March 26, 2019

CLARK WOOTEN, MANAGER
RDA LLC
PO BOX 527
NEWTON GROVE, NC 28366

RE: NPDES General Permit # SCG731435
RDA LLC/RDA QUARRY MINE
Williamsburg County

Dear Mr. Wooten:

A Notice of Intent for coverage under a general NPDES Permit was received on August 3, 2017. Your facility has been assigned General NPDES Permit number SCG731435. All correspondence should reference this General NPDES Permit number. A copy of the NPDES General Permit for Discharges Associated with Nonmetal Mineral Mining Facilities is enclosed. You are responsible for complying with the conditions of this permit. In addition, the permittee must ensure that all easements necessary for the discharge are obtained prior to the discharge occurring.

In addition to the standard numeric effluent limitations specified in Part X.A. of NPDES General Permit SCG730000, the facility will be required to monitor for the following pollutants:

Pollutant/Parameter	DISCHARGE LIMITATIONS & MONITORING REQUIREMENTS[1,2]			
	Concentration			
	Monthly Average	Daily Maximum	Sampling Frequency	Sample Type
Cadmium, total	0.3507 µg/l	1.926 µg/L	Monthly	Composite
Lead	3.394 µg/l	88 µg/L	Monthly	Composite
Thallium	0.47 µg/l	0.6862 µg/L	Monthly	Composite
Aluminum, total	87 µg/l	750 µg/L	Monthly	Composite
Mercury	0.051 µg/l	0.07446 µg/L	Annual	Grab

µg/L = micrograms per liter

[1] See Part IV.B.8.a of General Permit SCG730000

[2] The permittee shall use a sufficiently sensitive analytical method that achieves a value below the derived permit limit in the table above. For the purposes of reporting analytical data on the Discharge Monitoring Report (DMR):

[a] Analytical results below the PQL conducted using a method in accordance with Part IV.B.8.a of SCG730000 shall be reported as zero (0). Zero (0) shall also be used to average results which are below the PQL. When zero (0) is reported or used to average results, the permittee shall report, in the "Comment Section" or in an attachment to the DMR, the analytical method used, the PQL achieved, and the number of times results below the PQL were reported as zero (0).

[b] Analytical results above the PQL conducted using a method in accordance with Part IV.B.8.a of SCG730000 shall be reported as the value achieved. When averaging results using a value containing a "less than," the average shall be calculated using the value and reported as "less than" the average of all results collected.

[c(1)] The mass value for a pollutant collected using a grab sample shall be calculated using the 24-hour totalized flow for the day the sample was collected (if available) or the instantaneous flow at the time of the sample and either the concentration value actually achieved or the value as determined from the procedures in (1) or (2) above, as appropriate. Grab samples should be collected at a time representative of the discharge.

[(2)] The mass value for a pollutant collected using a composite sample shall be calculated using the 24-hour totalized flow measured for the day the sample was collected and either the concentration value actually achieved or the value as determined from the procedures in (1) or (2) above, as appropriate.

Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location(s): After onsite treatment via sediment storage ponds but prior to mixing with the receiving stream (Murray Swamp).

This permit coverage may be reopened to eliminate these monitoring requirements if reasonable potential is determined not to exist or reopened to include more stringent limitations if the discharge causes, has the reasonable potential to cause or contributes to an instream water quality violation for any of the parameters in the above table based on one year of data collected at the sampling frequency.

Where the permit limitation in the previous table is below the practical quantitation limit (PQL), the PQL and analytical method stated below shall be considered as being in compliance with the permit limit. Additionally, for mercury, the methods specified below must be used.

Pollutant/Parameter	Analytical Method [1,2]	PQL [1,3]
Thallium	Sufficiently Sensitive Test Method in 40 CFR Part 136	0.5 µg/L
Mercury	EPA 1669 (sampling), EPA 1631E (analysis)	0.0005 µg/L

[1] See notes on previous table

[2] The permittee may use another approved analytical method from the most recent version of 40 CFR Part 136 provided the SCDHEC-certified laboratory performing the analysis can achieve a PQL equal to, or lower than, the PQL listed above. The Permittee must receive written approval from the Department prior to using a method other than those specified above.

[3] If the permittee is using a PQL below the PQL listed above, then for purposes of reporting, the lower PQL shall be used in accordance with footnote 2 of the previous table.

In addition to this NPDES general permit coverage, this project may be required to obtain other permits before mining may begin. Mines, other than borrow pits for SC DOT or SC Ports Authority projects, are required to obtain a mine operating permit. Mine operating permits are issued through the Division of Mining and Solid Waste Management in the Bureau of Land and Waste Management. If you have questions concerning the mine operating permit process, contact Mr. Joseph Koon at (803) 898-1371.

When you begin construction of this new mine, please inform the DHEC stormwater inspector for the DHEC Region in which the mine is located. To obtain the telephone number, please click on the correct Region at the following link. http://www.scdhec.gov/HomeAndEnvironment/DHECLocations/

General Permit coverage is effective on March 26, 2019. Please see the enclosed South Carolina Board of Health and Environmental Control Guide to Board Review.

If you have any questions about the technical aspects of this permit, please contact Brett M Caswell at 803-898-4396. Information pertaining to adjudicatory matters may be obtained by contacting the Legal Office, SCDHEC, 2600 Bull Street, Columbia, SC 29201, or by calling them at (803) 898-3350.

Sincerely,

Crystal D. Rippy, Manager
Industrial Wastewater Permitting Section

Enclosures: General Permit
Guide to Board Review

e-mail: Lawrence M Ragsdale, PEE DEE REGION BEHS MYRTLE BEACH
MYRTLE BEACH EQC LAB
Kristian Tucker, BOW/WPC Enforcement
Joseph Koon, Mining/Reclamation Division, BLWM
Brett M Caswell, Industrial Section Permit Engineer

Mine Permit Application No.: I-002171

South Carolina Board of Health and Environmental Control

Guide to Board Review

Pursuant to S.C. Code Ann. § 44-1-60

The decision of the South Carolina Department of Health and Environmental Control (Department) becomes the final agency decision fifteen (15) calendar days after notice of the decision has been mailed to the applicant, permittee, licensee and affected persons who have requested in writing to be notified, unless a written request for final review accompanied by a filing fee in the amount of $100 is filed with Department by the applicant, permittee, licensee or affected person.

Applicants, permittees, licensees, and affected parties are encouraged to engage in mediation or settlement discussions during the final review process.

If the Board declines in writing to schedule a final review conference, the Department's decision becomes the final agency decision and an applicant, permittee, licensee, or affected person may request a contested case hearing before the Administrative Law Court within thirty (30) calendar days after notice is mailed that the Board declined to hold a final review conference. In matters pertaining to decisions under the South Carolina Mining Act, appeals should be made to the South Carolina Mining Council.

I. Filing of Request for Final Review

1. A written Request for Final Review (RFR) and the required filing fee of one hundred dollars ($100) must be received by Clerk of the Board within fifteen (15) calendar days after notice of the staff decision has been mailed to the applicant, permittee, licensee, or affected persons. If the 15th day occurs on a weekend or State holiday, the RFR must be received by the Clerk on the next working day. RFRs will not be accepted after 5:00 p.m.
2. RFRs shall be in writing and should include, at a minimum, the following information:
   - The grounds for amending, modifying, or rescinding the staff decision;
   - a statement of any significant issues or factors the Board should consider in deciding how to handle the matter;
   - the relief requested;
   - a copy of the decision for which review is requested; and
   - mailing address, email address, if applicable, and phone number(s) at which the requestor can be contacted.
3. RFRs should be filed in person or by mail at the following address:
   South Carolina Board of Health and Environmental Control
   Attention: Clerk of the Board
   2600 Bull Street
   Columbia, South Carolina 29201
   Alternatively, RFR's may be filed with the Clerk by facsimile (803-898-3393) or by electronic mail (boardclerk@dhec.sc.gov).
4. The filing fee may be paid by cash, check or credit card and must be received by the 15th day.
5. If there is any perceived discrepancy in compliance with this RFR filing procedure, the Clerk should consult with the Chairman or, if the Chairman is unavailable, the Vice-Chairman. The Chairman or the Vice-Chairman will determine whether the RFR is timely and properly filed and direct the Clerk to (1) process the RFR for consideration by the Board or (2) return the RFR and filing fee to the requestor with a cover letter explaining why the RFR was not timely or properly filed. Processing an RFR for consideration by the Board shall not be interpreted as a waiver of any claim or defense by the agency in subsequent proceedings concerning the RFR.
6. If the RFR will be processed for Board consideration, the Clerk will send an Acknowledgement of RFR to the Requestor and the applicant, permittee, or licensee, if other than the Requestor. All personal and financial identifying information will be redacted from the RFR and accompanying documentation before the RFR is released to the Board, Department staff or the public.
7. If an RFR pertains to an emergency order, the Clerk will, upon receipt, immediately provide a copy of the RFR to all Board members. The Chairman, or in his or her absence, the Vice-Chairman shall based on the circumstances, decide whether to refer the RFR to the RFR Committee for expedited review or to decline in writing to schedule a Final Review Conference. If the Chairman or Vice-Chairman determines review by the RFR Committee is appropriate, the Clerk will forward a copy of the RFR to Department staff and Office of General Counsel. A Department response and RFR Committee review will be provided on an expedited schedule defined by the Chairman or Vice-Chairman.
8. The Clerk will email the RFR to staff and Office of General Counsel and request a Department Response within eight (8) working days. Upon receipt of the Department Response, the Clerk will forward the RFR and Department Response to all Board members for review, and all Board members will confirm receipt of the RFR to the Clerk by email. If a Board member does not confirm receipt of the RFR within a twenty-four (24) hour period, the Clerk will contact the Board member and confirm receipt. If a Board member believes the RFR should be considered by the RFR Committee, he or she will respond to the Clerk's email within forty-eight (48) hours and will request further review. If no Board member requests further review of the RFR within the forty-eight (48) hour period, the Clerk will send a letter by

certified mail to the Requestor, with copy by regular mail to the applicant, permittee, or licensee, if not the Requestor, stating the Board will not hold a Final Review Conference. Contested case guidance will be included within the letter. *NOTE: If the time periods described above end on a weekend or State holiday, the time is automatically extended to 5:00 p.m. on the next business day.*

9. If the RFR is to be considered by the RFR Committee, the Clerk will notify the Presiding Member of the RFR Committee and the Chairman that further review is requested by the Board. RFR Committee meetings are open to the public and will be public noticed at least 24 hours in advance.
10. Following RFR Committee or Board consideration of the RFR, if it is determined no Conference will be held, the Clerk will send a letter by certified mail to the Requestor, with copy by regular mail to the applicant, permittee, or licensee, if not the Requestor, stating the Board will not hold a Conference. Contested case guidance will be included within the letter.

II. Final Review Conference Scheduling

1. If a Conference will be held, the Clerk will send a letter by certified mail to the Requestor, with copy by regular mail to the applicant, permittee, or licensee, if not the Requestor, informing the Requestor of the determination.
2. The Clerk will request Department staff provide the Administrative Record.
3. The Clerk will send Notice of Final Review Conference to the parties at least ten (10) days before the Conference. The Conference will be publically noticed and should:
   - include the place, date and time of the Conference;
   - state the presentation times allowed in the Conference;
   - state evidence may be presented at the Conference;
   - if the conference will be held by committee, include a copy of the Chairman's order appointing the committee; and
   - inform the Requestor of his or her right to request a transcript of the proceedings of the Conference prepared at Requestor's expense.
4. If a party requests a transcript of the proceedings of the Conference and agrees to pay all related costs in writing, including costs for the transcript, the Clerk will schedule a court reporter for the Conference.

III. Final Review Conference and Decision

1. The order of presentation in the Conference will, subject to the presiding officer's discretion, be as follows:
   - Department staff will provide an overview of the staff decision and the applicable law to include [10 minutes]:
     - Type of decision (permit, enforcement, etc.) and description of the program.
     - Parties
     - Description of facility/site
     - Applicable statutes and regulations
     - Decision and materials relied upon in the administrative record to support the staff decision.
   - Requestor(s) will state the reasons for protesting the staff decision and may provide evidence to support amending, modifying, or rescinding the staff decision. [15 minutes] NOTE: The burden of proof is on the Requestor(s)
   - Rebuttal by Department staff [15 minutes]
   - Rebuttal by Requestor(s) [10 minutes]

   Note: Times noted in brackets are for information only and are superseded by times stated in the Notice of Final Review Conference or by the presiding officer.
2. Parties may present evidence during the conference; however, the rules of evidence do not apply.
3. At any time during the conference, the officers conducting the Conference may request additional information and may question the Requestor, the staff, and anyone else providing information at the Conference.
4. The presiding officer, in his or her sole discretion, may allow additional time for presentations and may impose time limits on the Conference.
5. All Conferences are open to the public.
6. The officers may deliberate in closed session.
7. The officers may announce the decision at the conclusion of the Conference or it may be reserved for consideration.
8. The Clerk will mail the written final agency decision (FAD) to parties within 30 days after the Conference. The written decision must explain the basis for the decision and inform the parties of their right to request a contested case hearing before the Administrative Law Court or in matters pertaining to decisions under the South Carolina Mining Act, to request a hearing before the South Carolina Mining Council.. The FAD will be sent by certified mail, return receipt requested.
9. Communications may also be sent by electronic mail, in addition to the forms stated herein, when electronic mail addresses are provided to the Clerk.

The above information is provided as a courtesy; parties are responsible for complying with all applicable legal requirements.

Rev 2, 5/8/2014

dhec
Healthy People. Healthy Communities.

March 26, 2019

CLARK WOOTEN, MANAGER
RDA LLC
PO BOX 527
NEWTON GROVE, NC 28366

RE: NPDES General Permit # SCG731435
RDA LLC/RDA QUARRY MINE
Williamsburg County

Dear Mr. Wooten:

Enclosed are your new Discharge Monitoring Report (DMR) Forms using EPA Form #3320-1. Please note that instructions for completing the forms are printed on the back of the forms. These DMR Forms are to be used for the NPDES General Permit issued to the above-referenced facility.

You will not receive a supply of the forms. These will be the only preprinted DMR forms you will receive until your permit is reissued or modified. If the DMR forms are lost or mutilated, you may request replacements by telephone call or in writing.

You must use these forms to make copies for all of your monthly and/or quarterly DMR Forms submitted on a yearly basis. Please send the properly signed DMRs and one copy of each completed DMR to:

S.C. Department of Health and Environmental Control
Bureau of Water/Water Pollution Control Division
Data and Records Management Section
2600 Bull Street
Columbia, South Carolina 29201

Please check the limits and monitoring requirements preprinted on the forms to confirm that they correctly reflect the NPDES General Permit conditions. Please notify me of any errors, and I will provide you new forms with the errors corrected.

DMR submittal requirements - Please refer to Page 18, PART IV.B.6 of your General Permit for recording requirements and submittal of DMR Forms requirements.

If you are planning on using your own computer generated DMR Forms, your forms must be approved before they will be accepted. Please submit your proposed DMR forms for approval to:

SCDHEC
Bureau of Water
ATTN: Patty G Barnes
NPDES Administration
2600 Bull Street
Columbia, SC 29201

If you have any questions concerning the DMR forms, please contact me at 803-898-4232. If you have questions about the permit, call Brett M Caswell at 803-898-4396.

Sincerely,

Patty G Barnes
NPDES Administration

Enclosures

e-mail: Lawrence M Ragsdale, PEE DEE REGION BEHS MYRTLE BEACH
Kristian Tucker, BOW/WP Enforcement
Shauna Stevens, PEE DEE REGION BEHS MYRTLE BEACH
Matthew Maxwell, PEE DEE REGION BEHS MYRTLE BEACH

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM *(NPDES)*
DISCHARGE MONITORING REPORT *(DMR)*

PERMITTEE NAME/ADDRESS

NAME RDA LLC
ADDRESS PO BOX 527
NEWTON GROVE, NC 28366

FACILITY RDA LLC/RDA QUARRY MINE
LOCATION SEABOARD RD & JUMPIN RUN RD

SCG731435	1AA 1	MINOR
PERMIT NUMBER	DISCHARGE NUMBER	

89 WM FINAL LIMITS
DMR VALID: 01/01/2018 - 12/31/2022
NOTE: Read Instructions before completing this form

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM				TO			

PARAMETER		QUANTITY OR LOADING			QUALITY OR CONCENTRATION				NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
		AVERAGE	MAXIMUM	UNITS	MINIMUM	AVERAGE	MAXIMUM	UNITS			
00400 LAB ID: _____ pH Standard Units MLOC=1	SAMPLE MEASUREMENT	********** **********	********** **********	********* *********		********** **********					
	PERMIT REQUIREMENT	********** **********	********** **********	********* *********	6.0 INST MIN	********** **********	8.5 INST MAX	SU		01/30	GR
00530 LAB ID: _____ Total Suspended Solids (TSS) MLOC=1	SAMPLE MEASUREMENT	********** **********	********** **********	********* *********	********** **********						
	PERMIT REQUIREMENT	********** **********	********** **********	********* *********	********** **********	25 AVERAGE	45 DAILY MX	MG/L		01/30	GR
01027 LAB ID: _____ Cadmium, Total MLOC=1	SAMPLE MEASUREMENT	********** **********	********** **********	********* *********	********** **********						
	PERMIT REQUIREMENT	********** **********	********** **********	********* *********	********** **********	0.3507 MO AVG	1.926 DAILY MX	UG/L		01/30	CP
01051 LAB ID: _____ Lead, Total MLOC=1	SAMPLE MEASUREMENT	********** **********	********** **********	********* *********	********** **********						
	PERMIT REQUIREMENT	********** **********	********** **********	********* *********	********** **********	3.394 MO AVG	88 DAILY MX	UG/L		01/30	CP
01059 LAB ID: _____ Thallium, Total MLOC=1	SAMPLE MEASUREMENT	********** **********	********** **********	********* *********	********** **********						
	PERMIT REQUIREMENT	********** **********	********** **********	********* *********	********** **********	0.47 MO AVG	0.6862 DAILY MX	UG/L		01/30	CP
50050 LAB ID: _____ Flow in Conduit or Thru Treatment Plant MLOC=1	SAMPLE MEASUREMENT				********** **********	********** **********	********** **********	********* *********			
	PERMIT REQUIREMENT	REPORT AVERAGE	REPORT DAILY MX	MGD	********** **********	********** **********	********** **********	********* *********		01/30	ES
82056 LAB ID: _____ ALUMINUM, TOTAL MLOC=1	SAMPLE MEASUREMENT	********** **********	********** **********	********* *********	********** **********						
	PERMIT REQUIREMENT	********** **********	********** **********	********* *********	********** **********	87 MO AVG	750 DAILY MX	UG/L		01/30	CP

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER			TELEPHONE		DATE		
	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.		910-385-4675				
TYPED OR PRINTED		SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	AREA CODE	NUMBER	YEAR	MO	DAY

COMMENTS AND EXPLANATION OF ANY VIOLATIONS *(Reference all attachments here)*
PART X.A.2.A. (1AA 1) - SAND AND GRAVEL MINES, DIMENSION STONE QUARRIES, CRUSHED STONE QUARRIES, AND OTHER MINES OR QUARRIES DETERMINED TO BE NONMETALLIC HEAVYWEIGHT AGGREGATES.

PERMITTEE NAME/ADDRESS

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM *(NPDES)*
DISCHARGE MONITORING REPORT *(DMR)*

NAME RDA LLC
ADDRESS PO BOX 527
NEWTON GROVE, NC 28366
FACILITY RDA LLC/RDA QUARRY MINE
LOCATION SEABOARD RD & JUMPIN RUN RD

SCG731435
PERMIT NUMBER

1AA 2
DISCHARGE NUMBER

MINOR

89 WM FINAL LIMITS
DMR VALID: 01/01/2018 - 12/31/2022
NOTE: Read Instructions before completing this form

	MONITORING PERIOD					
	YEAR	MO	DAY		YEAR	MO	DAY
FROM				TO			

PARAMETER		QUANTITY OR LOADING			QUALITY OR CONCENTRATION				NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
		AVERAGE	MAXIMUM	UNITS	MINIMUM	AVERAGE	MAXIMUM	UNITS			
00556 LAB ID: _____ Oil & Grease	SAMPLE MEASUREMENT	*********** ***********	*********** ***********	********* *********	*********** ***********						
MLOC=1	PERMIT REQUIREMENT	*********** ***********	*********** ***********	********* *********	*********** ***********	10 AVERAGE	15 DAILY MX	MG/L		01/90	GR
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
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	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER	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.		TELEPHONE		DATE		
			910-385-4675				
TYPED OR PRINTED		SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	AREA CODE	NUMBER	YEAR	MO	DAY

COMMENTS AND EXPLANATION OF ANY VIOLATIONS *(Reference all attachments here)*
PART X.A.2.A. (1AA 2) - FOR DIMENSION STONE OR CRUSHED STONE QUARRIES ONLY.

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM *(NPDES)*
DISCHARGE MONITORING REPORT *(DMR)*

PERMITTEE NAME/ADDRESS

NAME RDA LLC
ADDRESS PO BOX 527
NEWTON GROVE, NC 28366

FACILITY RDA LLC/RDA QUARRY MINE
LOCATION SEABOARD RD & JUMPIN RUN RD

SCG731435	1AA 3
PERMIT NUMBER	DISCHARGE NUMBER

MINOR

89 WM FINAL LIMITS
DMR VALID: 03/01/2018 - 12/31/2022
NOTE: Read Instructions before completing this form

MONITORING PERIOD

	YEAR	MO	DAY		YEAR	MO	DAY
FROM				TO			

PARAMETER		QUANTITY OR LOADING			QUALITY OR CONCENTRATION				NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
		AVERAGE	MAXIMUM	UNITS	MINIMUM	AVERAGE	MAXIMUM	UNITS			
71900 LAB ID: _____ Mercury, Total	SAMPLE MEASUREMENT	*********** ***********	*********** ***********	********* *********	*********** ***********						
MLOC=1	PERMIT REQUIREMENT	*********** ***********	*********** ***********	********* *********	*********** ***********	0.051 MO AVG	0.07446 DAILY MX	UG/L		01/YR	GR
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
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	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER	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.		TELEPHONE		DATE		
			910-385-4675				
TYPED OR PRINTED		SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	AREA CODE	NUMBER	YEAR	MO	DAY

COMMENTS AND EXPLANATION OF ANY VIOLATIONS *(Reference all attachments here)*

Addendum to Fact Sheet and Rationale
RDA, LLC - RDA Quarry
Coverage SCG731435 under SCG730000

Permitting Engineer: Brett M. Caswell

All waterbody data is provided on the Water Quality Spreadsheets. This data includes 7Q10, annual average flow, dilution factors, hardness, TSS and other information as explained in this rationale. Additional information as necessary to explain the values used will be provided below.

Flow

Flow from the RDA Quarry will vary depending on the need to dewater the pit from which the operator will mine limestone. The amount listed on the application is 2.7 million gallons per day (MGD). This translates to 4.18 cubic feet per second (cfs). By comparison the average flow for Black River is 934.1 cfs. It should be noted that the flow in the receiving stream (Murray Swamp) is zero (0) cfs; therefore, no dilution credit is given when setting limits.

Metals

In the comments regarding the proposed quarry, there were studies presented from a limestone mining operation in India, as well as Florida, along with an opinion of the RDA Quarry from a P.E. in Montana. In response to these studies, the Department contacted regional states to obtain data related to limestone quarries within their state. The State of Florida sent the Department links to their information and we compared their data to our water quality standards in South Carolina. Based on this evaluation, the Department asked the facility to perform on-site "baseline" groundwater sampling from six (6) different locations, one "above rock" and one "below rock," from three (3) monitoring wells that were representative of the initial area to be mined at the quarry. Each of these six (6) samples was analyzed for the following NPDES Part 2C application inorganic compounds:

Antimony, total	Thallium, total	Phosphorus (as P), total
Arsenic, total	Zinc, total	Sulfate (as SO4)
Beryllium, total	Cyanide, total	Sulfide (as S)
Cadmium, total	Total Dissolved Solids (TDS)	Sulfite (as SO3)
Chromium, total	Total Suspended Solids (TSS)	Aluminum, total
Copper, total	pH	Barium, total
Lead, total	Bromide	Boron, total
Mercury, total	Chloride	Cobalt, total
Nickel, total	Fluoride	Magnesium, total
Selenium, total	Nitrate-Nitrite (as N)	Molybdenum, total
Silver, total	Nitrogen, Total Organic (as N)	Tin, total

As a result of this analysis, Cadmium, Thallium, Lead and Aluminum will be limited in the permit and monitored monthly. Additionally, Mercury will be limited and monitored once per year. Since these limits are based on groundwater data and not actual effluent from the outfall, there is a reopener clause in the coverage letter, indicating that the coverage can be reopened after a year of effluent data collection to add or remove permit limits. The selected metals are discussed briefly below.

Cadmium (total)
In the water quality analysis, cadmium was identified as a pollutant with reasonable potential to cause or contribute to an exceedance of the applicable water quality standard; therefore, it will be limited in this General Permit coverage. See SC Regulation 61-68 and the attached water quality spreadsheet.

Lead
In the water quality analysis, lead was identified as a pollutant with reasonable potential to cause or contribute to an exceedance of the applicable water quality standard; therefore, it will be limited in this General Permit coverage. See SC Regulation 61-68 and the attached water quality spreadsheet.

Thallium
In the water quality analysis, thallium was identified as a pollutant with reasonable potential to cause or contribute to an exceedance of the applicable water quality standard; therefore, it will be limited in this General Permit coverage. See SC Regulation 61-68 and the water quality spreadsheet.

Aluminum, total
In the water quality analysis, aluminum was identified as a pollutant with reasonable potential to cause or contribute to an exceedance of the applicable water quality criteria, therefore, it will be limited in this General Permit coverage. See SC Regulation 61-68 and the attached water quality spreadsheet.

Mercury
In the water quality analysis, mercury was identified as a pollutant with reasonable potential to cause or contribute to an exceedance of the applicable water quality standard; therefore it will be limited in this General Permit coverage. See SC Regulation 61-68 and the attached water quality spreadsheet. Note that while mercury was not detected in the groundwater, the reporting limit for the analysis was higher than the reporting limit allowed by the Department. Therefore, for permitting purposes it is assumed to be present.

Pollutant/Parameter	Discharge Limitations & Monitoring Requirements			
	Concentration			
	Monthly Average	Daily Maximum	Sampling Frequency	Sample Type
Cadmium, total	0.3507 µg/l	1.926 µg/L	Monthly	Composite
Lead	3.394 µg/l	88 µg/L	Monthly	Composite
Thallium	0.47 µg/l	0.6862 µg/L	Monthly	Composite
Aluminum, total	87 µg/l	750 µg/L	Monthly	Composite
Mercury	0.051 µg/l	0.07446 µg/L	Annual	Grab

µg/L = micrograms per liter

Impairments
The following water quality monitoring stations are located downstream of the predicted flow path of the outfall from this quarry. These stations are all in the Black River and the specific station number and impaired pollutants (from the most recent 2016 list) are summarized in the table below:

Station Number	Impairment (Pollutant(s))
PD-046	Mercury
PD-692	Mercury
PD-659	Mercury
PD-170	Dissolved Oxygen, Mercury
PD-660	Mercury
PD-171	Mercury
PD-661	Mercury

Endangered Species

As part of its review process for coverages under general permit SCG730000, the Department conducts a review of the potential impacts to endangered species and coordinates with the Department of Natural Resources (SCDNR), the National Marine Fisheries Service (NMFS), and US Fish and Wildlife (USF&W), as applicable.

The Department's review indicated that the sturgeon has been known to use the Black River as habitat. The Department performed an analysis that estimates the concentration of TSS downstream of the discharge, and sought the assistance of NMFS regarding the pollutant's potential impact to the sturgeon in the Black River. Specifically, the Department asked NMFS: Do we as a permitting authority need to be concerned about this proposed quarry discharge negatively impacting the sturgeon?

NMFS concurred with DHEC's analysis and stated that based on the information provided, they did not see what route of effect a potential increase in turbidity (TSS) would cause to sturgeon or Atlantic sturgeon critical habitat. It's possible another route of effect that may adversely affect the sturgeon or Atlantic sturgeon critical habitat exists, but was unclear what would trigger that would be. They also stated that upon a closer review of the proposed project's location and the habitats surrounding that location, along with what they know about sturgeon behavior, that they would not anticipate a sturgeon occurring at the site proposed for the RDA mine.

And finally, after reviewing the RDA application for essential fish habitat (EFH) concerns, they stated that given how far inland the mine is located that NMFS had no comments or conservation recommendations at this time.

Based these recommendations, DHEC has concluded that the sturgeon will not be negatively impacted the discharge from RDA Quarry.

ATTACHMENT

Facility Information:

Name of Facility:	RDA Quarry				
NPDES Number:		Outfall	1	Tier	N/A
Potential to affect drinking water source?		No	Intake #		

Effluent Information:

Effluent Flow (mgd) :	2.700
Effluent TSS (mg/l) :	25
Effluent Hardness (mg/l $CaCO_3$):	25

Receiving Water Information at the Discharge Point:

Name of Receiving Waters:	Murray Swamp
Water Classification:	FW
7Q10 at discharge point (cfs) :	0.000
Average Annual Flow at discharge point (cfs):	0.000

Waterbody Information for protection of source water, if applicable:

Name of Waterbody for Intake:	
Water Classification:	
7Q10 for source water protection (cfs):	
AAF for source water protection (cfs):	

Stream TSS (mg/l) :	1	pH (Mix)	7.8
Stream Hardness (mg/l $CaCO_3$)	25		

Default Stream TSS = 1 mg/l

Default Stream Hardness = 25 mg/l

Updated: September 10, 2015

	Site Specific Method	SS-CCC (ug/l)	SS-CMC (ug/l)	WER	On 303(d)
Arsenic	N/A	N/A	N/A	N/A	No
Cadmium	N/A	N/A	N/A	N/A	No
Chromium+3	N/A	N/A	N/A	N/A	No
Chromium+6	N/A	N/A	N/A	N/A	No
Copper	N/A	N/A	N/A	N/A	No
Lead	N/A	N/A	N/A	N/A	No
Mercury	N/A		N/A	N/A	*Yes*
Nickel	N/A	N/A	N/A	N/A	No
Zinc	N/A	N/A	N/A	N/A	No
Silver	N/A		N/A	N/A	No
PCBs					No

Parameter	PQL (mg/l)	Background Concentration 90th percentile (mg/l)	Background Concentration Median (mg/l)	Data as Reported on NPDES Permit Application and/or DMR etc. Average Enter "<"	Average mg/l	Average # samp.	Maximum "<"	Maximum mg/l	Maximum # samp.	Proposed # samples per month	CV for Monthly average	CV for Daily Max.		Parameter
Metals, Cyanide, Phenols													Y	
Antimony	0.0050			<	0.01	1	<	0.01	1	1	0.60	0.60	Y	Antimony
Arsenic, total	0.0050				0.00031	1		0.00031	1	1	0.60	0.60	Y	Arsenic, total
Beryllium	0.0010				0.0002	1		0.0002	1	1	0.60	0.60	Y	Beryllium
Cadmium, total	0.00010			<	0.001	1	<	0.001	1	1	0.60	0.60	Y	Cadmium, total
Chromium, total	0.0050			<	0.005	1	<	0.005	1	1	0.60	0.60	Y	Chromium, total
Copper, total	0.010			<	0.01	1	<	0.01	1	1	0.60	0.60	Y	Copper, total
Lead	0.0020				0.0011	1		0.0011	1	1	0.60	0.60	Y	Lead
Mercury	0.00000050			<	0.0002	1	<	0.0002	1	1	0.60	0.60	Y	Mercury
Nickel	0.010			<	0.01	1	<	0.01	1	1	0.60	0.60	Y	Nickel
Selenium	0.0050			<	0.005	1	<	0.005	1	1	0.60	0.60	Y	Selenium
Silver, total	0.0050			<	0.005	1	<	0.005	1	1	0.60	0.60	Y	Silver, total
Thallium	0.00050				0.00015	1		0.00015	1	1	0.60	0.60	Y	Thallium
Zinc, total	0.010				0.016	1		0.016	1	1	0.60	0.60	Y	Zinc, total
Cyanide, total	0.010			<	0.005	1	<	0.005	1	1	0.60	0.60	Y	Cyanide, total
Phenols, total	0.0050									1	0.60	0.60	Y	Phenols, total
Volatile Organic Compounds													Y	
Acid Extractable Compounds													Y	
Base-Neutral Compounds													Y	
Other Parameters													Y	
Aluminum, total	0.050				0.67	1		0.67	1	1	0.60	0.60	Y	Aluminum, total
Barium	0.050				0.12	1		0.12	1	1	0.60	0.60	Y	Barium
Chromium III	0.010			<	0.005	1	<	0.005	1	1	0.60	0.60	Y	Chromium III

Parameter	PQL (mg/l)	Background Concentration 90th percentile (mg/l)	Background Concentration Median (mg/l)	Data as Reported on NPDES Permit Application and/or DMR etc. Average Enter "<"	Average mg/l	Average # samp.	Maximum "<"	Maximum mg/l	Maximum # samp.	Proposed # samples per month	CV for Monthly average	CV for Daily Max.		Parameter
Chromium VI	0.010			<	0.005	1	<	0.005	1	1	0.60	0.60	Y	Chromium VI
Cobalt	0.020			<	0.005	1	<	0.005	1	1	0.60	0.60	Y	Cobalt
Fluoride	0.10			<	**0.2**	1	<	**0.2**	1	1	0.60	0.60	Y	Fluoride
Magnesium	0.050				**1.9**	1		**1.9**	1	1	0.60	0.60	Y	Magnesium
Molybdenum	0.020				0.017	1		0.017	1	1	0.60	0.60	Y	Molybdenum
Nitrate-nitrite (as N)	0.020				**2.1**	1		**2.1**	1	1	0.60	0.60	Y	Nitrate-nitrite (as N)
Sulfate (as SO_4)	5.0				**8.7**	1		**8.7**	1	1	0.60	0.60	Y	Sulfate (as SO4)
*** Sulfide (as S)	0.1			<	0.1	1	<	0.1	1	1	0.60	0.60	Y	Sulfide (as S)
Tin	0.010			<	**0.2**	1	<	**0.02**	1	1	0.60	0.60	Y	Tin

Name: -
NPDES#: -

Effl. Flow (MGD) (Q_d)	2.700
7Q10(MGD) (Q_{7Q10})	0.000

TSS Data:

Effluent TSS (mg/l)	25.000
Stream TSS (mg/l) (TSS_b)	1.000
Avg Mixed TSS (mg/l)	25.000

Hardness Data:

Effluent Hardness (mg/l)	25
Stream Hardness (mg/l)	25
Actual Mixed Hardness (mg/l)	25
Calc Mixed Hardness (mg/l)	25.000

	constants for streams										Adjusted instream standard				Derived Aquatic Life Limits	
	K_{p0}	a	CCC	CF_{CCC}	CMC	CF_{CMC}	K_{ph}	K_p	C_d avg	C_d max	C_p avg	C_p max	C_t avg	C_t max	C_{aqlife} avg	C_{aqlife} max
Parameter	(l/mg)		(µg/l)		(µg/l)		(l/mg)	(l/mg)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)
Arsenic	4.80E+05	-0.7286	150	1.000	340	1.000	4.80E+05	4.60E+04	150.000	340.000	222.000	503.200	322.4778837	730.950	322.48	730.95
Cadmium	4.00E+06	-1.1307	0.10	0.967	0.53	1.002	4.00E+06	1.05E+05	0.097	0.531	0.484	2.655	0.351	1.926	0.35	1.93
Chromium+3	3.36E+06	-0.9304	28	0.860	580	0.316	3.36E+06	1.68E+05	24.080	183.280	104.989	799.101	125.306	953.742	125.31	953.74
Chromium+6	3.36E+06	-0.9304	11	0.962	16	0.982	3.36E+06	1.68E+05	10.582	15.712	46.138	68.504	55.066	81.761	55.07	81.76
Copper	1.04E+06	-0.7436	2.9	0.960	3.8	0.960	1.04E+06	9.50E+04	2.784	3.638	5.679	7.422	9.393	12.276	9.39	12.28
Lead	2.80E+06	-0.8	0.54	0.993	14	0.993	2.80E+06	2.13E+05	0.536	13.902	2.038	52.828	3.394	88.003	3.39	88.00
Mercury*	2.91E+06	-1.1356	0.91	0.85	1.6	0.85	2.91E+06	7.52E+04	0.774	1.360	3.024	5.318	2.228	3.918	2.23	3.92
Nickel	4.90E+05	-0.5719	16	0.997	150	0.998	4.90E+05	7.78E+04	15.952	149.700	23.768	223.053	46.960	440.689	46.96	440.69
Zinc	1.25E+06	-0.7038	37	0.986	37	0.978	1.25E+06	1.30E+05	36.482	36.186	82.085	81.419	154.802	153.546	154.80	153.55

*CCC for mercury cannot be converted to dissolved phase

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
9					Aquatic Life				Human Health						
10		Parameter	PQL	Carcinogen	FW Aquatic Life		SW Aquatic Life		Water/ Organism	Organism	MCL	Organoleptic	Proposed Sample Frequency (for determining HH max values)		
11			(ug/l)	Y/N	Avg (ug/l)	Max (ug/l)	Avg (ug/l)	Max (ug/l)	Avg (ug/l)	Avg (ug/l)	Avg (ug/l)	Avg (ug/l)	#samp/mth	CV	MDL/AML
12	**Metals, Cyanide, Phenols**														
13		Antimony	5.0	N	270	480	-	-	5.6	640	6.0	-	1	0.6	1.46
14		Arsenic, total	5.0	Y	*222*	*503*	36	69	10	10	10	-	1	0.6	1.46
15		Beryllium	1.0	N	1.6	3.2	-	-	-	-	4.0	-	1	0.6	1.46
16		Cadmium, total	0.1	N	*0.5*	*2.7*	9.3	43	-	-	5.0	-	1	0.6	1.46
17		Chromium, total	5.0	N	-	-	-	-	-	-	100	-	1	0.6	1.46
18		Copper, total	10.0	N	*5.7*	*7.4*	3.7	5.8	1300	-	-	1000	1	0.6	1.46
19		Lead	2.0	N	*2.04*	*53*	8.5	220	-	-	-	-	1	0.6	1.46
20		Mercury	0.00050	N	3.02	5.3	1.1	2.1	0.05	0.051	2.0	-	1	0.6	1.46
21		Nickel	10.0	N	*24*	*223*	8.3	75	610	4600	-	-	1	0.6	1.46
22		Selenium	5.0	N	5.0	20	71	290	170	4200	50	-	1	0.6	1.46
23		Silver, total	5.0	N	-	0.19	-	1.2	-	-	-	-	1	0.6	1.46
24		Thallium	0.50	N	12	24	65	130	0.24	0.47	2.0	-	1	0.6	1.46
25		Zinc, total	10	N	-	*81*	86	95	7400	26000	-	5000	1	0.6	1.46
26		Cyanide, total	10	N	5.2	22	1.0	1.0	140	140	200	-	1	0.6	1.46
27		Phenols, total	5.0	N	-	-	-	-	-	-	-	-	1	0.6	1.46
28	**Volatile Organic Compounds**														
57	**Acid Extractable Compounds**														
69	**Base-Neutral Compounds**														
115	**Other Parameters**														
124		Aluminum, total	50	N	87	750	-	-	-	-	-	-	1	0.6	1.46
127		Barium	50	N	-	-	-	-	1000	-	2000	-	1	0.6	1.46
161		Chromium III	10	N	*105*	*799*	-	-	-	-	100	-	1	0.6	1.46
162		Chromium VI	10	N	*46*	*69*	50	1100	-	-	100	-	1	0.6	1.46
163		Cobalt	20	N	-	-	-	-	-	-	-	-	1	0.6	1.46
209		Fluoride	100	N	-	-	-	-	-	-	4000	-	1	0.6	1.46
220		Magnesium	50.000	N	-	-	-	-	-	-	-	-	1	0.6	1.46
226		Molybdenum	20.000	N	-	-	-	-	-	-	-	-	1	0.6	1.46
228		Nitrate-nitrite (as N)	20.000	N	-	-	-	-	-	-	10000	-	1	0.6	1.46
243		Sulfate (as SO4)	5000	N	-	-	-	-	-	-	-	-	1	0.6	1.46
244		Sulfide (as S)	100	N	2.0	4.0	2.0	4.0	-	-	-	-	1	0.6	1.46
251		Tin	10	N	-	-	-	-	-	-	-	-	1	0.6	1.46

	A	B	P	Q	R	S	T	U	V	W	X	Y	Z	AA
9			Value for Protection of		Value for Protection of		Value for Protection of Human Health							
10		Parameter	FW Aquatic Life		SW Aquatic Life		Water/Organism		Organism		MCL		Organoleptic	
11			Avg (mg/l)	Max (mg/l)	Avg (mg/l)	Max (mg/l)	Avg (mg/l)	Max (mg/l)	Avg (mg/l)	Max (mg/l)	Avg (mg/l)	Max (mg/l)	Avg (mg/l)	Max (mg/l)
12	**Metals, Cyanide, Phenols**													
13		Antimony	2.700E-01	4.800E-01			2.108E+00	3.077E+00	6.400E-01	9.344E-01	2.258E+00	3.297E+00		
14		Arsenic, total	**3.225E-01**	**7.309E-01**	3.600E-02	6.900E-02	2.712E+01	3.959E+01	1.000E-02	1.460E-02	2.712E+01	3.959E+01		
15		Beryllium	1.606E-03	3.212E-03							1.506E+00	2.198E+00		
16		Cadmium, total	**3.507E-04**	**1.926E-03**	9.300E-03	4.300E-02					1.882E+00	2.748E+00		
17		Chromium, total									3.764E+01	5.495E+01		
18		Copper, total	**9.393E-03**	**1.228E-02**	3.700E-03	5.800E-03	4.893E+02	7.144E+02					1.000E+00	1.460E+00
19		Lead	**3.394E-03**	**8.800E-02**	8.500E-03	2.200E-01								
20		Mercury	**2.228E-03**	**3.918E-03**	1.100E-03	2.100E-03	5.000E-05	7.300E-05	5.100E-05	7.446E-05	2.000E-03	2.920E-03		
21		Nickel	**4.696E-02**	**4.407E-01**	8.300E-03	7.500E-02	2.296E+02	3.352E+02	4.600E+00	6.716E+00				
22		Selenium	5.000E-03	2.000E-02	7.100E-02	2.900E-01	6.399E+01	9.342E+01	4.200E+00	6.132E+00	1.882E+01	2.748E+01		
23		Silver, total		1.900E-04		1.200E-03								
24		Thallium	1.212E-02	2.424E-02	6.455E-02	1.300E-01	9.033E-02	1.319E-01	4.700E-04	6.862E-04	7.528E-01	1.099E+00		
25		Zinc, total		**1.535E-01**	8.600E-02	9.500E-02	2.785E+03	4.066E+03	2.600E+01	3.796E+01			5.000E+00	7.300E+00
26		Cyanide, total	5.200E-03	2.200E-02	1.000E-03	1.000E-03	5.269E+01	7.693E+01	1.400E-01	2.044E-01	7.528E+01	1.099E+02		
27		Phenols, total												
28	**Volatile Organic Compounds**													
57	**Acid Extractable Compounds**													
69	**Base-Neutral Compounds**													
115	**Other Parameters**													
124		Aluminum, total	8.700E-02	7.500E-01										
127		Barium					3.764E+02	5.495E+02			7.528E+02	1.099E+03		
161		Chromium III	**1.253E-01**	**9.537E-01**							3.764E+01	5.495E+01		
162		Chromium VI	**5.507E-02**	**8.176E-02**	5.000E-02	1.100E+00					3.764E+01	5.495E+01		
163		Cobalt												
209		Fluoride									1.506E+03	2.198E+03		
220		Magnesium												
226		Molybdenum												
228		Nitrate-nitrite (as N)									3.764E+03	5.495E+03		
243		Sulfate (as SO4)												
244		Sulfide (as S)	2.000E-03	4.000E-03	2.000E-03	4.000E-03								
251		Tin												

	A	B	AB	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM
9			Min. Value		Governing Criterion		Min. Value		Governing Criterion		Min. Value		Governing Criterion	
10		Parameter	Fresh Water				Salt Water				Fresh/Salt Water			
11			Avg (mg/l)	Max (mg/l)	Avg (mg/l)	Max (mg/l)	Avg (mg/l)	Max (mg/l)	Avg	Max	Avg (mg/l)	Max (mg/l)	Avg	Max
12	**Metals, Cyanide, Phenols**													
13		Antimony	2.700E-01	4.800E-01	AL	AL	6.400E-01	9.344E-01	HHOrg	HHOrg	2.700E-01	4.800E-01	AL-fw	AL-fw
14		Arsenic, total	1.000E-02	1.460E-02	HHOrg	HHOrg	1.000E-02	1.460E-02	HHOrg	HHOrg	1.000E-02	1.460E-02	HHOrg	HHOrg
15		Beryllium	1.606E-03	3.212E-03	AL	AL	1.506E+00	2.198E+00	MCL	MCL	1.606E-03	3.212E-03	AL-fw	AL-fw
16		Cadmium, total	3.507E-04	1.926E-03	AL	AL	9.300E-03	4.300E-02	AL	AL	3.507E-04	1.926E-03	AL-fw	AL-fw
17		Chromium, total	3.764E+01	5.495E+01	MCL	MCL	3.764E+01	5.495E+01	MCL	MCL	3.764E+01	5.495E+01	MCL	MCL
18		Copper, total	9.393E-03	1.228E-02	AL	AL	3.700E-03	5.800E-03	AL	AL	3.700E-03	5.800E-03	AL-sw	AL-sw
19		Lead	3.394E-03	8.800E-02	AL	AL	8.500E-03	2.200E-01	AL	AL	3.394E-03	8.800E-02	AL-fw	AL-fw
20		Mercury	5.000E-05	7.300E-05	HHW/O	HHW/O	5.000E-05	7.300E-05	HHW/O	HHW/O	5.000E-05	7.300E-05	HHW/O	HHW/O
21		Nickel	4.696E-02	4.407E-01	AL	AL	8.300E-03	7.500E-02	AL	AL	8.300E-03	7.500E-02	AL-sw	AL-sw
22		Selenium	5.000E-03	2.000E-02	AL	AL	7.100E-02	2.900E-01	AL	AL	5.000E-03	2.000E-02	AL-fw	AL-fw
23		Silver, total	-	1.900E-04		AL	-	1.200E-03		AL	-	1.900E-04		AL-fw
24		Thallium	4.700E-04	6.862E-04	HHOrg	HHOrg	4.700E-04	6.862E-04	HHOrg	HHOrg	4.700E-04	6.862E-04	HHOrg	HHOrg
25		Zinc, total	5.000E+00	1.535E-01	OL	AL	8.600E-02	9.500E-02	AL	AL	8.600E-02	9.500E-02	AL-sw	AL-sw
26		Cyanide, total	5.200E-03	2.200E-02	AL	AL	1.000E-03	1.000E-03	AL	AL	1.000E-03	1.000E-03	AL-sw	AL-sw
27		Phenols, total	-	-			-	-			-	-		
28	**Volatile Organic Compounds**													
57	**Acid Extractable Compounds**													
69	**Base-Neutral Compounds**													
115	**Other Parameters**													
124		Aluminum, total	8.700E-02	7.500E-01	AL	AL	-	-			8.700E-02	7.500E-01	AL-fw	AL-fw
127		Barium	3.764E+02	5.495E+02	HHW/O	HHW/O	3.764E+02	5.495E+02	HHW/O	HHW/O	3.764E+02	5.495E+02	HHW/O	HHW/O
161		Chromium III	1.253E-01	9.537E-01	AL	AL	3.764E+01	5.495E+01	MCL	MCL	1.253E-01	9.537E-01	AL-fw	AL-fw
162		Chromium VI	5.507E-02	8.176E-02	AL	AL	5.000E-02	1.100E+00	AL	AL	5.000E-02	8.176E-02	AL-sw	AL-fw
163		Cobalt	-	-			-	-			-	-		
209		Fluoride	1.506E+03	2.198E+03	MCL	MCL	1.506E+03	2.198E+03	MCL	MCL	1.506E+03	2.198E+03	MCL	MCL
220		Magnesium	-	-			-	-			-	-		
226		Molybdenum	-	-			-	-			-	-		
228		Nitrate-nitrite (as N)	3.764E+03	5.495E+03	MCL	MCL	3.764E+03	5.495E+03	MCL	MCL	3.764E+03	5.495E+03	MCL	MCL
243		Sulfate (as SO4)	-	-			-	-			-	-		
244		Sulfide (as S)	2.000E-03	4.000E-03	AL	AL	2.000E-03	4.000E-03	AL	AL	2.000E-03	4.000E-03	AL-fw	AL-fw
251		Tin	-	-			-	-			-	-		

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
8				Derived Limits											
9		Parameter	PQL	Fresh Water		Data for Reasonable Potential Analysis				For Average		For Maximum		Receiving Water Concentration	
10			(mg/l)	Avg	Max	Avg	# of samp	Max	# of samp	CV	M. Factor	CV	M. Factor	RWC	
11				(mg/l)	(mg/l)	(mg/l)	n	(mg/l)	n	for RP	for RP	for RP	for RP	Avg (mg/l)	Max (mg/l)
12	**Metals, Cyanide, Phenols**														
13		Antimony	0.0050	2.700E-01	4.800E-01	0.01	1	0.01	1	0.60	6.20	0.60	6.20	6.200E-02	6.200E-02
14		Arsenic, total	0.0050	1.000E-02	1.460E-02	0.00031	1	0.00031	1	0.60	6.20	0.60	6.20	1.922E-03	1.922E-03
15		Beryllium	0.0010	1.606E-03	3.212E-03	0.0002	1	0.0002	1	0.60	6.20	0.60	6.20	1.240E-03	1.240E-03
16		Cadmium, total	0.00010	3.507E-04	1.926E-03	0.001	1	0.001	1	0.60	6.20	0.60	6.20	6.200E-03	6.200E-03
17		Chromium, total	0.0050	-	-	0	1	0	1	0.60	6.20	0.60	6.20	0.000E+00	0.000E+00
18		Copper, total	0.010	9.393E-03	1.228E-02	0	1	0	1	0.60	6.20	0.60	6.20	0.000E+00	0.000E+00
19		Lead	0.0020	3.394E-03	8.800E-02	0.0011	1	0.0011	1	0.60	6.20	0.60	6.20	6.820E-03	6.820E-03
20		Mercury	0.00000050	5.100E-05	7.446E-05	0.0002	1	0.0002	1	0.60	6.20	0.60	6.20	1.240E-03	1.240E-03
21		Nickel	0.010	4.698E-02	4.407E-01	0	1	0	1	0.60	6.20	0.60	6.20	0.000E+00	0.000E+00
22		Selenium	0.0050	5.000E-03	2.000E-02	0	1	0	1	0.60	6.20	0.60	6.20	0.000E+00	0.000E+00
23		Silver, total	0.0050	-	1.900E-04	0	1	0	1	0.60	6.20	0.60	6.20	0.000E+00	0.000E+00
24		Thallium	0.0005	4.700E-04	6.862E-04	0.00015	1	0.00015	1	0.60	6.20	0.60	6.20	9.300E-04	9.300E-04
25		Zinc, total	0.010	5.000E+00	1.535E-01	0.016	1	0.016	1	0.60	6.20	0.60	6.20	9.920E-02	9.920E-02
26		Cyanide, total	0.010	5.200E-03	2.200E-02	0	1	0	1	0.60	6.20	0.60	6.20	0.000E+00	0.000E+00
27		Phenols, total	0.0050	-	-	0	0	0	0	0.60	N/A	0.60	N/A	No Data	No Data
28	**Volatile Organic Compounds**														
57	**Acid Extractable Compounds**														
69	**Base-Neutral Compounds**														
115	**Other Parameters**														
124		Aluminum, total	0.050	8.700E-02	7.500E-01	0.67	1	0.67	1	0.60	6.20	0.60	6.20	4.154E+00	4.154E+00
127		Barium	0.050	-	-	0.12	1	0.12	1	0.60	6.20	0.60	6.20	7.440E-01	7.440E-01
161		Chromium III	0.010	1.253E-01	9.537E-01	0	1	0	1	0.60	6.20	0.60	6.20	0.000E+00	0.000E+00
162		Chromium VI	0.010	5.507E-02	8.176E-02	0	1	0	1	0.60	6.20	0.60	6.20	0.000E+00	0.000E+00
163		Cobalt	0.020	-	-	0	1	0	1	0.60	6.20	0.60	6.20	0.000E+00	0.000E+00
209		Fluoride	0.10	-	-	0.2	1	0.2	1	0.60	6.20	0.60	6.20	1.240E+00	1.240E+00
220		Magnesium	0.050	-	-	1.9	1	1.9	1	0.60	6.20	0.60	6.20	1.178E+01	1.178E+01
226		Molybdenum	0.020	-	-	0.017	1	0.017	1	0.60	6.20	0.60	6.20	1.054E-01	1.054E-01
228		Nitrate-nitrite (as N)	0.020	-	-	2.1	1	2.1	1	0.60	6.20	0.60	6.20	1.302E+01	1.302E+01
243		Sulfate (as SO4)	5.000	-	-	8.7	1	8.7	1	0.60	6.20	0.60	6.20	5.394E+01	5.394E+01
244		Sulfide (as S)	0.1	2.000E-03	4.000E-03	0	1	0	1	0.60	6.20	0.60	6.20	0.000E+00	0.000E+00
251		Tin	0.010	-	-	0.2	1	0.02	1	0.60	6.20	0.60	6.20	1.240E+00	1.240E-01

	A	B	P	Q	R	S	T	U	V	W	AB
8			Reasonable Potential		Permit Limits Fresh Water		Governing Criterion Fresh Water		Reg. Reference		Site Specific Limits Applied
9		Parameter									
10			Yes/No		Avg	Max					
11			Avg	Max	(mg/l)	(mg/l)	Avg	Max	Average	Maximum	
12	**Metals, Cyanide, Phenols**										
13		Antimony	No	No							
14		Arsenic, total	No	No							N/A
15		Beryllium	No	No							
16		Cadmium, total	Yes	Yes	3.507E-04	1.926E-03	AL	AL	R.61-68, Appendix	R.61-68, Appendix	N/A
17		Chromium, total	No	No							
18		Copper, total	No	No							N/A
19		Lead	Yes	No	3.394E-03	8.800E-02	AL	AL	R.61-68, Appendix	R.61-68, Appendix	N/A
20		Mercury	Yes	Yes	5.100E-05	7.446E-05	HHOrg	HHOrg	R.61-68, Appendix	R.61-68, Appendix	N/A
21		Nickel	No	No							N/A
22		Selenium	No	No							
23		Silver, total	No	No							N/A
24		Thallium	Yes	Yes	4.700E-04	6.862E-04	HHOrg	HHOrg	R.61-68, Appendix	R.61-68, Appendix	
25		Zinc, total	No	No							N/A
26		Cyanide, total	No	No							
27		Phenols, total									
28	**Volatile Organic Compounds**										
57	**Acid Extractable Compounds**										
69	**Base-Neutral Compounds**										
115	**Other Parameters**										
124		Aluminum, total	Yes	Yes	8.700E-02	7.500E-01	AL	AL	53 FR 33178, 8/30/88	53 FR 33178, 8/30/88	
127		Barium	No	No							
161		Chromium III	No	No							N/A
162		Chromium VI	No	No							N/A
163		Cobalt	No	No							
209		Fluoride	No	No							
220		Magnesium	No	No							
226		Molybdenum	No	No							
228		Nitrate-nitrite (as N)	No	No							
243		Sulfate (as SO4)	No	No							
244		Sulfide (as S)	No	No							
251		Tin	No	No							