 2024),¹ the 2.5 mile segment of Mowry Wash below the proposed discharge point does not constitute a water of the United States (WOTUS) because it is not a relatively permanent water within the meaning of *Sackett v. United States*, 598 U.S. 651 (2023)

¹ Department of the Army, U.S. Army Corps of Engineers Los Angeles District, August 8, 2024, to Brent Musslewhite, South32 Hermosa, Inc., Subject: Approved Jurisdictional Determination.

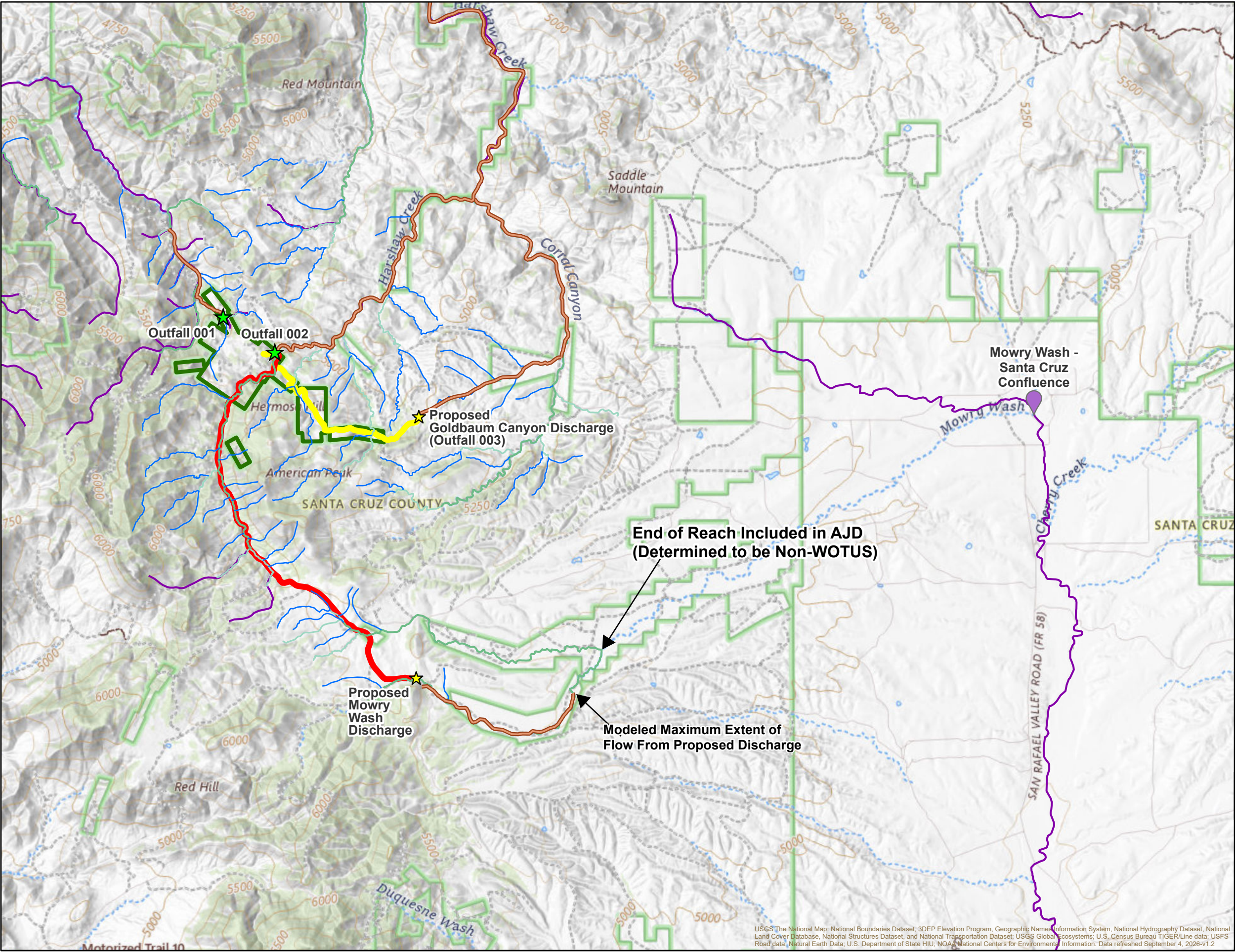
and current EPA/Corps rules (Figure 1). ADEQ has conceded that Mowry Wash is not a WOTUS,² Additionally, as an ephemeral wash, Mowry Wash does not constitute a non-WOTUS protected surface water (PSW). See A.R.S. § 49-221(G)(2)(k). The next segment of Mowry Wash, from its confluence with a tributary from the northwest to the confluence with the Santa Cruz River, although not part of the AJD, also is ephemeral. Therefore, that section of Mowry Wash also does not constitute WOTUS or a non-WOTUS PSW (Figure 1).

The maximum discharge rate to Mowry Wash will be 1,500 gpm. GSI Environmental conducted modeling to evaluate the extent of surface flow in Mowry Wash at 1,500 gpm for the estimated life-of-mine (70 years).⁴ As shown on Figure 1, the discharge is modeled to dissipate within approximately two miles from the discharge point, within the portion of Mowry Wash determined to be non-jurisdictional in the AJD.³ The nearest potential WOTUS to the discharge point is the Santa Cruz River reach from its headwaters in the Canelo Hills (31°27'39.21" N, 110°37'3.968" W) to the Mexican border, which is located approximately 8 miles from the discharge location (and approximately 6 miles from where the maximum discharge is modeled to fully dissipate). Because the proposed discharge to Mowry Wash will not reach a WOTUS or a non-WOTUS PSW, that discharge does not require AZPDES permit coverage.

An amendment to Aquifer Protection Permit P-512235 will be filed to permit the discharges to both Mowry Wash and Goldbaum Canyon, with the discharges subject to discharge limitations based on Arizona Aquifer Water Quality Standards.

² Response to Public Comments, Clean Water Act § 401 Waiver for South32 Hermosa Inc., at 10 (May 6, 2026) ("ADEQ has determined that Mowry Wash is not a WOTUS and therefore is not subject to regulation under the Clean Water Act.").

⁴ From: Amelia Tallman and Kayla Neuharth (GSI Environmental), To: Tomas Goode South32 Hermosa and Stacie Alter Geo-Logic. RE: Goldbaum Canyon and Mowry Wash Discharge Modeling Support-Establishment of Pollutant Management Area and Discharge Impact Area. July 15, 2025.



Legend

- ★ WTP Discharge Point
- ★ Proposed Discharge Locations
- Max Discharge Extent
- Above Ground Pipeline
- Buried Pipeline

Non-WOTUS*

- 1st - Order Stream
- 2nd - Order Stream
- 3rd - Order Stream
- 4th - Order Stream

*Non-WOTUS as determined by the US Corps of Engineers, Approved Jurisdictional Determination, August 8, 2024



Projection: UTM Zone 12N NAD83

Date: 10/6/2026

Project Number: CC25.1076



Figure 1

Site Map

USGS The National Map: National Boundaries Dataset, 3DEP Elevation Program, Geographic Names Information System, National Hydrography Dataset, National Land Cover Database, National Structures Dataset, and National Transportation Dataset; USGS Global Ecosystems; U.S. Census Bureau TIGER/Line data; USFS Road data, Natural Earth Data; U.S. Department of State HIU; NOAA National Centers for Environmental Information. Data refreshed September 4, 2026-v1.2