MAR 2 1 2016

NPDES PERMIT APPLICATION

FOR

SAND PRODUCTS, LLC

MINERAL SPRINGS MINE

OVERTON COUNTY, TENNESSEE

Job Number R-259
February 18, 2016

Prepared By:

C E DESIGNERS, INC.
108 EAST COMMERCIAL AVENUE
MONTEREY, TENNESSEE 38574
(931) 839-2350

TABLE OF CONTENTS

Please print or type in the unshaded areas only
(fill-in areas are spaced for elite type, i.e., 12 characters/inch).

Form Approved. OMB No. 2040-0086. Approval expires 5-31-92

FORM 1 GENERAL

U.S. ENVIRONMENTAL PROTECTION AGENCY

GENERAL INFORMATION

Consolidated Permits Program

(Read the "General Instructions" before starting.)

I. EPA I.D. NUMBER

F T N 0 0 7 2 3 6 2 D

LABEL ITEMS

I. EPA I.D. NUMBER

III. FACILITY NAME

V. FACILITY MAILING ADDRESS

VI. FACILITY LOCATION

PLEASE PLACE LABEL IN THIS SPACE

GENERAL INSTRUCTIONS

If a preprinted label has been provided, affix it in the designated space. Review the information carefully; if any of it is incorrect, cross through it and enter the correct data in the appropriate fill-in area below. Also, if any of the preprinted data is absent *(the area to the left of the label space lists the information that should appear)*, please provide it in the proper fill-in area(s) below. If the label is complete and correct, you need not complete Items I, III, V, and VI *(except VI-B which must be completed regardless)*. Complete all items if no label has been provided. Refer to the instructions for detailed item descriptions and for the legal authorizations under which this data is collected.

II. POLLUTANT CHARACTERISTICS

INSTRUCTIONS: Complete A through J to determine whether you need to submit any permit application forms to the EPA. If you answer "yes" to any questions, you must submit this form and the supplemental form listed in the parenthesis following the question. Mark "X" in the box in the third column if the supplemental form is attached. 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; see Section C of the instructions. See also, Section D of the instructions for definitions of bold-faced terms.

SPECIFIC QUESTIONS	MARK 'X' YES	NO	FORM ATTACHED
A. Is this facility a publicly owned treatment works which results in a discharge to waters of the U.S.? (FORM 2A)		X	
C. Is this a facility which currently results in discharges to waters of the U.S. other than those described in A or B above? (FORM 2C)	X		
E. Does or will this facility treat, store, or dispose of hazardous wastes? (FORM 3)		X	
G. Do you or will you inject at this facility any produced water or other fluids which are brought to the surface in connection with conventional oil or natural gas production, inject fluids used for enhanced recovery of oil or natural gas, or inject fluids for storage of liquid hydrocarbons? (FORM 4)		X	
I. Is this facility a proposed stationary source which is one of the 28 industrial categories listed in the instructions and which will potentially emit 100 tons per year of any air pollutant regulated under the Clean Air Act and may affect or be located in an attainment area? (FORM 5)		X	

SPECIFIC QUESTIONS	MARK 'X' YES	NO	FORM ATTACHED
B. Does or will this facility *(either existing or proposed)* include a concentrated animal feeding operation or aquatic animal production facility which results in a discharge to waters of the U.S.? (FORM 2B)		X	
D. Is this a proposed facility *(other than those described in A or B above)* which will result in a discharge to waters of the U.S.? (FORM 2D)		X	
F. Do you or will you inject at this facility industrial or municipal effluent below the lowermost stratum containing, within one quarter mile of the well bore, underground sources of drinking water? (FORM 4)		X	
H. Do you or will you inject at this facility fluids for special processes such as mining of sulfur by the Frasch process, solution mining of minerals, in situ combustion of fossil fuel, or recovery of geothermal energy? (FORM 4)		X	
J. Is this facility a proposed stationary source which is NOT one of the 28 industrial categories listed in the instructions and which will potentially emit 250 tons per year of any air pollutant regulated under the Clean Air Act and may affect or be located in an attainment area? (FORM 5)		X	

III. NAME OF FACILITY

1 SKIP MINERAL SPRINGS MINE

IV. FACILITY CONTACT

A. NAME & TITLE *(last, first, & title)*	B. PHONE *(area code & no.)*
2 BILLY C. HALL, PRESIDENT	9 3 1 8 3 9 7 2 7 2

V. FACILITY MAILING ADDRESS

A. STREET OR P.O. BOX

3 P. O. BOX 2369

B. CITY OR TOWN	C. STATE	D. ZIP CODE
4 COOKEVILLE	TN	3 8 5 0 2

VI. FACILITY LOCATION

A. STREET, ROUTE NO. OR OTHER SPECIFIC IDENTIFIER

5 4 0 3 9 HANGING LIMB ROAD

B. COUNTY NAME

OVERTON

C. CITY OR TOWN	D. STATE	E. ZIP CODE	F. COUNTY CODE (if known)
6 MONTEREY	TN	3 8 5 7 4	

CONTINUE ON REVERSE

CONTINUED FROM THE FRONT

VII. SIC CODES (4-digit, in order of priority)

A. FIRST	B. SECOND
1442 Construction Sand & Gravel	

C. THIRD	D. FOURTH

VIII. OPERATOR INFORMATION

A. NAME

SAND PRODUCTS, L. L. C.

B. Is the name listed in Item VIII-A also the owner? ☒ YES ☐ NO

C. STATUS OF OPERATOR (Enter the appropriate letter into the answer box. If "Other", specify.)

F = FEDERAL
S = STATE
P = PRIVATE
M = PUBLIC (other than federal or state)
O = OTHER (specify)

P

D. PHONE (area code & no.)

A 931 839 7272

E. STREET OR P.O. BOX

4039 HANGING LIMB ROAD

F. CITY OR TOWN

B MONTEREY

G. STATE TN

H. ZIP CODE 38574

IX. INDIAN LAND

Is the facility located on Indian lands? ☐ YES ☒ NO

X. EXISTING ENVIRONMENTAL PERMITS

A. NPDES (Discharges to Surface Water)	D. PSD (Air Emissions from Proposed Sources)
9 N TN 0072362	9 P
B. UIC (Underground Injection of Fluids)	**E. OTHER** (specify)
9 U	9 (specify)
C. RCRA (Hazardous Wastes)	**E. OTHER** (specify)
9 R	9 (specify)

XI. MAP

Attach to this application a topographic map of the area extending to at least one mile beyond property bounderies. 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.

XII. NATURE OF BUSINESS (provide a brief description)

Open pit mining of sand which is excavated, crushed, screened, washed & used for public sale or transported off site.

XIII. CERTIFICATION (see instructions)

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this application and all attachments and that, based on my inquiry of those persons immediately responsible for obtaining the information contained in the application, I believe that the information is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

A. NAME & OFFICIAL TITLE (type or print)	B. SIGNATURE	C. DATE SIGNED
Billy C. Hall President	Billy C Hall	18FEB16

COMMENTS FOR OFFICIAL USE ONLY

C

EPA Form 3510-1 (8-90)

ease print or type in the unshaded areas only.

EPA I.D. NUMBER (copy from Item 1 of Form 1): TN0072362

Form Approved
OMB No. 2040-0086
Approval expires 5-31-92

FORM 2C NPDES

EPA

U.S. ENVIRONMENTAL PROTECTION AGENCY
APPLICATION FOR PERMIT TO DISCHARGE WASTEWATER
EXISTING MANUFACTURING, COMMERCIAL, MINING AND SILVICULTURAL OPERATIONS
Consolidated Permits Program

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.

A. OUTFALL NUMBER (list)	B. LATITUDE			C. LONGITUDE			D. RECEIVING WATER (name)
	1. DEG.	2. MIN.	3. SEC.	1. DEG.	2. MIN.	3. SEC.	
001	36	09	09	85	12	10	Mineral Springs Branch
002	36	09	10	85	12	15	Mineral Springs Branch
003	36	09	08	85	12	13	Mineral Springs Branch

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 Item 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 runoff; (2) The average flow contributed by each operation; and (3) The treatment received by the wastewater. Continue on additional sheets if necessary.

1. OUTFALL NO. (list)	2. OPERATION(S) CONTRIBUTING FLOW		3. TREATMENT		
	a. OPERATION (list)	b. AVERAGE FLOW (include units)	a. DESCRIPTION	b. LIST CODES FROM TABLE 2C-1	
001	Sand	Intermittent	Sedimentation	1-U	
002	Sand	Intermittent	Sedimentation	1-U	
003	Sand	Intermittent	Sedimentation	1-U	

OFFICIAL USE ONLY *(effluent guidelines sub-categories)*

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

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

1. OUTFALL NUMBER *(list)*	2. OPERATION(s) CONTRIBUTING FLOW *(list)*	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 AVERAGE	2. MAXIMUM DAILY	1. LONG TERM AVERAGE	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 Item III-B)* ☒ NO *(to to Section IV)*

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

☐ YES *(complete Item III-C)* ☐ NO *(go to Section IV)*

C. If you answered "yes" to Item 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.

1. AVERAGE DAILY PRODUCTION			2. AFFECTED OUTFALLS
a. QUANTITY PER DAY	b. UNITS OF MEASURE	c. OPERATION, PRODUCT, MATERIAL, ETC. *(specify)*	*(list outfall numbers)*

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 may 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 Item IV-B)*

a. IDENTIFICATION OF CONDITION, AGREEMENT, ETC.	2. AFFECTED OUTFALLS		3. BRIEF DESCRIPTION OF PROJECT	4. FINAL COMPLIANCE DATE	
	a. NO.	b. SOURCE OF DISCHARGE		a. REQUIRED	b. 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 or planned schedules for construction. ☐ MARK "X" IF DESCRIPTION OF ADDITIONAL CONTROL PROGRAMS IS ATTACHED

EPA I.D. NUMBER (copy from Item 1 of Form 1)
TN 0072362

V. INTAKE AND EFFLUENT CHARACTERISTICS

A, B, & C: See instructions before proceeding — Complete one set of tables for each outfall — Annotate the outfall number in the space provided. NOTE: Tables V-A, V-B, and V-C are included on separate sheets numbered V-1 through V-9.

D. Use the space below to list any of the pollutants listed in Table 2c-3 of the instructions, 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
None			

VI. POTENTIAL DISCHARGES NOT COVERED BY ANALYSIS

Is any pollutant listed in Item 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 VI-B)

CONTINUE ON REVERSE

CONTINUED FROM THE FRONT

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 3 years?

☐ YES *(identify the test(s) and describe their purposes below)* ☒ NO *(go to Section VIII)*

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 telephone number of, and pollutants analyzed by, each such laboratory or firm below)* ☐ NO *(go to Section IX)*

A. NAME	B. ADDRESS	C. TELEPHONE (area code & no.)	D. POLLUTANTS ANALYZED (list)
Water Resources Center Tennessee Technological University	Box 5033 Cockeville, TN 38505	(931) 372-3061	pH Suspended Solids

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)*	B. PHONE NO. *(area code & no.)*
Billy C. Hall, President	(931) 839-7272
C. SIGNATURE	**D. DATE SIGNED**
Billy C Hall	18FEB16

PLEASE PRINT OR TYPE IN THE UNSHADED AREAS ONLY. You may report some or all of this information on separate sheets *(use the same format)* instead of completing these pages. SEE INSTRUCTIONS.

EPA I.D. NUMBER *(copy from Item 1 of Form 1)*: TN0072362

V. INTAKE AND EFFLUENT CHARACTERISTICS *(continued from page 3 of Form 2-C)*

OUTFALL NO.

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 a. MAXIMUM DAILY VALUE (1) CONCENTRATION	a. MAXIMUM DAILY VALUE (2) MASS	b. MAXIMUM 30 DAY VALUE (if available) (1) CONCENTRATION	b. MAXIMUM 30 DAY VALUE (if available) (2) MASS	c. LONG TERM AVRG. VALUE (if available) (1) CONCENTRATION	c. LONG TERM AVRG. VALUE (if available) (2) MASS	d. NO. OF ANALYSES	3. UNITS (specify if blank) a. CONCENTRATION	3. UNITS b. MASS	4. INTAKE (optional) a. LONG TERM AVERAGE VALUE (1) CONCENTRATION	4. INTAKE (optional) a. LONG TERM AVERAGE VALUE (2) MASS	4. INTAKE (optional) b. NO. OF ANALYSES
a. Biochemical Oxygen Demand (BOD)												
b. Chemical Oxygen Demand (COD)												
c. Total Organic Carbon (TOC)												
d. Total Suspended Solids (TSS)	40.0				6.0		12	mg/l				
e. Ammonia (as N)												
f. Flow	VALUE		VALUE		VALUE					VALUE		
g. Temperature (winter)	VALUE		VALUE		VALUE			°C		VALUE		
h. Temperature (summer)	VALUE		VALUE		VALUE			°C		VALUE		
i. pH	MINIMUM 6.0	MAXIMUM 9.0	MINIMUM	MAXIMUM			12	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 2a 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 2a, 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" a. BELIEVED PRESENT	2. MARK "X" b. BELIEVED ABSENT	3. EFFLUENT a. MAXIMUM DAILY VALUE (1) CONCENTRATION	a. MAXIMUM DAILY VALUE (2) MASS	b. MAXIMUM 30 DAY VALUE (if available) (1) CONCENTRATION	b. MAXIMUM 30 DAY VALUE (if available) (2) MASS	c. LONG TERM AVRG. VALUE (if available) (1) CONCENTRATION	c. LONG TERM AVRG. VALUE (if available) (2) MASS	d. NO. OF ANALYSES	4. UNITS a. CONCENTRATION	4. UNITS b. MASS	5. INTAKE (optional) a. LONG TERM AVERAGE VALUE (1) CONCENTRATION	5. INTAKE (optional) a. LONG TERM AVERAGE VALUE (2) MASS	5. INTAKE (optional) b. NO. OF ANALYSES
j. Bromide (24959-67-9)		X												
k. Chlorine, Total Residual		X												
l. Color		X												
m. Fecal Coliform		X												
n. Fluoride (16984-48-8)		X												
o. Nitrate-Nitrite (as N)		X												

CONTINUE ON REVERSE

ITEM V-B CONTINUED FROM FRONT

1. POLLUTANT AND CAS NO. (if available)	2. MARK 'X'		3. EFFLUENT							4. UNITS		5. INTAKE (optional)		
	a. BELIEVED PRESENT	b. BELIEVED ABSENT	a. MAXIMUM DAILY VALUE (1) CONCENTRATION	a. MAXIMUM DAILY VALUE (2) MASS	b. MAXIMUM 30 DAY VALUE (if available) (1) CONCENTRATION	b. MAXIMUM 30 DAY VALUE (if available) (2) MASS	c. LONG TERM AVRG. VALUE (if available) (1) CONCENTRATION	c. LONG TERM AVRG. VALUE (if available) (2) MASS	d. NO. OF ANALYSES	a. CONCENTRATION	b. MASS	a. LONG TERM AVERAGE VALUE (1) CONCENTRATION	a. LONG TERM AVERAGE VALUE (2) MASS	b. NO. OF ANALYSES
g. Nitrogen, Total Organic (as N)		X												
h. Oil and Grease		X												
i. Phosphorus (as P), Total (7723-14-0)		X												
j. Radioactivity														
(1) Alpha, Total														
(2) Beta, Total														
(3) Radium, Total														
(4) Radium 226, Total														
k. Sulfate (as SO_4) (14808-79-8)														
l. Sulfide (as S)														
m. Sulfite (as SO_3) (14265-45-3)														
n. Surfactants														
o. Aluminum, Total (7429-90-5)														
p. Barium, Total (7440-39-3)														
q. Boron, Total (7440-42-8)														
r. Cobalt, Total (7440-48-4)														
s. Iron, Total (7439-89-6)														
t. Magnesium, Total (7439-95-4)														
u. Molybdenum, Total (7439-98-7)														
v. Manganese, Total (7439-96-5)														
w. Tin, Total (7440-31-5)														
x. Titanium, Total (7440-32-6)														

EPA I.D. NUMBER (copy from Item 1 of Form 1)	OUTFALL NUMBER
TN0072362	

CONTINUED FROM PAGE 3 OF FORM 2-C

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, nonprocess wastewater outfalls, and nonrequired GC/MS fractions)*, mark "X" in column 2-b for each pollutant you know or have reason to believe is present. Mark "X" in column 2-c for each pollutant you believe is absent. If you mark column 2a for any pollutant, you must provide the results of at least one analysis for that pollutant. If you mark column 2b for any pollutant, you must provide the 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 2b for acrolein, acrylonitrile, 2,4 dinitrophenol, or 2-methyl-4, 6 dinitrophenol, you must provide the results of at least one analysis for each of these pollutants which 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 2b, 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 this part; please review each carefully. Complete one table *(all 7 pages)* for each outfall. See instructions for additional details and requirements.

1. POLLUTANT AND CAS NUMBER (if available)	2. MARK "X"			3. EFFLUENT							4. UNITS		5. INTAKE (optional)		
	a. TESTING REQUIRED	b. BELIEVED PRESENT	c. BELIEVED ABSENT	a. MAXIMUM DAILY VALUE (1) CONCENTRATION	a. MAXIMUM DAILY VALUE (2) MASS	b. MAXIMUM 30 DAY VALUE (if available) (1) CONCENTRATION	b. MAXIMUM 30 DAY VALUE (if available) (2) MASS	c. LONG TERM AVRG. VALUE (if available) (1) CONCENTRATION	c. LONG TERM AVRG. VALUE (if available) (2) MASS	d. NO. OF ANALYSES	a. CONCENTRATION	b. MASS	a. LONG TERM AVERAGE VALUE (1) CONCENTRATION	a. LONG TERM AVERAGE VALUE (2) MASS	b. NO. OF ANALYSES
METALS, CYANIDE, AND TOTAL PHENOLS															
IM. Antimony, Total (7440-36-0)															
IM. Arsenic, Total (7440-38-2)															
IM. Beryllium, Total, 7440-41-7)															
M. Cadmium, Total (7440-43-9)															
M. Chromium, Total (7440-47-3)															
M. Copper, Total (440-50-8)															
M. Lead, Total (439-92-1)															
M. Mercury, Total (439-97-6)															
M. Nickel, Total (440-02-0)															
M. Selenium, Total (7782-49-2)															
IM. Silver, Total (440-22-4)															
M. Thallium, Total (7440-28-0)															
M. Zinc, Total (440-66-6)															
IM. Cyanide, Total (57-12-5)															
M. Phenols, Total															
DIOXIN															
2,3,7,8-Tetrachlorodibenzo-P-Dioxin (1764-01-6)				DESCRIBE RESULTS											

CONTINUED FROM THE FRONT

1. POLLUTANT AND CAS NUMBER (if available)	2. MARK 'X'			3. EFFLUENT							4. UNITS		5. INTAKE (optional)		
	a. TESTING REQUIRED	b. BELIEVED PRESENT	c. BELIEVED ABSENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE (if available)		c. LONG TERM AVRG. VALUE (if available)		d. NO. OF ANALYSES	a. CONCENTRATION	b. MASS	a. LONG TERM AVERAGE VALUE		b. NO. OF ANALYSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
GC/MS FRACTION – VOLATILE COMPOUNDS															
1V. Acrolein (107-02-8)															
2V. Acrylonitrile (107-13-1)															
3V. Benzene (71-43-2)															
4V. Bis (Chloromethyl) Ether (542-88-1)															
5V. Bromoform (75-25-2)															
6V. Carbon Tetrachloride (56-23-5)															
7V. Chlorobenzene (108-90-7)															
8V. Chlorodibromomethane (124-48-1)															
9V. Chloroethane (75-00-3)															
10V. 2-Chloroethylvinyl Ether (110-75-8)															
11V. Chloroform (67-66-3)															
12V. Dichlorobromomethane (75-27-4)															
13V. Dichlorodifluoromethane (75-71-8)															
14V. 1,1-Dichloroethane (75-34-3)															
15V. 1,2-Dichloroethane (107-06-2)															
16V. 1,1-Dichloroethylene (75-35-4)															
17V. 1,2-Dichloropropane (78-87-5)															
18V. 1,3-Dichloropropylene (542-75-6)															
19V. Ethylbenzene (100-41-4)															
20V. Methyl Bromide (74-83-9)															
21V. Methyl Chloride (74-87-3)															

1. POLLUTANT AND CAS NUMBER (if available)	2. MARK 'X'			3. EFFLUENT							4. UNITS		5. INTAKE (optional)		
	a. TESTING REQUIRED	b. BELIEVED PRESENT	c. BELIEVED ABSENT	a. MAXIMUM DAILY VALUE (1) CONCENTRATION	a. MAXIMUM DAILY VALUE (2) MASS	b. MAXIMUM 30 DAY VALUE (if available) (1) CONCENTRATION	b. MAXIMUM 30 DAY VALUE (if available) (2) MASS	c. LONG TERM AVRG. VALUE (if available) (1) CONCENTRATION	c. LONG TERM AVRG. VALUE (if available) (2) MASS	d. NO. OF ANALYSES	a. CONCENTRATION	b. MASS	a. LONG TERM AVERAGE VALUE (1) CONCENTRATION	a. LONG TERM AVERAGE VALUE (2) MASS	b. NO. OF ANALYSES
GC/MS FRACTION -- VOLATILE COMPOUNDS *(continued)*															
22V. Methylene Chloride (75-09-2)															
23V. 1,1,2,2-Tetrachloroethane (79-34-5)															
24V. Tetrachloroethylene (127-18-4)															
25V. Toluene (108-88-3)															
26V. 1,2-Trans-Dichloroethylene (156-60-5)															
27V. 1,1,1-Trichloroethane (71-55-6)															
28V. 1,1,2-Trichloroethane (79-00-5)															
29V. Trichloroethylene (79-01-6)															
30V. Trichlorofluoromethane (75-69-4)															
31V. Vinyl Chloride (75-01-4)															
GC/MS FRACTION -- ACID COMPOUNDS															
A. 2-Chlorophenol (95-57-8)															
A. 2,4-Dichlorophenol (120-83-2)															
A. 2,4-Dimethylphenol (105-67-9)															
A. 4,6-Dinitro-O-resol (534-52-1)															
A. 2,4-Dinitrophenol (51-28-5)															
A. 2-Nitrophenol (88-75-5)															
A. 4-Nitrophenol (100-02-7)															
A. P-Chloro-M-resol (59-50-7)															
A. Pentachlorophenol (87-86-5)															
A. Phenol (108-95-2)															
A. 2,4,6-Trichlorophenol (88-06-2)															

CO JED I THE NT

1. POLLUTANT AND CAS NUMBER (if available)	2. MARK 'X'			3. EFFLUENT							4. UNITS		5. INTAKE (optional)		
	a. TESTING REQUIRED	b. BELIEVED PRESENT	c. BELIEVED ABSENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE (if available)		c. LONG TERM AVRG. VALUE (if available)		d. NO. OF ANALYSES	a. CONCENTRATION	b. MASS	a. LONG TERM AVERAGE VALUE		b. NO. OF ANALYSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
GC/MS FRACTION – BASE/NEUTRAL COMPOUNDS															
1B. Acenaphthene (83-32-9)															
2B. Acenaphtylene (208-96-8)															
3B. Anthracene (120-12-7)															
4B. Benzidine (92-87-5)															
5B. Benzo *(a)* Anthracene (56-55-3)															
6B. Benzo *(a)* Pyrene (50-32-8)															
7B. 3,4-Benzo-fluoranthene (205-99-2)															
8B. Benzo *(ghi)* Perylene (191-24-2)															
9B. Benzo *(k)* Fluoranthene (207-08-9)															
10B. Bis *(2-Chloro-ethoxy)* Methane (111-91-1)															
11B. Bis *(2-Chloro-ethyl)* Ether (111-44-4)															
12B. Bis *(2-Chloroiso-propyl)* Ether (102-60-1)															
13B. Bis *(2-Ethyl-hexyl)* Phthalate (117-81-7)															
14B. 4-Bromo-phenyl Phenyl Ether (101-55-3)															
15B. Butyl Benzyl Phthalate (85-68-7)															
16B. 2-Chloro-naphthalene (91-58-7)															
17B. 4-Chloro-phenyl Phenyl Ether (7005-72-3)															
18B. Chrysene (218-01-9)															
19B. Dibenzo *(a,h)* Anthracene (53-70-3)															
20B. 1,2-Dichloro-benzene (95-50-1)															
21B. 1,3-Dichloro-benzene (541-73-1)															

CONTINUED FROM PAGE V-6

TN0072362

1. POLLUTANT AND CAS NUMBER (if available)	2. MARK 'X'			3. EFFLUENT							4. UNITS		5. INTAKE (optional)		
	a. TESTING REQUIRED	b. BELIEVED PRESENT	c. BELIEVED ABSENT	a. MAXIMUM DAILY VALUE (1) CONCENTRATION	a. MAXIMUM DAILY VALUE (2) MASS	b. MAXIMUM 30 DAY VALUE (if available) (1) CONCENTRATION	b. MAXIMUM 30 DAY VALUE (if available) (2) MASS	c. LONG TERM AVRG. VALUE (if available) (1) CONCENTRATION	c. LONG TERM AVRG. VALUE (if available) (2) MASS	d. NO. OF ANALYSES	a. CONCENTRATION	b. MASS	a. LONG TERM AVERAGE VALUE (1) CONCENTRATION	a. LONG TERM AVERAGE VALUE (2) MASS	b. NO. OF ANALYSES
GC/MS FRACTION – BASE/NEUTRAL COMPOUNDS (continued)															
22B. 1,4-Dichlorobenzene (106-46-7)															
23B. 3,3'-Dichlorobenzidine (91-94-1)															
24B. Diethyl Phthalate (84-66-2)															
25B. Dimethyl Phthalate (131-11-3)															
26B. Di-N-Butyl Phthalate (84-74-2)															
27B. 2,4-Dinitrotoluene (121-14-2)															
28B. 2,6-Dinitrotoluene (606-20-2)															
29B. Di-N-Octyl Phthalate (117-84-0)															
30B. 1,2-Diphenylhydrazine *(as Azobenzene)* (122-66-7)															
31B. Fluoranthene (206-44-0)															
32B. Fluorene (86-73-7)															
33B. Hexachlorobenzene (118-74-1)															
34B. Hexachlorobutadiene (87-68-3)															
35B. Hexachlorocyclopentadiene (77-47-4)															
36B. Hexachloroethane (67-72-1)															
37B. Indeno *(1,2,3-cd)* Pyrene (193-39-5)															
38B. Isophorone (78-59-1)															
39B. Naphthalene (91-20-3)															
40B. Nitrobenzene (98-95-3)															
41B. N-Nitrosodimethylamine (62-75-9)															
42B. N-Nitrosodi-N-Propylamine (621-64-7)															

CONTINUED FROM THE FRONT

1. POLLUTANT AND CAS NUMBER (if available)	2. MARK 'X' a. TESTING REQUIRED	b. BELIEVED PRESENT	c. BELIEVED ABSENT	3. EFFLUENT a. MAXIMUM DAILY VALUE (1) CONCENTRATION	(2) MASS	b. MAXIMUM 30 DAY VALUE (if available) (1) CONCENTRATION	(2) MASS	c. LONG TERM AVRG. VALUE (if available) (1) CONCENTRATION	(2) MASS	d. NO. OF ANALYSES	4. UNITS a. CONCENTRATION	b. MASS	5. INTAKE (optional) a. LONG TERM AVERAGE VALUE (1) CONCENTRATION	(2) MASS	b. NO. OF ANALYSES
GC/MS FRACTION – BASE/NEUTRAL COMPOUNDS *(continued)*															
43B. N-Nitrosodiphenylamine (86-30-6)															
44B. Phenanthrene (85-01-8)															
45B. Pyrene (129-00-0)															
46B. 1,2,4 - Trichlorobenzene (120-82-1)															
GC/MS FRACTION – PESTICIDES															
1P. Aldrin (309-00-2)															
2P. α-BHC (319-84-6)															
3P. β-BHC (319-85-7)															
4P. γ-BHC 58-89-9)															
5P. δ-BHC 319-86-8)															
6P. Chlordane 57-74-9)															
7P. 4,4'-DDT 50-29-3)															
8P. 4,4'-DDE 72-55-9)															
9P. 4,4'-DDD 72-54-8)															
10P. Dieldrin 60-57-1)															
11P. α-Endosulfan 115-29-7)															
12P. β-Endosulfan 15-29-7)															
13P. Endosulfan ulfate 031-07-8)															
14P. Endrin 2-20-8)															
15P. Endrin dehyde 421-93-4)															
16P. Heptachlor 5-44-8)															

CONTINUE ON PAGE V-9

CONTINUED FROM PAGE V-8

EPA I.D. NUMBER (copy from item 1 of Form 1) | OUTFALL NUMBER

TN0072362

1. POLLUTANT AND CAS NUMBER (if available)	2. MARK 'X'			3. EFFLUENT							4. UNITS		5. INTAKE (optional)		
	a. TESTING REQUIRED	b. BELIEVED PRESENT	c. BELIEVED ABSENT	a. MAXIMUM DAILY VALUE (1) CONCENTRATION	a. MAXIMUM DAILY VALUE (2) MASS	b. MAXIMUM 30 DAY VALUE (if available) (1) CONCENTRATION	b. MAXIMUM 30 DAY VALUE (if available) (2) MASS	c. LONG TERM AVRG. VALUE (if available) (1) CONCENTRATION	c. LONG TERM AVRG. VALUE (if available) (2) MASS	d. NO. OF ANALYSES	a. CONCENTRATION	b. MASS	a. LONG TERM AVERAGE VALUE (1) CONCENTRATION	a. LONG TERM AVERAGE VALUE (2) MASS	b. NO. OF ANALYSES
GC/MS FRACTION – PESTICIDES (continued)															
17P. Heptachlor Epoxide (1024-57-3)															
18P. PCB-1242 (53469-21-9)															
19P. PCB-1254 (11097-69-1)															
20P. PCB-1221 (11104-28-2)															
21P. PCB-1232 (11141-16-5)															
22P. PCB-1248 (12672-29-6)															
23P. PCB-1260 (11096-82-5)															
24P. PCB-1016 (12674-11-2)															
25P. Toxaphene (8001-35-2)															

U.S. G.P.O.:1992-312-020:63176

DEPARTMENT OF ENVIRONMENT AND CONSERVATION
DIVISION OF WATER POLLUTION CONTROL

NPDES PERMIT APPLICATION ADDRESSES

All addresses must be completed even if the same address is used:

NPDES PERMIT NUMBER: TN0072362 MINERAL SPRINGS MINE

CORPORATE HEADQUARTERS (where permit should be sent):

CONTACT PERSON: Billy C. Hall (Name) (Title) TELEPHONE: (931) 528-0191

COMPANY NAME: Sand Products, LLC

STREET AND/OR P.O. BOX: P. O. Box 2369

CITY: Cookeville STATE: TN ZIP CODE: 38502

PERMIT BILLING ADDRESS (where invoices should be sent):

CONTACT PERSON: Billy C. Hall (Name) (Title) TELEPHONE: (931) 528-0191

FACILITY NAME: Sand Products, LLC

STREET AND/OR P.O. BOX: P. O. Box 2369

CITY: Cookeville STATE: TN ZIP CODE: 38502

FACILITY LOCATION (actual location of permit site):

CONTACT PERSON: Thad Drake (Name) (Title)

FACILITY NAME: Mineral Springs Mine NPDES# TN0072362

STREET AND/OR P.O. BOX: 4039 Hanging Limb Road

CITY: Monterey STATE: TN ZIP CODE: 38574

COUNTY: Overton TELEPHONE: (931) 839-7272

DMR MAILING ADDRESS (where preprinted Discharge Monitoring Reports should be sent):

CONTACT PERSON: Billy C. Hall (Name) (Title) TELEPHONE: (931) 528-0191

FACILITY NAME: Sand Products, LLC

STREET AND/OR P.O. BOX: P. O. Box 2369

CITY: Cookeville STATE: TN ZIP CODE: 38502

CN-1090

RDAs 2352 AND 2366

State of Tennessee
DEPARTMENT OF ENVIRONMENT AND CONSERVATION
DIVISION OF WATER POLLUTION CONTROL
MINING SECTION
2700 Middlebrook Pike, Suite 220
Knoxville, Tennessee 37921
(615) 594-6035

APPLICATION FOR PERMIT
WASTEWATER TREATMENT AND MANAGEMENT SYSTEMS

I. Applicant

In accordance with the provisions of Tennessee Code Annotated, Section 69-3-108 and Regulations promulgated therefrom, application is hereby made to conduct mining and related primary operations by:

A. Name

Sand Products, LLC
Company, Corporation, Individual, etc.

B. Mailing Address

P. O. Box or Street P.O. Box 2369

City Cookeville State TN Zip Code 38502

C. Company Official Billy C. Hall, President

D. Telephone No. 931 (Area Code) 528-0191

E. Type of Ownership: ( ) Individual ( ) Partnership
( ) Corporation (X) Other (Specify) LLC

F. Resource to be extracted and/or processed Sand

G. Type of Operation: ( ) Contour Mine (X) Area Mine
( ) Underground Mine ( ) Auger Mine ( ) Mountaintop Removal
( ) Loading Facility (X) Processing/Preparation Plant
( ) Quarry ( ) Other (Specify) _____

II. Location of Facility for which permit is requested:

A. County Overton

B. USGS Topographic Map Obey City (Name) 108 NW (Series)

C. Latitude 36° 09' 09" / 36° 09' 10" / 36° 09' 08"
Longitude 85° 12' 10" / 85° 12' 15" / 85° 12' 13"

D. Area or Site Number Mineral Springs Mine

E. SMCRA or State Surface Mining Permit No. N/A

F. Previous/Current Water Quality or NPDES Permit Numbers

TN0072362

G. Person to be contacted at facility:

Name Thad Drake Title Superintendent

Address 4039 Hanging Limb Road, Monterey, Tennessee 38574

Telephone No. 931 (Area Code) 839-7272

III. Desired length of permit:

( ) 1 year ( ) 2 years ( ) 3 years ( ) 4 years (X) 5 years

IV. Drainage or Discharges

Number:	001	002	003
Receiving Stream	Mineral Springs Branch	Mineral Springs Branch	Mineral Springs Branch

DISCHARGE OR DRAINAGE WILL (BE):

( ) pumped	(X) pumped	( ) pumped
(X) flow by gravity	( ) flow by gravity	(X) flow by gravity
( ) seep into ground	( ) seep into ground	( ) seep into ground
(X) convergent	(X) convergent	(X) convergent
( ) sheet flow	( ) sheet flow	( ) sheet flow
(X) intermittent	(X) intermittent	(X) intermittent
( ) continuous	( ) continuous	( ) continuous
Dependent upon:	Dependent upon:	Dependent upon:
(X) rainfall	(X) rainfall	(X) rainfall
( ) production rates	( ) production rates	( ) production rates
( ) groundwater flow	( ) groundwater flow	( ) groundwater flow
Affected by Previous Mining:	Affected by Previous Mining:	Affected by Previous Mining:
( ) yes	( ) yes	( ) yes
(X) no	(X) no	(X) no

(add additional sheets as necessary)

V. Number of acres within proposed permit area 347.29

Operation is (check all items that apply):

( ) previously permitted TN0072362 (Permit Number)

(X) existing facility ( ) virgin cut

( ) proposed facility ( ) reopened or 2nd cut

VI. Is the facility designed as a close-loop system?

( ) yes (X) no Name of nearest stream Mineral Springs Branch

Is there a possibility of overflow or discharge due to power failures, equipment failures, heavy rains, etc.? During heavy rains, power failures, equipment failure.

What measures are taken to prevent overflow? Adequate treatment prior to overflow contained by mine pit, sediment pond and earth berms.

VII. List the principle components of any extracted resource handling and processing systems located at the facility.

Conveyors, loaders, excavators, screen and wash operation.

VIII Describe the wastewater treatment system(s) to be utilized (sediment ponds, pH adjustment, etc.) Sediment pond and the mine pit shall be constructed which will be designed to treat storm water runoff from the site to within acceptable limits.

IX. Describe the Best Management Practices (BMP's) that will be utilized.

Draining areas into the lower portions of the mine pit to allow sedimentation. A sediment pit is located at the lower portion of the mine pit. The treated runoff will be discharged through a spillway. As mining progresses the treated runoff will be pumped out of the sediment pit. Other minor flows are treated by hay check dams. Revegetation of disturbed areas occur as soon as possible.

X. Sludge Disposal (including dredged sediments):

Frequency of disposal As required - See Exhibit No. 3 for data

Volume disposed 440 C.Y. per week in recycle pond not to enter sediment pond.

Characteristics of sludge (include contaminants and moisture content) Sand and silt

Approved ultimate disposal site on-site storage

XI. Please attach the following to your application:

A. An Engineering Plan developed in accordance with the requirements for preparation of the appropriate Supplementary Information Documents.

B. Any additional information which will help describe the proposed operation.

C. If facility or operation is closed-loop (circuit), a schematic drawing or diagram depicting flow of water, including pumpage rates (GPM), etc. must be attached.

I certify that I am familiar with the information contained in the application and that to the best of my knowledge and belief such information is true, complete, and accurate.

Billy E Hall
Signature of Applicant

18FEB16
Date Application Signed

Billy C. Hall
Printed Name of Person Signing

C E DESIGNERS, INC.
Engineer Preparing Plans

President
Title

(Must be signed by a Partner, Proprietor, or Executive Officer of at least Vice-President status. If a municipality, county, state, Federal, or other public facility, must be signed by either a principal executive officer or ranking elected official.)

GWM:pg NPDES #35
Revised 4/23/91

NARRATIVE

NPDES PERMIT APPLICATION

FOR

MINERAL SPRINGS MINE

SAND PRODUCTS, LLC

This application is written to renew an NPDES permit to discharge stormwater from surface drainage structures at this facility. The Mineral Springs Mine is located off Highway 164 east of Monterey, Tennessee. The site is south of State Highway 164 and north of Garrison Branch. The access road is on State Highway 164. This application will maintain the existing acreage under permit to total acres of 347.29.

This is a site not previously mined prior to the original permit issued in 1999. The site is operated to mine sand material. Sand is present on the site in commercial volumes and local markets are available.

The top two feet of the site consist of topsoil and an organic soil horizon. This material will be stripped and stored as overburden to be used as fill during reclamation of this site. An overburden layer of varying thickness is also present. Below the overburden is a layer of high grade sandstone which varies in thickness from 40 feet to 100 feet. The site will be operated to mine sand. This material will be excavated, processed, and transported as a graded sand material. The material will be sold as construction material or as specialty sand materials. Mined material is stored on the site during bad weather. Normally the mined material will be transported, screened, washed and graded for use in construction.

The only mineral to be extracted is sand. No fuel or chemicals are stored or used at this site except to operate the earth moving equipment or to operate processing equipment. The operation on this site consist of mining, screening, washing and transporting the sand. A thickener is used as an on site treatment to remove sediment with the assistance of a ploymer.

The mine operator also owns the land which contains the permitted area (affected area) of 347.29 acres. The area within the permit shall include the active mine areas, process equipment, storage areas, sediment control areas, future mining areas, and the access road.

A public water line exists along road frontages for all properties within a one-half (1/2) mile radius of the site. There is no known use of a non-public water source within the mine vicinity. No activity by the mine itself will affect the area's groundwater. Property lines within the drainage basin are also shown on the attached exhibit.

The permit area is divided by Mineral Springs Branch. Along Mineral Springs Branch are located two existing farm ponds used to water cattle. On the south side of the branch is located the mine pit. The mine pit and the spoil storage area are isolated by berms. Diversion ditches carry runoff from undistributed areas to nearby streams. Runoff from disturbed areas flows into the lower part of the mine pit where it is held. Mining and processing cannot take place during heavy storms. As the weather clears and mining in the area resumes, the treated runoff which does not percolate is pumped from the mine pit to Sediment Pond No. 3 as shown the Plans (Discharge 003).

During the life of the existing five year permit, no runoff was pumped. The contact surface in the mine pit was sufficient to allow all runoff to percolate into the ground.

North of Mineral Springs Branch is located the processing plant. The plant includes the sorter/classifier, sand conveyors, product storage areas, an office, scales and a scale house. Runoff is caught by interception ditches and a berm and is carried to the Sediment Pond No. 1. All available space has been leveled, paved and used for product storage.

Mined material is carried over Mineral Springs Branch to the sand sorter/classifier by an overhead conveyor. Where this conveyor crosses the branch, a stream crossing consisting of culverts and an embankment with a berm to catch spillage is constructed. Part of the haul road and bench below the conveyor loader drains to a stilling well and then is discharged through Discharge Point 002. This stilling well shall be enlarged to have surface dimensions of 20 feet by 35 feet.

The screen and sand classifier will use 1,500 gpm of water to sort the sand into different grades. The operation is set up to run 10 hours a day for 4 days a week. The total water volume needed is 900,000 gallons per day. Sediment Pond No. 1 is designed to hold 900,000 gallons of water and sediment storage and to settle out silt particles. Water is pumped from Sediment Pond No. 1 through the sand classified washing and sorting sand. Processed sand spills onto screw conveyors. Waste water which contains silt but also some usable sand product flows to a vortex separator. The vortex recovers any usable sand and dumps it on to the screw conveyors. Waste water from several

separate streams is collected, mixed with a ploymer, and sent to a thickener (clarifier). Following a settling process, a very clear liquid stream is released back into Sediment Pond No. 1. The entire manufacturing process has about a 25 percent loss in water. Technical data for the thickener is shown in Exhibit No. 3.

The thickened sludge with 64 percent solids is pumped to Sediment Pond No. 2. A clear settled liquid will be returned from Sediment Pond No. 2 to Sediment Pond No. 1. Sediment Pond No. 2 will be relocated to a mined out pit as shown on Exhibit No. 2. Revised hydraulics are also shown.

Water from Sediment Pond No. 2 plus from the thickener plus runoff normally is sufficient to supply process water. A well is nearby and in case of need makeup water can be pumped from Pond No. 4. Pond No. 4 and Pond No. 5 are outside the permit boundary. However, the close proximity requires these ponds be addressed. Each of the three discharge points discharge into Pond No. 4. In addition to the pump for makeup water, a pump is in place to pump water over the dam during droughts to guarantee a flow in the stream.

An emergency spillway has been constructed on Pond No. 1. Pond No. 1 serves as the sediment control structure for the runoff for the area north of the Mineral Springs Branch.

Pond No. 3 was initially constructed to provide make-up water should it be needed in the processing of the sand. However, the operator dug a second mine pit adjacent to this pond which caused it to be considered a sediment pond. Berms and an interception

ditch will carry any runoff from this disturbed area to the pond. A diversion ditch upslope of the disturbed area will carry any runoff from undisturbed areas away. The disturbed area is 2.07 acres. This pond will have the same spillway as Pond No. 1.

A 50' x 200' building to house a sand bagging operation and a truck repair shop has been constructed and is shown on the Plans south of the mine pit. A motor pool is also shown on the Plans near the truck repair shop.

Hydraulic calculations for the sediment ponds are shown following the narrative. Sediment Pond No. 1 is shown to be adequate to settle the runoff from the processing plant area. Settled water will leave the sediment pond through a spillway discharge as shown on the Plans (Discharge 001) to Mineral Springs Branch. Because of the method of operation, discharges from the site will be limited during a storm event.

The area designated on the exhibits as "Future Mining" shall not result in an additional discharge point. Any mining into this area will be via moving the highwall west and south. Stormwater will be diverted by berms (as is now the case) into the mine pit for treatment.

The hydraulic calculations for ditches and culverts constructed on this site are shown following the narrative.

Rock check dams (as detailed on the Plans) shall be installed upstream of each culvert and at other needed points to control sediment along the access road.

This application was done in order for the proposed facility to obtain an NPDES permit. An EPA Form 2D is being filed with this application for a virgin cut on a proposed site.

Except during rainfall events, there is normally little or no discharge from this mine, water quality (specifically pH and total suspended solids) will be checked by testing a grab sample from the water which flows from the discharge point (when a discharge occurs). The test results will be reported to the TDEC on a quarterly basis after the permit has been issued. The normal permitted limitation for pH is from 6.0 to 9.0 standard units. The frequency of testing and reporting will remain the same for the duration of this permit and as required by the permit, or as otherwise directed by the Tennessee Department of Environment and Conservation.

The operator will be required to use certain techniques common of construction which are intended to reduce the amount of silt which enters the waterways. These techniques include:

(1) Mining will be from the downstream point and will proceed upstream. Mined areas will be protected by berms;

(2) Construction of diversion and interception ditches which carry all silt ladened waters to the sedimentation pond;

(3) Use of hay bale barriers which filter the silt ladened waters; and

(4) Immediate and proper seeding of disturbed areas to allow revegetation at the soonest possible time.

Upon completion of all mining operations in the mine or portions of the mine, the surface grading of the area will be somewhat different from the original contours. The bottom of the mine pits and the sediment ponds will remain after reclamation as farm ponds. The walls of the area to be reclaimed shall be graded to no steeper than a 3 to 1 slope. Stockpiled topsoil will be spread over the area to be reclaimed. The completed and regraded area will be grassed and may be used as pasture. All disturbed areas shall be left smooth and thickly sown with a mixture of White Clover, Lespedeza, Italian Rye Grass, Kentucky Fescue #31 as shown in the Table as follows:

Season	Seed	Application Rate (Pounds per Acre)
Spring (March 15 - May 15)	A mixture of Sericia Lespedeza and	30
	Kentucky 31 Fescue	30
Summer (May 15 - June 1)	A mixture of Bermuda Grass and Korean	40
	Lespedeza	10
Fall (August 15 - October 15)	A mixture of Kentucky 31 Fescue and	60
	White Clover	15
Winter Temporary (October 15 - December 1)	A mixture of Annual Ryegrass and	80
	White Clover	10

When the final grading has been completed, the entire area to be seeded shall be fertilized with ammonium nitrate at the rate of 12 lbs. per 1000 square feet. Lime shall be

applied at a rate of 140 lbs. per 1000 square feet. The application rate for both fertilizer and lime shall be confirmed or revised based on soil tests at the time of reclamation. After the fertilizer and lime has been distributed, the operator shall rake or harrow the ground to thoroughly work the fertilizer into the soil. The seed shall then be sowed in two (2) operations broadcast either by hand or by approved sowing equipment. After the seed has been distributed, the operator shall then lightly cover the seed by use of a drag or other approved device. All seed shall be certified not more than three (3) percent weed. The seeded area shall then be covered with straw at the rate of 1-1/2 tons per acre. Seeding shall be performed in each area as that area is completed.

According to the standard practices seeding (as opposed to sodding) is permissible up to a slope of 33%. The maximum slope to be finished and seeded is 33%.

Oak or pine seedlings may also be planted in the reclaimed area which will mature later than the grass cover.

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HYDRAULIC DESIGN CALCULATIONS

HYDRAULIC DESIGN CALCULATIONS

1. Culvert Calculations

a. Access Road Entrance

The natural drainage way is crossed by an access road which has culverts located at one point to allow runoff to pass while keeping the road in good condition. There are three culverts located near the entrance to allow drainage from this 92 acre drainage area to be passed.

Rational Method (Q = icA)

Tc = 25 min

Design Storm = 10 years

i = 3.4"/hr

c = 0.3

A = 92 Ac

Q = 3.4" (0.3) (92) = 93.84 c.f.s.

By using the attached nomograph it is shown that three 30-inch culverts will carry 93.84 c.f.s. of runoff. The maximum headwater depth is 39 inches or 3.25 feet. These calculations were confirmed using the Tennessee Department of Transportation U.S.G.S. Method.

b. Ditch Crossings

A standard ditch intercepts runoff from the disturbed area around the processing plant and crosses the access road at two locations. A single culvert is required at each location.

Rational Method (Q = icA)

Tc = ⟨5 min

Design Storm = 10 years

i = 6.14"/hr

c = 0.3

A = 3.5 Ac

Q = 6.14" (0.3) (3.5) = 6.45 c.f.s.

By using the attached nomograph it is shown that a 21-inch culvert will carry 6.45 c.f.s. of runoff flowing full.

2. Sedimentation Pond No. 1 Calculations

Sedimentation pond calculations are shown in the following Table.

Design Storm	4.8" (10 yr. - 24 hr.)
Area Drained	14.00 Acres
Curve Number	86
Runoff	3.96 Acre-ft. 172,300 cubic feet
Sediment Storage	57,700 cubic feet
Pond Volume	230,000 cubic feet
Surface Area	25,600 square feet (0.59 Acres)
Pond Depth (Avg.)	9 feet

Actual Pond Volume shows the effect of volume lost as a result of side slopes and does include sediment storage volume which is in addition to runoff storage.

Surface area is checked by Stoke's Law which gives a settling velocity of 0.00016 ft/sec for a 0.008mm silt particle. Calculations are shown as follows:

$$\frac{\text{172,300 cubic feet/day}}{\text{86,400 sec/day}} = 1.994 \text{ c.f.s.}$$

$$\frac{\text{1.994 c.f.s.}}{\text{25,600 square feet}} = 0.000078 \text{ ft/sec}$$

Which is less than the 0.00016 ft/sec. Therefore the surface area is sufficient. This allows volume in this sediment pond for the recirculation of clean process water.

3. Sedimentation Pond No. 2 Calculations

Sedimentation pond calculations are shown in the following Table.

Design Storm	4.8" (10 yr. - 24 hr.)
Area Drained	2.00 Acres
Curve Number	86
Runoff	0.57 Acre-ft. 24,778 cubic feet
Sediment Storage	5,222 cubic feet
Pond Volume(Req'd)	30,000 cubic feet
Pond Volume (Act)	3,937,500 cubic feet
Surface Area	87,500 square feet (2.00 Acres)
Pond Depth (Avg.)	40 feet

Actual Pond Volume shows the effect of volume lost as a result of side slopes and does include sediment storage volume which is in addition to runoff storage.

Surface area is checked by Stoke's Law which gives a settling velocity of 0.00016 ft/sec for a 0.008mm silt particle. Calculations are shown as follows:

$$\frac{\text{24,778 cubic feet/day}}{\text{86,400 sec/day}} = \text{0.287 c.f.s.}$$

$$\frac{\text{0.287 c.f.s.}}{\text{87,500 square feet}} = \text{0.000003 ft/sec}$$

Which is less than the 0.00016 ft/sec. Therefore the surface area is sufficient. Excess volume is for sludge storage from sediment pumped from thickener.

4. Sedimentation Pond No. 3 Calculations

Sedimentation pond calculations are shown in the following Table.

Design Storm	4.8" (10 yr. - 24 hr.)
Area Drained	2.07 Acres
Curve Number	86
Runoff	0.57 Acre-ft. 24,778 cubic feet
Sediment Storage	5,222 cubic feet
Pond Volume (Req'd)	30,000 cubic feet
Pond Volume (Act)	1,960,020 cubic feet
Surface Area	130,680 square feet (3.00 Acres)
Pond Depth (Avg.)	15 feet

Actual Pond Volume shows the effect of volume lost as a result of side slopes and does include sediment storage volume which is in addition to runoff storage.

Surface area is checked by Stoke's Law which gives a settling velocity of 0.00016 ft/sec for a 0.008mm silt particle. Calculations are shown as follows:

$$\frac{\text{24,778 cubic feet/day}}{\text{86,400 sec/day}} = \text{0.287 c.f.s.}$$

$$\frac{\text{0.287 c.f.s.}}{\text{130,680 square feet}} = \text{0.000002 ft/sec}$$

Which is less than the 0.00016 ft/sec. Therefore the surface area is sufficient.

5. Mine Pit

Runoff calculations for the mine pit are shown in the following Table.

Design Storm	4.8" (10 yr. - 24 hr.)
Area Drained	30.00 Acres
Curve Number	86
Runoff	8.25 Acre-ft. 360,000 cubic feet
Sediment Storage	40,000 cubic feet
Pond Volume (Req'd)	400,000 cubic feet
Surface Area	40,000 square feet (0.92 Acres)
Pond Depth (Avg.)	10 feet

Actual Pond Volume includes runoff that accumulates at the bottom of the mine pit and sediment storage. Surface area is checked by Stoke's Law which gives a settling velocity of 0.00016 ft/sec for a 0.008mm silt particle. Calculations are shown as follows:

$$\frac{360{,}000 \text{ cubic feet/day}}{86{,}400 \text{ sec/day}} = 4.17 \text{ c.f.s.}$$

$$\frac{4.17 \text{ c.f.s.}}{40{,}000 \text{ square feet}} = 0.000104 \text{ ft/sec}$$

Which is less than the 0.00016 ft/sec. Therefore the surface area is sufficient.

Runoff is mainly from rainfall falling within the mine pit. Under normal conditions, runoff will percolate into the soil horizons. That which does not is pumped to the adjacent sediment pond.

6. Spillway Calculations*

For a drainage area this small the Rational Formula was thought to be more appropriate for sizing spillways than any other method. The spillway will be constructed to satisfy the following:

Design Storm	5.6" (25 yr. - 24 hr.)
Area Drained	14.00 Acres
c	0.40
i	6.4"/hr
Runoff (instantaneous) Q=cia	35.84 c.f.s.

Using Manning's Equation:

$$Q = \frac{1.49}{n} AR^{.67} S^{.5}$$

N = 0.035 and S = 0.01

By assuming a 10 foot channel with 1/1 side slopes a solution is found by trial and error which yields a flow of 42.24 c.f.s. at a depth of flow of 1.00 foot.

A = 8.00 and R = 0.814

$$Q = \frac{1.49}{0.035} (11.00) (0.857)^{.67} (0.01)^{.5} = 42.24 \text{ c.f.s.}$$

The spillway channel shall be no less than 2.0 feet deep. The spillway cross-section shall be extended to the stream. This is shown on the Plans.

*This spillway is designed for the largest flow from drainage area (Pond No. 1). For simplicity of construction, the same spillway will be used for each pond.

7. Haul Road Ditch Calculations

The runoff from the existing haul and conveyor ramp road will discharge through a small stormwater discharge point. This flow passes through a small pond which functions as a stilling well.

Discharge Point 002

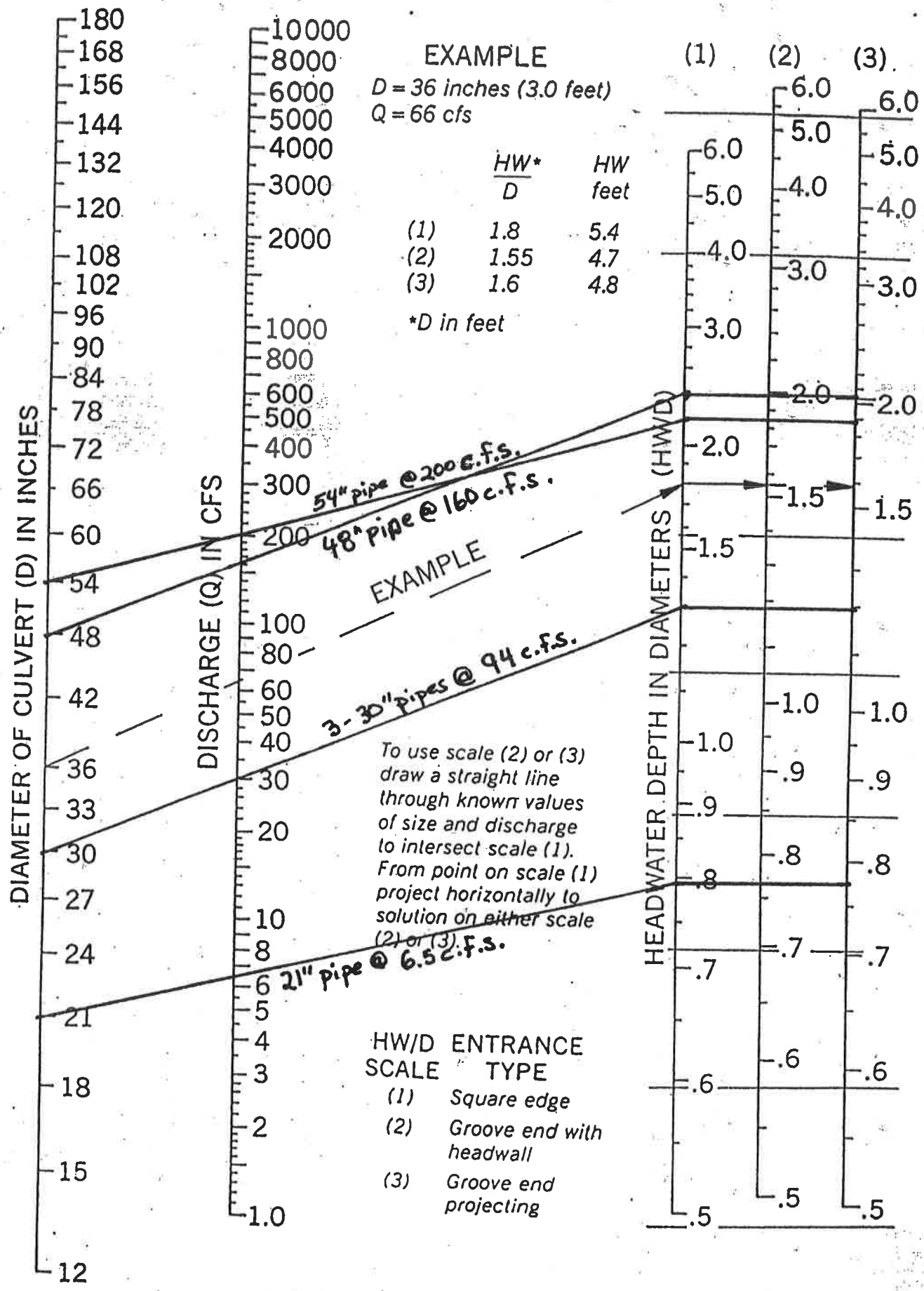
Design Storm	5.25" (10 yr. - 24 hr.)
Area Drained	0.80 Acres
c	0.50
i	6.2"/hr
Runoff (instantaneous) Q=cia	2.48 c.f.s.

The proposed discharge point is shown on the exhibit and is adequate following the construction of a stilling well. Due to velocity, all approach ditches should be rock lined.

8. Mineral Springs Branch Crossing

The operator will construct a crossing of the Mineral Springs Branch to catch any spillage from the conveyor which crosses the branch. By trial and error, a 48-inch culvert with a 54-inch culvert laid in parallel were found to be sufficient to carry the runoff from the design storm from the 319 acre basin draining to this point.

Using the Tennessee Department of Transportation U.S.G.S. Method, it is shown that 360 c.f.s. is the runoff from the design storm from the natural drainage way of 319 acres. By using the attached nomograph it is shown that these two culverts will carry 360 c.f.s. at a headwater depth of 10 feet.



BUREAU OF PUBLIC ROADS JAN. 1963

HEADWATER SCALES 2&3
REVISED MAY 1964

Antidegradation Guidance

To Be Used When Administering Tennessee's Antidegradation Statement as Associated with Obtaining a National Pollutant Discharge Elimination System (NPDES) Permit or an Individual Aquatic Alteration Permit (ARAP)

This document is intended to provide guidance for satisfying *Tennessee's Antidegradation Statement Rule 1200-4-3-.06* as it pertains to completing the application requirements for a NPDES or an ARAP permit.

As stated in *Tennessee's Antidegradation Statement Rule 1200-4-3-.06*, an applicant may choose to substitute equivalent information for the EPA Antidegradation forms. This document is intended to serve as that equivalent information. However, if preferred, the applicant may choose to use the EPA Worksheets listed below.

Parts 1 – 3 of this form are to be completed when performing an alternative analysis with reference to the social and economic considerations and environmental consequences for each alternative. Parts 1 - 3 serve as equivalent information to EPA Worksheets A and G (A and B for the public sector).

If the receiving water is an Exceptional Tennessee Water, and the proposed discharge will cause degradation, then the applicant must provide more detailed and comprehensive information to show that the proposed degradation is justified economically and socially. As part of this process, the applicant is to complete the entire Antidegradation Guidance Form (Parts 1 – 5). This information is to serve as equivalent information for EPA Worksheets A, G, O, R, V, W, X, Y, Z, and AB (O, P, Q, S, T, U, and AA for the public sector).

Part 1. Contact Information	
1. Company name:	Sand Products, L.L.C.
2. NPDES No.: TN00	TN0072362
3. Facility or mine name:	Mineral Springs Mine
4. County:	Overton
5. Name of contact person:	Billy C. Hall
6. Facility or mine address:	4039 Hanging Limb Road
7. City:	Monterey
8. State:	Tennessee
9. Zip:	38574

Part 2. Mine and Stream Information

1. Please Select the type of mine.

[X] Noncoal [ ] Coal

[ ] Limestone [ ] Shale

[X] Sand and Gravel [ ] Dimension Stone

[ ] Industrial Sand [ ] Zinc

[ ] Ball Clay

2. Check which type of permit activity is requested by applicant.

_____ Renewal of permit based on currently approved plans
__X__ Renewal and modification of permit
_____ Modification of permit
_____ New permit
_____ Termination of permit
_____ Individual Aquatic Resource Alteration Permit

3. Please list each outfall number, the name of receiving stream(s) and the corresponding stream designation (either Outstanding National Resource Water (ONRW), Exceptional Tennessee Water (ETW), or Non Exceptional Tennessee Water (Non ETW). Use separate paper if necessary.

Outfall(s)	Receiving Stream(s)	Stream Designation		
		ONRW	ETW	NON ETW
001	Mineral Springs Branch			X
002	Mineral Springs Branch			X
003	Mineral Springs Branch			X

Part 3. Alternatives Analysis

The following are examples of alternatives relative to natural resource extraction that are to be considered by applicants under Tennessee's *Antidegradation Statement 1200-4-3-.06 (3)(a)*. Please indicate if you have considered this option and implemented it at your facility. Discuss the social and economic considerations and environmental consequences of each alternative considered and/or implemented. Describe any other alternative options as they apply to your facility. Attach additional pages if necessary to fully characterize the alternatives analysis at the facility.

1. Indicate which alternative process or treatment options are currently used at the facility and state the reasons others were not considered feasible. Include the social and economic considerations and environmental consequences for each alternative.
• Connection to existing treatment system.
None exists within reasonable distance.
• Construction of oversized ponds to receive wastewater.
Considered but eliminated due to excessive cost.
Design capacity of the pollution control system = 1.99 cfs
Current excess capacity = 23%
Expected excess capacity after completion of project = 23%
Description: Sediment Pond

Parts 4 and 5 are to be completed by the applicant if the receiving water is an Exceptional Tennessee Water, as per Tennessee's *Antidegradation Statement 1200-4-3-.06 (4)(c) and (d).* In this case, the applicant must provide the Division with additional detailed and comprehensive information, as well as public notice, and public participation. These additional requirements are detailed in the "Antidegradation Guidance" instructional section that is found on page 8 of this document.

Part 4. Economic Justification

The following section shows economic/financial information for the facility. This information is necessary to determine if the applicant can afford to implement appropriate pollution control measures to protect water quality in the receiving water. Attach additional pages if needed.

1. Annual cost of operation and maintenance of pollution control project (including but not limited to monitoring, inspection, permitting fees, waste disposal charges, repair, administration, and replacement).	$
2. Annual earnings without pollution control project costs	$
3. Annual earnings with pollution control project costs	$

Part 5. Social Justification

The following section shows social justification of the proposed degradation within the community where the facility is located. Attach additional pages if needed.

1. Define the affected community in this case; what areas are included.	
2. Current unemployment rate in affected community (if available).	
3. Current national unemployment rate.	
4. Additional number of persons expected to collect unemployment in affected community due to compliance with water quality standards.	

5. Expected unemployment rate in the affected community after compliance with water quality standards (Current number of persons collecting unemployment in affected community + (4)/labor force in affected community.	
6. Number of jobs facility provides in the affected community.	
7. Average salary of these jobs.	$
8. Median household income in affected community.	$
9. Total number of households in affected community.	
10. Current total tax revenues in the affected community.	$
11. Tax revenues paid by the private entity to the affected community.	$

How to use the Antidegradation Guidance document

The Antidegradation Guidance document is to be used in accordance with the State of Tennessee's Antidegradation Statement. It may be used in lieu of the EPA Worksheets. Specifically the document is divided into five parts. Parts 1 -2 are general information regarding the facility. Part 3 details the alternatives analysis (including social, economic, and environmental considerations of each alternative). Parts 4 – 5 detail the social and economic justification required to demonstrate that the degradation associated with the proposed discharge is justified. Please review this form. The following explanation should help explain this process.

- If you are **renewing a permit with no changes that discharges to Exceptional Tennessee Waters (ETW)**, you need to complete the alternatives analysis requirement. However, you do not have to complete the social and economic justification requirements or go through the public meeting process. So, you would fill out Part 1 through 3 of the Antidegradation Guidance document.

- If you are **applying for a new or expanded permit that discharges to Exceptional Tennessee Waters (ETW),** you need to complete all parts (Parts 1 - 5) of the Antidegradation Guidance document. This would also trigger the public meeting and posting process. The information requirements for these types of applications are as follows:

1. *Complete and submit the Draft Guidance document or the EPA worksheets. These documents will describe the social and economic justification for the proposed degradation, including the alternatives analysis that was considered in the proposal.*

2. *Show that the discharge will not interfere with the classified uses of the receiving stream. The criteria for these uses are also contained in Chapter 1200-4-3 of the Rules.*

3. *Publish a newspaper ad with the following information: identify the proposed discharge, provide the specific location, including affected waters, describe the general basis for your request to degrade Exceptional Tennessee Waters, inform the public of the opportunity to comment, announce a forthcoming public meeting in the local area, (to be held by the Division at least 45 days after the announcement), provide Division contact information for comments or hearing location and date. Comments and questions should be addressed to:*

   Gary W. Mullins
   NPDES Permitting Supervisor
   Division of Water Pollution Control
   3711 Middlebrook Pike
   Knoxville, TN 37921-6538
   (865) 594-5536
   Gary.Mullins@state.tn.us

4. *Post a sign near the site with the same information as in the newspaper ad. The sign must be legible from the nearest public road. An example sign is attached for your reference.*

5. *Proof of the sign posting and a copy of the newspaper ad must be submitted to the Division. Once the information requested above is received, the Division will schedule a public meeting about your proposed degradation. Announcement of this meeting will be placed on public notice for a minimum of 45 days. The meeting will not be scheduled until your information is received. After the meeting is a 10 day comment period. After this period, we consider comments and issue a Notice of Determination that the degradation is either justified or not justified. If justified, the Draft permit is issued and the normal permit process follows. If not justified, the permit is denied and the applicant may appeal.*

- If you are **renewing a permit with no changes that discharges to Non Exceptional Tennessee Waters (NETW)**, you do not need to complete this form. However, it's a good idea to complete Parts 1 through 3 and have them in the file.

- If you are **applying for a new or expanded permit that discharges to Non Exceptional Tennessee Waters (NETW),** you need to complete the alternatives analysis requirement. However, you do not have to complete the social and economic justification section or go through the public meeting process. So, you would fill out Part 1 through 3 of the Antidegradation Guidance document.

EXHIBITS

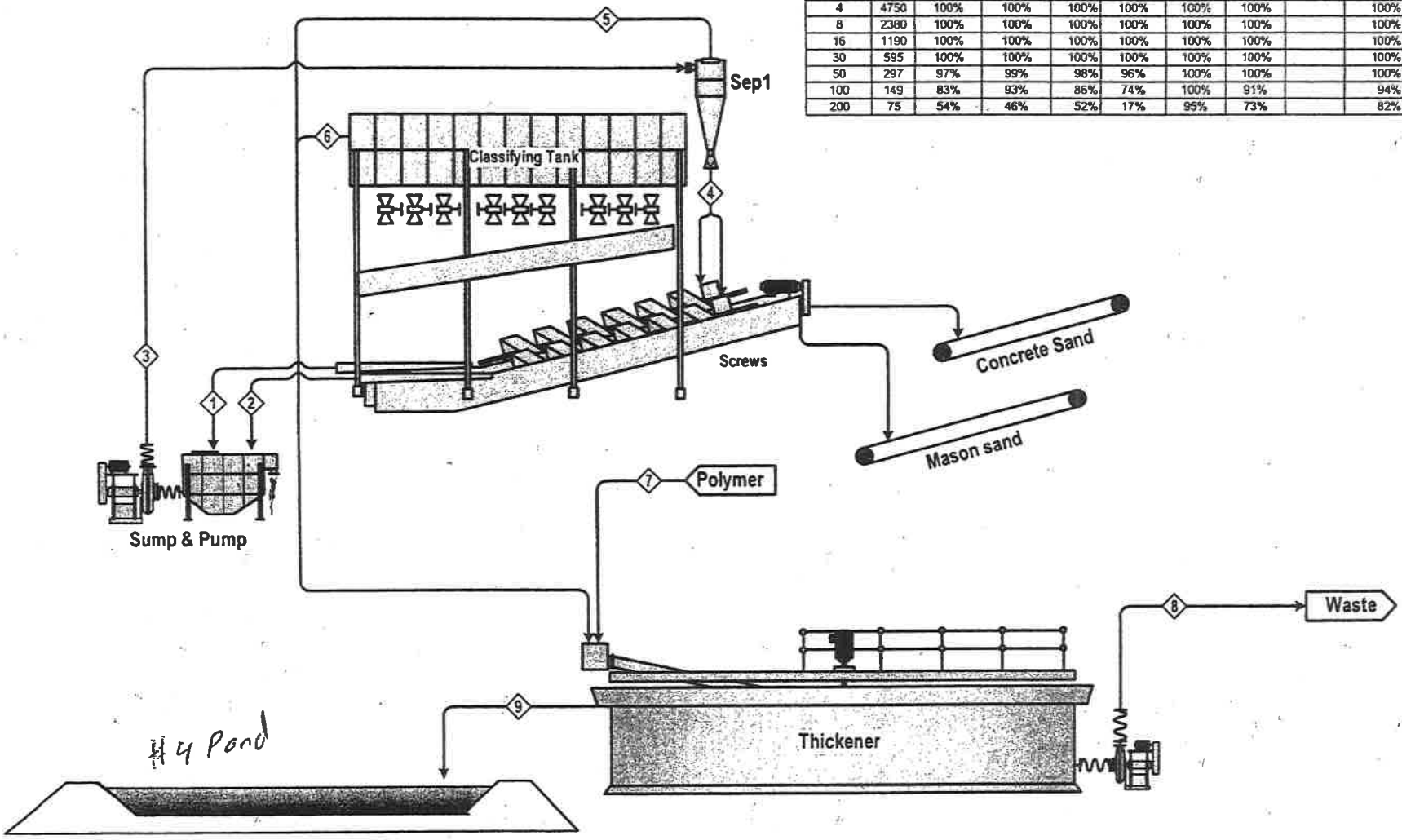
EXHIBIT NO. 3

THICKENER DATA

Stream N°		1	2	3	4	5	6	7	8	9
Title		Concrete Screw O/F	Mason Screw O/F	Cyc Feed	Cyc U/flow	Cyc O/flow	Classifier Tank O/F	Polymer & Water	Thickener U/Flow	Thickener O/Flow
Solids	STPH	9.4	4.1	13.5	7.5	6.0	9.6	0.0	15.6	0
Water	USGM	848	305	1,153	17	1,136	1386	50	94	2,478
Slurry	USGM	862	311	1,173	28	1,145	1400	50	117	2,478
% solids	w/w	4.2%	5.2%	4.5%	64%	2.1%	2.7%	0.0%	40%	0.0%
slurry SG		1.027	1.034	1.029	1.683	1.013	1.017	1.000	1.337	1.000

Cumm % Pass

mesh	µm									
4	4750	100%	100%	100%	100%	100%	100%		100%	
8	2380	100%	100%	100%	100%	100%	100%		100%	
16	1190	100%	100%	100%	100%	100%	100%		100%	
30	595	100%	100%	100%	100%	100%	100%		100%	
50	297	97%	99%	98%	96%	100%	100%		100%	
100	149	83%	93%	86%	74%	100%	91%		94%	
200	75	54%	46%	52%	17%	95%	73%		82%	



McLanahan CORPORATION
Aggregate Processing Division

Client
Project
Flow Schematic

Filename q2130-pi rev 0.vsd
page-1

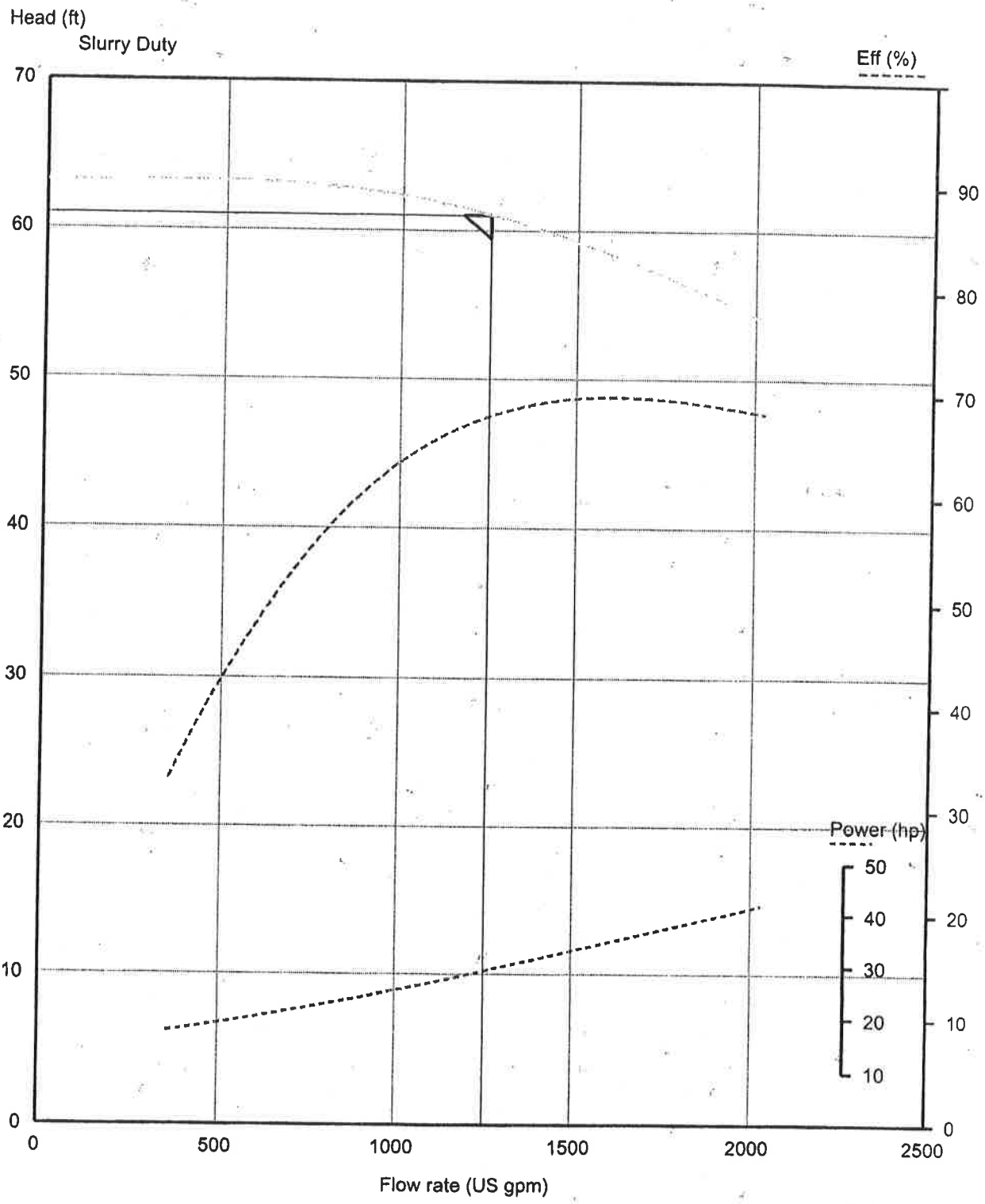
Drawn : PAUL ILOTT	Date 01-Nov-07		REV	0
Checked	Scale : NOT TO SCALE			

McLanahan CORPORATION

LP III r 200/150				770 RPM	
Flow	1250 US gpm	Power Abs	29.27 hp	Stages	1
Head	61.01 ft	Efficiency	67.79 %	Max Spd	1200 RPM
SG	1.029	BEP Effic.	69.6 %	Qbep	78 %
d50	0.1 in.	Tip Speed	17.42 m/s	Head Corr	0.995
NPSHr	3.196 ft	Imp Diam	17.01 in.	Eff Corr	0.995

Date / /

Ref Q2130 SEP



Pump Selection Technical Report
Quote Ref No : Q2130 SEP Date : / /

Project Name Sand Prod
Customer
Address

Pipe Module Technical Report Code : Q2130 SEP

Flow Rate	1250.00 US gpm
Suction height	0.00 ft
Discharge height	30.00 ft
Discharge pressure	25.00 ft

Pipe Section	Discharge pipe
Pipes in Parallel	1
Pipe Length	50.0 ft
Nominal Diameter	6.0 in
Inside Diameter	6.1 in
Pipe Material	STEEL
Hazen factor	130
Pipe Fittings	1
	1 SUDDEN REDUCTION
Reynold's No	651199
Velocity	13.85 ft/s
Settling Vel	6.39 ft/s
Friction Loss	
Fittings	0.7 ft
Pipe	5.3 ft
Total	6.0 ft

NPSHa	30.92 ft
Static head	55.00 ft
Friction head	6.01 ft
Total head	61.01 ft

Speed Head 61.3 ft

SG Solid	2.700	Solids Flow	14.10 Tons/hr
SG Liquid	1.000	% Solid Wt	4.5 %
SG Slurry	1.029	% Solid Vol	1.7 %
Head Ratio	0.99	D50 Size	0.1000 mm
Eff Ratio	1.00	Max Size	0.0600 in.

No of pumps 1

Pump Model	200/150	Supplier	McLanahan
Flow rate	1250.0 US gpm	Power Abs	29.26 hp
Head	61.0 ft	Power Req	33.65 hp
Pump speed	770 RPM	Motor size	40.20 hp
NPSHr	3.2 ft	Efficiency	67.8 %
Impeller D	17.008 in.	BEP	69.7 %

Pump Selection Technical Report
Quote Ref No : Q2130 THK Date : / /

Project Name Sand Prod
Customer
Address

Pipe Module Technical Report Code : Q2130 THK

Flow Rate	114.72 US gpm
Suction height	0.00 ft
Discharge height	0.00 ft
Discharge pressure	0.00 ft

Pipe Section	Discharge pipe
Pipes in Parallel	1
Pipe Length	2000.0 ft
Nominal Diameter	4.0 in
Inside Diameter	3.7 in
Pipe Material	HDPE OLD
Hazen factor	130
Pipe Fittings	1
	1 SUDDEN REDUCTION
Reynold's No	98579
Velocity	3.46 ft/s
Settling Vel	4.52 ft/s
Friction Loss	
Fittings	0.1 ft
Pipe	29.2 ft
Total	29.3 ft

NPSHa	30.92 ft
Static head	0.00 ft
Friction head	29.29 ft
Total head	29.29 ft

Speed Head 36.6 ft

SG Solid	2.700	Solids Flow	15.60 Tons/hr
SG Liquid	1.000	% Solid Wt	40.0 %
SG Slurry	1.337	% Solid Vol	19.8 %
Head Ratio	0.80	D50 Size	0.0500 mm
Eff Ratio	0.75	Max Size	0.0300 in.

No of pumps 1

Pump Model	80/80	Supplier	McLanahan
Flow rate	114.7 US gpm	Power Abs	3.49 hp
Head	29.3 ft	Power Req	4.01 hp
Pump speed	1041 RPM	Motor size	15 hp
NPSHr	3.0 ft	Efficiency	32.6 %
Impeller D	10.000 in.	BEP	40.7 %

200 Wall Street,
Hollidaysburg
PA 16648 USA
Tel: 814-695-9807
Fax: 814-695-6684

McLanahan CORPORATION
AGGREGATE PROCESSING DIVISION

585 Airport Road
Gallatin
TN 37066 USA
Tel: 615-451-4440
Fax: 615-451-4461

QUOTATION

To:	**Sand Products** **Monterey, TN**	Quotation N°	**Q1630errev0**
		Date:	**02/09/06**
Attn.:	**Thad Drake**	Tel.:	
Subject:	**LPT Fine Sand Recovery System**	Fax.:	

MCLANAHAN CORP AGGREGATE PROCESSING DIVISION. offers to furnish, sell & deliver to Buyer the materials and/or equipment described below in accordance with the terms and conditions enclosed herein.

1 DESIGN CRITERIA

Solids Flowrate:	13.5 STPH
Slurry Flowrate:	1173 USGPM
Specific Gravity of Solids:	2.7
Solids Concentration:	4.45%
Objective:	Recover +200 mesh solids

Feed Gradation

mesh	%pass
16	100
20	100
30	99.9
40	99.2
50	97.5
70	95.4
100	85.6
140	65.4
200	51.5
270	42.7
325	38.9
400	36.5

Note: It is the customer's responsibility to satisfy themselves that the information shown in the table above is representative of the plant conditions and thus is representative of the feed that is to be processed.

The performance data provided is simulated based on feed stream information provided by the customer. Should the feed solids and/or liquid flowrates, or the gradation differ significantly, this design and the quotation derived from it may become invalid.