Earthres Group, Inc. toll free 800-264-4553

www.earthres.com



HEADQUARTERS / PHILADELPHIA REGION

P. O. Box 468, Pipersville, PA 18947 phone 215-766-1211

APPALACHIAN REGIONAL OFFICE

P. O. Box 794, Morgantown, WV 26505 phone 304-212-6866

September 25, 2019

Gary Latsha
District Mining Manager
Bureau of District Mining Operations
PA Department of Environmental Protection
5 West Laurel Boulevard
Pottsville, PA 17901-2454

SUBJECT: Hanson Aggregates Pennsylvania – Rock Hill Quarry

Permit Update - E&S Plan Certification

SMP No. 7974SM1

East Rockhill Township, Bucks County

Earthres Project No. 061003.052

Dear Mr. Latsha:

On behalf of Hanson Aggregates Pennsylvania, LLC (Hanson), Earthres Group, Inc. (EARTHRES) is hereby submitting a Pond Certification Report for the improvements associated with Sediment Trap 1 at the Rock Hill Quarry. The following items have been included for your review:

- Sediment Trap 1 Pond Certification;
- Supplemental As-Built Calculations;
- Photo Log; and
- As-Built Site Plan.

If you have any questions or require additional information, please contact us at (215) 766-1211.

Sincerely,

Earthres Group, Inc.

Michael D. Fling, P.E. Senior Project Manager

Enclosures: As

As stated

Cc: Andrew Gutshall, Hanson

Curt Mitchell, R.E. Pierson

Marianne Morano, East Rockhill Township

POND CERTIFICATION



Commonwealth of Pennsylvania
Department of Environmental Protection
Bureau of Mining Programs

U.S.G.S. Quadrangle: QUAKERTOWN

POND CERTIFICATION

Permittee	HANSON AGGREGATES PENNSYLVANIA LLC				
Permit No.	Permit No. SMP NO. 7974SM1				
Pond	SEDIMENT TRAP 1				
Township	EAST ROCKHILL TOWNSHIP				
County	BUCKS COUNTY				
Engineer/Land Surveyor MICHAEL D. FLING, P.E.					
Date	8/23/2019				

Longitude75° 18' 0.48" or

Instructions: Complete first page and submit with permit application. Use both pages to certify completed impoundment.

Sedimentation ponds and other impoundments must be constructed in accordance with the approved permit before any disturbance of the area to be drained into the pond. Impoundment requiring a Chapter 105 permit or is equal to or greater than 20 acre-feet storage capacity must be inspected during construction under the supervision of, and certified to the Department upon completion of construction by a registered professional engineer. If impoundment does not require a Chapter 105 permit or is less than 20 acre-feet storage capacity, it must be inspected during construction, and certified by a registered professional engineer or a registered professional land surveyor.

Any enlargement, reduction in size, reconstruction, or other modification, that may affect the stability or operation must be approved by the Department. Pond must be certified and approved prior to the start of any other mining activities.

Unless otherwise specified in your permit, use this form for the sedimentation pond and other impoundment certification. Submit 1 original and 2 copies to the appropriate District Mining Office. All information must be provided, otherwise it will be returned for completion.

Location (point of discharge): Latitude 40° 24' 2.78" :

Location from Bo HYDROLOGY: D Land Use MINING	Drainage Area <u>4.28 ACRES</u> acres Design Storm N/		
Embankment	Top Width (Minimum) Outside Slope (Maximum) (_H: _ V) Inside Slope (Maximum) Top Elevation Bottom Elevation/Dewatering Elevation Upstream Toe Elevation Downstream Toe Elevation Type of Cover Incised Slope (if any) Inside Slope (Maximum) (_H: _V) Top Elevation Bottom Elevation	Permit Application 5' 2:1 2:1 546' MSL 540' MSL / 542' MSL N/A N/A RIPRAP/VEGETATION N/A N/A N/A N/A N/A N/A	As Constructed 5' 2:1 2:1 546.42' MSL 539.15' MSL/ 542.00' MSL N/A N/A RIPRAP/VEGETATION N/A N/A N/A N/A N/A N/A
Principal Spillway	Type Conduit Diameter (if barrel/riser give both) Inlet Elevation (Crest) Outlet Protection Spillway Capacity Max	BROAD CRESTED WEIR N/A 545.00' MSL Filter Fabric / AASHTO #57/ R-3/ Compost 90.00 CFS	BROAD CRESTED WEIR N/A 544.82' MSL Filter Fabric /AASHTO #57/R-3/ Compost 146.13 CFS
Dewatering Device	Type/Size Inlet Elevation Discharge Regulation (ie., self draining or valved) Discharge Capacity (cubic feet/second) Time to Dewater Full Pond	N/A N/A N/A N/A N/A	N/A N/A N/A N/A
Emergency Spillway	Type Width Depth (with 2 feet of freeboard) Length Sideslopes Crest Elevation Slope Type of Lining/Protection Spillway Capacity (provide design calculations)	N/A N/A N/A N/A N/A N/A N/A N/A	N/A
Storage Capacity	Length @ Bottom Width @ Bottom Length @ Crest of Emergency Spillway / Crest of Principal Spillway Width @ Crest of Emergency Spillway / Crest of Principal Spillway Volume @ Crest of Emergency Spillway / Crest of Principal Spillway	100' 50' N/A / 121' N/A / 72' N/A / 25 301 CF	102.15' 57.41' N/A / 126.22' N/A / 80.54'

MIZAL 09/23/2019 VICE PRESIDENT		Permittee HANSON AGGREG	GATES PENNSYLVANIA LLC
Township ENTROCKHILL TOWNSHIP BUCKS COUNTY TO BE COMPLETED AFTER CONSTRUCTION 1. Has the facility been constructed at the location shown in the approved permit? Yes No 2. Is the emergency spillway constructed at the location shown in the approved permit? Yes No 3. Is the principal spillway constructed at the location shown in the approved plan? Yes No 4. Are the collection channel inlets constructed with adequate inlet protection and at the location shown in the approved plan? Yes No 4. Are the collection channel inlets constructed with adequate inlet protection and at the location shown in the approved plan? Yes No 5. Identify any conditions or deficiencies in the facility that need to be corrected. N/A Construction Inspection Stage of Construction (apecity stage e.g. layout, impoundmentembarkment construction, spillway/piping installation) Date of Inspection Inspected By EARTHRES Supervising Professional Engineer/Registered Professional Land Surveyor MICHAEL D. FLING Address 6912 Old Easton Road Pipersville, PA 18947 Telephone Number 215-766-1211 1 certify in accordance with 25 Pa Code Section 77.531 that the above-mentioned structure on DMMS and the professional Engineer/Registered Professional Land Surveyor Date PEO80620 9/30/2019 PORTION OF ACCOUNTY BUCKS COUNTY Professional Engineer/Registered Professional Land Surveyor Date PEO80620 PORTION OF ACCOUNTY PEOROSCO PORTION OF ACCOUNTY PORTION OF ACCOUNTY PEOROSCO PORTION OF ACCOUNTY PORTION OF ACCOUNTY PORTION OF ACCOUNTY PEOROSCO PORTION OF ACCOUNTY PORTION OF ACCOUNTY PEOROSCO PORTION OF ACCOUNTY PORT		Permit No. SMP NO. 7974SM1	
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1/Wh 2/Kh 09/23/2019 VICE PRESIDENT	Registration Number and Expiration Date	9/30/2019	PEOSEAL
Signature of Dormittee or December 1985 11		9/30/2019	
Signature of Permittee or Responsible Official Daté Title		<i>M</i>	WSYLVAN AND THE STREET

SUPPLEMENTAL AS-BUILT CALCULATIONS



Hanson Aggregates - Rock Hill Quarry

Sediment Trap 1 - As-Built

Design Notes

Required Storage Volume and Elevations					
Drainage Area, DA (acres)	Measured	4.28			
Required Sediment Storage Volume (cf)	700 x DA	2,996			
Required Settling Volume (cf)	1300 x DA	5,564			
Required Total Volume (cf)	Sediment + Settling	8,560			
Total Storage Volume Provided (cf)	Storage Volume Table	25,400			
Elevation for Sediment Storage Volume (ft.)	As-Built Survey	543.00			
Total Volume Elevation (ft.)	As-Built Survey	544.82			
Top of Embankment Elevation					
Total Volume Elevation (ft.)	As-Built Survey	544.82			
Freeboard (ft.)	Required	1.00			
Top of Embankment Elevation (ft.)	As-Built Survey	546.42			
Trap D	Dimensions				
Bottom Length (ft.)	As-Built Survey	102.15			
Bottom Width (ft.)	As-Built Survey	57.10			
Crest Length (ft.)	As-Built Survey	126.22			
Crest Width (ft.)	As-Built Survey	80.54			
Top Length (ft.)	As-Built Survey	135.40			
Top Width (ft.)	As-Built Survey	87.04			

Hanson Aggregates - Rock Hill Quarry

Sediment Trap 1 - As-Built

Storage Volume Check

Elevation	Plan Area	Average Area	Elevation	Incremental	Incremental	Cummulative	Cummulative
	_		Difference	Volume	Volume	Volume	Volume
ft.	sf	sf	ft.	cf	acre-ft	cf	acre-ft
542	7,599					0	0.000
543	8,662	8,125	1.0	8,125	0.187	8,125	0.187
544	9,579	9,117	1.0	9,117	0.209	17,241	0.396
545	10,413	9,993	1.0	9,993	0.229	27,234	0.625
546	11,176	10,792	1.0	10,792	0.248	38,027	0.873

Design:

Sediment Storage Volume =

8,124.70 CF

Sediment Storage Volume Elevation =

543.00 ft.

Settling Storage Volume = Settling Storage Volume Elevation =

25,400.00 CF

544.82 ft.

Requirements:

Sediment Storage Volume (700 CF/disturbed area acres) =

2,996 CF

Settling Storage Volume (1,300 CF/drainage area acres) =

5,564 CF

Drainage Area (acres) =

4.28 acres

Average area calculated as follows: [A+B+sqrt(A*B)]/3

By:

JTK

Date:

9/16/2019

Chk'd:

MDF

Date:

9/16/2019

Hanson Aggregates - Rock Hill Quarry

Sediment Trap 1 - As-Built

EMERGENCY SPILLWAY DISCHARGE CAPACITY

WEIR FLOW				
WATER SURFACE	HEAD	FLOW (1)		
ELEV (FT)	H (FT)	Q (CFS)		
544.82	0.00	0.00		
545.00	0.18	8.71		
545.25	0.43	32.14		
545.50	0.68	63.92		
545.75	0.93	102.24		
546.00	1.18	146.13		

Notes:

(1) Weir Flow, Q = CLH^1.5

where:

C = weir coefficient =

3.00

L = bottom width of the spillway crest, ft. =

38.00

H = depth of flow above the spillway crest, ft.

By:

JTK

Date:

9/16/2019

Chk'd:

MDF

Date:

9/16/2019

AS-BUILT SITE PLAN



PHOTO LOG



Photo log for Rockhill Quarry Site Survey – 08/23/2019



Photo #1: Standing on top of Inlet Spillway #3 facing into the trap



Photo #2: Standing on Southern berm facing Inlet Spillway #3



Photo #3: Standing on Southern berm facing Outlet Spillway



Photo #4: Back side of Outlet Spillway with Infiltration Trench



Photo #6: Standing on Western Berm facing Inlet Spillway #1

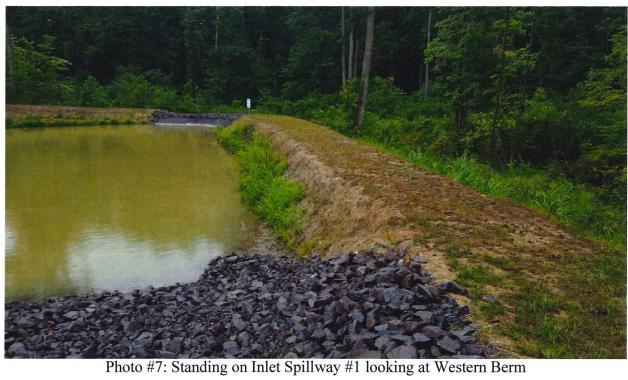
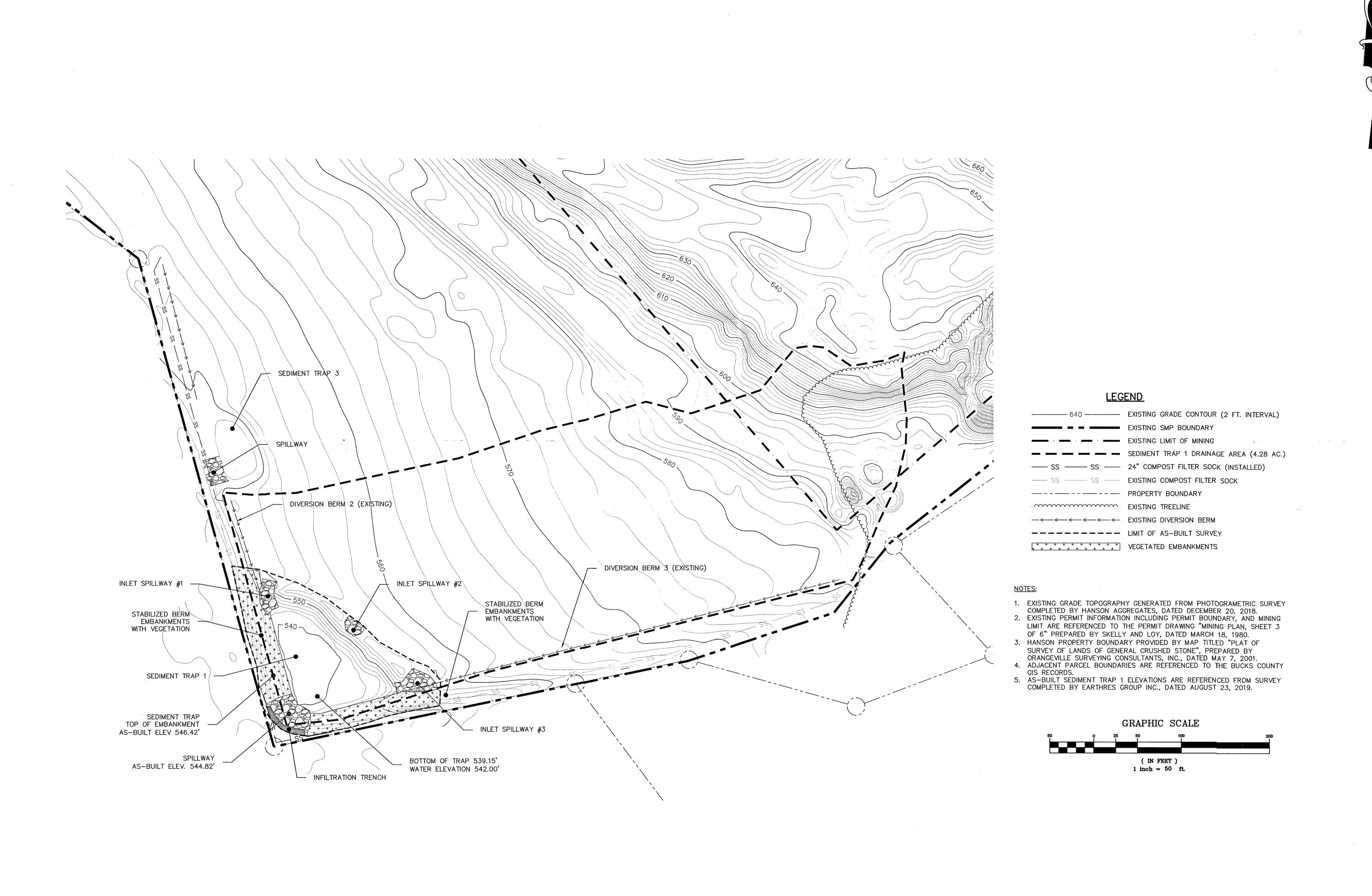




Photo #8: Looking at backside of Inlet Spillway #2



Photo #9: Looking downslope from spillway toward infiltration trench and 24" compost filter sock.



E&S PLAN IMPROVEMENTS SEDIMENT TRAP 1 AS-BUILT