



Wharf Resources (USA), Inc.

June 3, 2021

Mr. Eric Holm
SD DANR, Minerals and Mining
Joe Foss Building
523 East Capitol Avenue
Pierre, SD 57501

RE: State Mine Permit No. 476, 356, 434, 435, and 464 Technical Revision—Juno Pit & Dump

Dear Eric:

Enclosed please find a technical revision for the proposed Juno Pit and eventual Juno Backfill/Dump. Wharf is requesting approval of this technical revision to mine ore from Juno to aid 2021 production goals and advance Wharf's mining progression. Projected timing for mining through reclamation is September 2021 through December 2023.

The Juno Pit will include 10.3 acres of new disturbance, 9.8 acres of redisturbance, 10.8 acres of current disturbance, and 8.9 acres of current topsoil stockpile. The enclosed plan view map depicts the pit layout and disturbance types in relation to Wharf's disturbance boundary and permit boundary. The 10.3 acres of new disturbance is new contiguous affected acreage under Mine Permit 356; Lawrence County will be included in the distribution of this technical revision.

Juno currently houses an 8.9 acre topsoil stockpile containing 801,238 tons of topsoil. In addition, there are an additional 22,326 tons of in-situ topsoil overlaying the Juno Pit design. Wharf will haul the stockpile and in-situ topsoil, a total of 823,565 tons, to Bald Mountain and to final reclamation areas.

Approximately 11.5 million tons of waste rock from the Juno Pit will be hauled to and discarded in the American Eagle Pit. This waste rock will be accounted for in the American Eagle nitrate and arsenic loading checkbook. Approximately 1.8 million tons of ore will be mined from the Juno Pit. Please reference the two enclosed cross-sections that depict the Juno Pit lithology and pit design. Approximately 75 samples have been analyzed for NAG pH. Results ranged from 5.75 to 9.56 in all material sampled, as seen in these lithologies elsewhere at Wharf. Wharf will follow the established waste rock sampling and management plan as mining occurs.

After the Juno Pit is mined out, it will be backfilled as a waste rock dump for waste rock from Portland Ridge. Please see the two enclosed cross-sections that depict the Juno Dump Design and Juno Reclaim Design.

Please see the enclosed plan view map for stormwater runoff flow direction and riprap channels that will be installed for stormwater control.

There will be no changes to current haul roads in order to mine the Juno Pit.

Once the Juno Pit is mined and backfilled, the Juno Dump will be graded, sloped, covered with topsoil and seeded for reclamation purposes. The total reclamation footprint is 39.8 acres and will include 104,624 cubic yards of material to be moved. The plan view map enclosed shows the reclaim contours.

A table with the information required pursuant to 74:29:03:03 is enclosed. Shape files will be provided to DANR electronically.

Please contact me at 605-584-4155 if you have any comments or questions.

Sincerely,



Matt Zietlow
Environmental Manager

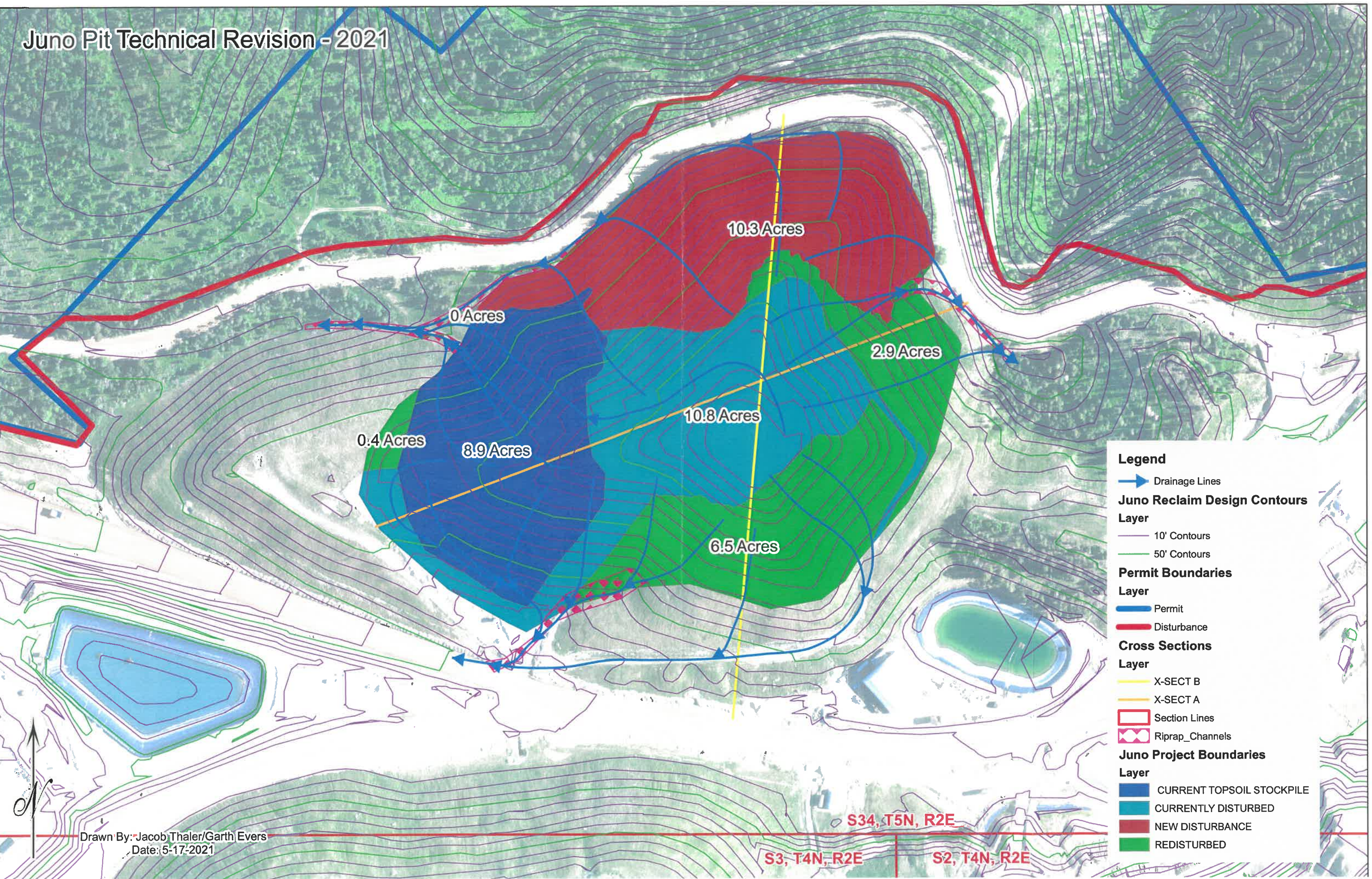
cc: Stan Michals (SD GF&P), Amber Vogt (Lawrence County P&Z)

Technical Revision Checklist (Regulatory Requirement 74:29:03:03)
Juno Pit and Juno Dump

	Item	Description
(1)	Name:	Wharf Resources (U.S.A.), Inc. 10928 Wharf Road Lead, South Dakota 57754
	Contact:	Matt Zietlow Environmental Manager
(2)	Permit No.	State Mine Permit Nos. 476, 356, 434, 435, and 464.
(3)	Narrative Description:	Wharf Resources is requesting approval to mine the Juno Pit and then backfill with waste rock from Portland Ridge; 10.3 new contiguous affected acres would be added under Mine Permit #356.
(4)	Legal Description:	SE & SW ¼ of Section 34; T5N, R2E, B.H.M.
(5)	Reference Material/Maps:	Reference the attached maps for proposed Juno Pit area and cross sections.
(6)	Cost of Reclamation:	\$78,744
(7)	Description of Reclamation:	After backfilling, the Juno Dump will be graded, sloped, covered with topsoil, and seeded per the existing mine reclamation plan.
(8)	Surface Owners:	Wharf Resources (U.S.A.), Inc. 10928 Wharf Road Lead, SD 57754
(9)	Mineral Owners:	Wharf Resources (U.S.A.), Inc. 10928 Wharf Road Lead, SD 57754
(10)	Proof of Consultation Adjacent Landowners:	Wharf owns the land where the Juno Pit is located; no adjacent landowners located within notification radius.

	Item	Description
(11)	Proof of Consultation Governmental Agencies:	SD Game Fish and Parks will be included in the distribution of this technical revision request; please reference the June 10, 1988 letter on file for proof of consultation with the Lawrence County NRCS office.
(12)	Proof of Compliance with Local Zoning:	Due to the addition of 10.3 new contiguous affected acres under Mine Permit #356, Lawrence County will be included in the distribution of this technical revision request.
(13)	Post-Mining Reclamation Map:	Refer to the post mine contour map for 2022 (provided electronically) and the enclosed PDF map.
(14)	Effect on Timetable:	There is no impact to the timetable.
(15)	Baseline Data and Maps:	Reference State Mine Permit Nos. 476, 356, 434, 435, and 464 including subsequent amendments and technical revisions.

Juno Pit Technical Revision - 2021



- Legend**
- ➔ Drainage Lines
 - Juno Reclaim Design Contours**
 - 10' Contours
 - 50' Contours
 - Permit Boundaries**
 - Permit
 - Disturbance
 - Cross Sections**
 - X-SECT B
 - X-SECT A
 - Section Lines
 - Riprap_Channels
 - Juno Project Boundaries**
 - CURRENT TOPSOIL STOCKPILE
 - CURRENTLY DISTURBED
 - NEW DISTURBANCE
 - REDISTURBED

Drawn By: Jacob Thaler/Garth Evers
Date: 5-17-2021

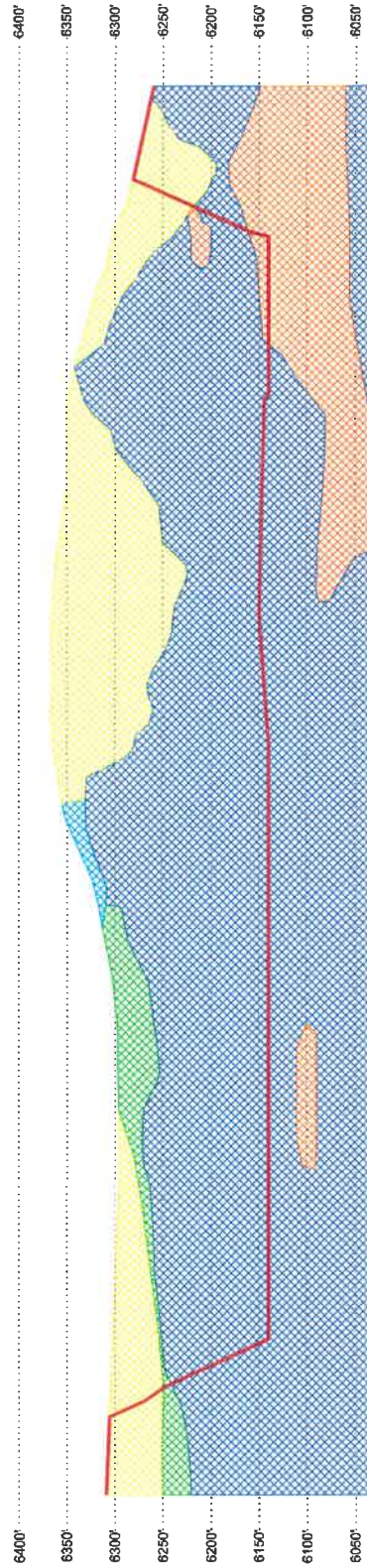
S34, T5N, R2E
S3, T4N, R2E
S2, T4N, R2E

JUNO PIT LITHOLOGY CROSS SECTION A-A'







DRAWN BY JACOB THALER

05/14/21

A _____ A'



LEGEND

-  FILL
-  DEADWOOD UPPER CONTACT
-  GLAUCONITIC SANDSTONE
-  INTERBEDDED DEADWOOD
-  QUARTZ MONZONITE
-  JUNO PIT DESIGN

SCALE (FT)



JUNO PIT LITHOLOGY CROSS SECTION B-B'

DRAWN BY JACOB THALER

05/14/21

B B'



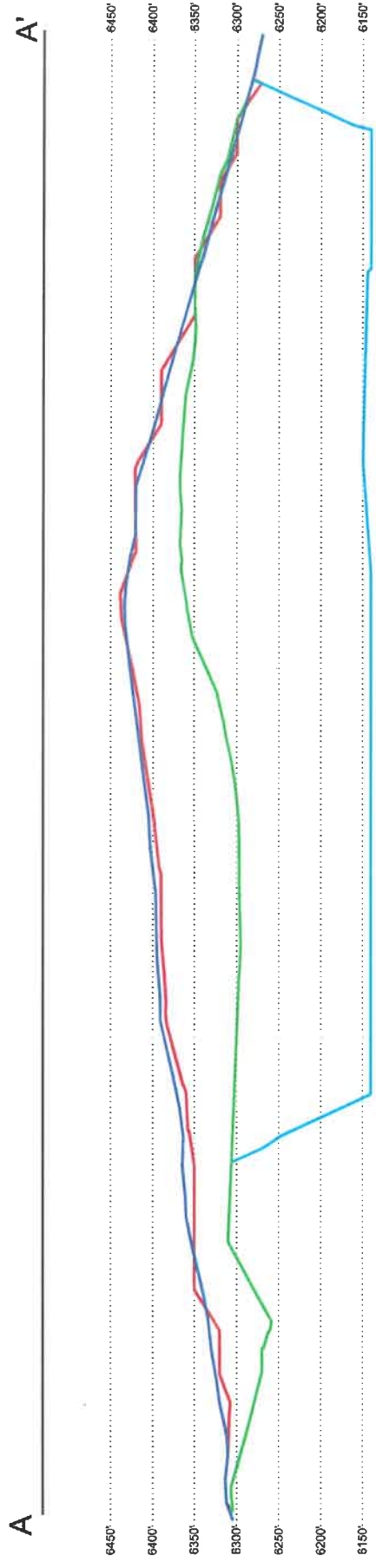
LEGEND

- FILL
- DEADWOOD UPPER CONTACT
- GLAUCONITIC SANDSTONE
- INTERBEDDED DEADWOOD
- QUARTZ MONZONITE
- JUNO PIT DESIGN



JUNO DUMP DESIGN CROSS SECTION A-A'

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05/14/2021



LEGEND

- CROSS SECTION ORIENTATION
- CURRENT TOPOGRAPHY
- JUNO PIT DESIGN
- JUNO DUMP DESIGN
- JUNO RECLAIM DESIGN

SCALE (FT)



JUNO DUMP DESIGN CROSS SECTION B-B'

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05/14/21

