FOUR CORNERS MATERIALS

A division of Oldcastle SW Group, Inc.

Division of Reclamation, Mining and Safety
Colorado Department of Natural Resources
1313 Sherman St., Room 215
Denver, Colorado 80203
Attention: Kate Pickford

22 January 2014

RECEIVED

JAN 27 2014

DIVISION OF RECLAMATION
MINING AND SAFETY

Re: Technical Revision Request - File No. M-2011-028, Animas Glacier Gravel Pit

Dear Ms. Pickford:

Relative to an informal hearing held on August 15, 2012 and pursuant to the stipulation recited therein, Four Corners Materials (applicant) hereby requests a Technical Revision to File No. 2011-028.

This revision is in response to several discussions, meetings and exchange of information with representatives of the Bureau of Reclamation (BoR), Animas La Plata Operations, Maintenance & Repair Association (ALPOMRA), CDRMS, Russell Engineering and Four Corners Materials (FCM).

The primary concern of the BoR and ALPOMRA is the protection of Basin Creek lying west of the Animas Glacier Gravel site. From the outset, it was the intent of FCM to operate the site as a zero-discharge facility. Initial response from the CDRMS Denver office to this proposal was that FCM could not retain stormwater beyond 72 hours as dictated by the Division of Water Resources. This matter was finally addressed by the local Division 7 Engineer who stated that the 72-Hour rule was applicable to those basins which were over-appropriated. Such is not the case in this reach of the Animas River Basin (see attached Exhibit A).

As presented and demonstrated in the attached amended Drainage Report, FCM offers an engineered solution to prevent any discharge of stormwater and/or process water from the affected areas of the Animas Glacier Gravel facility into Basin Creek.

As shown on the attached site plan, the northern extent of the property will remain unaffected. Stormwater drainage across this stretch will reach the existing grouted rundown structure unencumbered by any development or soil disturbance. A perimeter berm was designed to extend along the western rim of the property to the north and east. It is located south of the grouted rundown structure. Based on the existing topography this berm will form a basin, isolating areas to be developed and/or affected from the unaffected area to the north.

We look forward to your response regarding questions or concerns the Division, BoR or ALPOMRA may have.

Sincerely,

Matt R. Carnahan
Resource & Environmental Manager

encls
ec,w/encls: K. Pickford, CDRMS Durango Field Office

EXHIBIT A

From: Leach, Rege [mailto:rege.leach@state.co.us]
Sent: Wednesday, October 24, 2012 5:36 PM
To: Kate Pickford; Peter Foster; Heidi Frey
Subject: Aninas Glacier Gravel, Permit No. M-2011-028

Dear Kate,

In reviewing the August 1, 2012 memo from Tim Cazier to you I noticed item #3 Basin Creek in particular the statement "the pond must be de-watered in 72 hours". I assume the 72 hour restriction is to limit the evaporation from ponds which have no decreed water rights for evaporation. We do allow this 72 hour flexibility and enforce this on streams which are over appropriated. In this case on Basin Creek a tributary to the Animas River which is not over appropriated, we would not impose the 72 hour limitation. If your reason for applying the 72 hour limitation is for our water administration concern it should not apply in this specific case. In the future when the Animas River is over appropriated the 72 hour limitation would apply for water administration purposes.

I understand the 72 hour max holding time may not be adequate for turbidity control and this limitation may be detrimental to other water users as well as the aquatic habitat.

Pete Foster with Wright Water, who is consulting for Four Corners Materials, and I have been discussing this issue and he ask that I point this out to you. I would be glad to discuss this in more detail if it would be helpful.

Thank you,
Rege
--
Rege Leach, P.E.
Division 7 Engineer
970-247-1845
Fax 970-259-0944
rege.leach@state.co.us

1/23/2014
Please Note: A check issued by Oldcastle SW Group, Inc in the amount of $216.00 was inadvertantly sent directly to the CDRMS Denver office to cover the fees associated with the enclosed T.R. request. Pls call Matt Carnahan @ 970-759-1555 w/ questions. Thanx Matt

Also, proof of receipt by the La Plata County Clerk & Recorder is enclosed as the last page

ANIMAS GLACIER GRAVEL PIT

DRAINAGE REPORT – Amendment 1

Durango, CO

La Plata County

Date: January 22nd, 2014

Prepared by

Russell Planning and Engineering, Inc.

934 Main Ave. Unit C

Durango, CO 81301

Introduction

The purposed of this Drainage Study Amendment is to address the as-constructed conditions of the Animas Glacier Gravel Pit. Based on feedback from the State of Colorado Division of Water Resources, Four Corners Materials would prefer to operate the Animas Glacier Gravel Pit as a true "Zero Discharge" facility and has begun the construction of the initial infrastructure to achieve this goal. The following Amendment to the Animas Glacier Gravel Pit Drainage Study addresses the storm water volumes as proposed.

As-Constructed Conditions

Based on a January 14th site visit and discussion with Matt Carnahan concerning the Gravel Pit, it is our understanding that the 72 hour release time for storm water is not currently a concern for the State of Colorado Division of Water Resources, as the Animas River is not over allocated at the present time. Therefore, water may be stored for additional time and allowed to naturally evaporate, or be utilized as a part of operations in lieu of private well or Animas River water. [1]

This storm water management system is desirable for two reasons:
1. It allows Four Corners to utilize available storm water instead of incurring additional costs to supply water to the site.
2. It eliminates storm water runoff from the disturbed area of the project, thus eliminating potential conflicts with the Bureau of Reclamation requirements for water quality within Ridges Basin as a result of the construction of Lake Nighthorse.

Four Corners Materials has begun initial site prep for future gravel operations and constructed a 4.8 acre-ft retention pond within the pit. Along with this retention pond, a large berm has been constructed within the pit, to further prevent storm water from leaving the site. This berm would potentially result in an additional 220 acre-ft of storage volume above and beyond the primary retention pond should rainfall ever generate that much runoff in this basin.

Run-Off Calculations

As Constructed, the retention pond and the berm will eliminate the originally proposed Grass Lined Swale A, which was intended to route the undisturbed drainage basin around the mined pit area. This change will increase the contributing detention basin to the gravel pit retention pond to approximately 50 acres. The revised basin has been modeled and will have the following characteristics.

Gravel Pit Basin Characteristics
Area = 50 Acres
CN = 80 (used weighted curve number based on combined basins from 10-23-12 Drainage Study)
T_c = 20 minutes (used Basin 8 time of concentration from 10-23-12 Drainage Study)
Q_2 = 19.60 cfs
Q_{10} = 41.23 cfs
Q_{100} = 86.79 cfs

[1] In order to utilize Storm water as a part of operations, a water right filing may be necessary for Four Corners Materials.

The total estimated volume of runoff for a 100 year storm has also been calculated at 6.3 acre-ft, of which 75% would be held within the primary retention pond, while the excess 1.5 acre-ft of water would become nuisance water within the gravel pit. The remaining 220 acre-ft of potential storage volume created by the berm would remain available and allow for an additional 35 consecutive - 100 year storm events before the berm would over top.

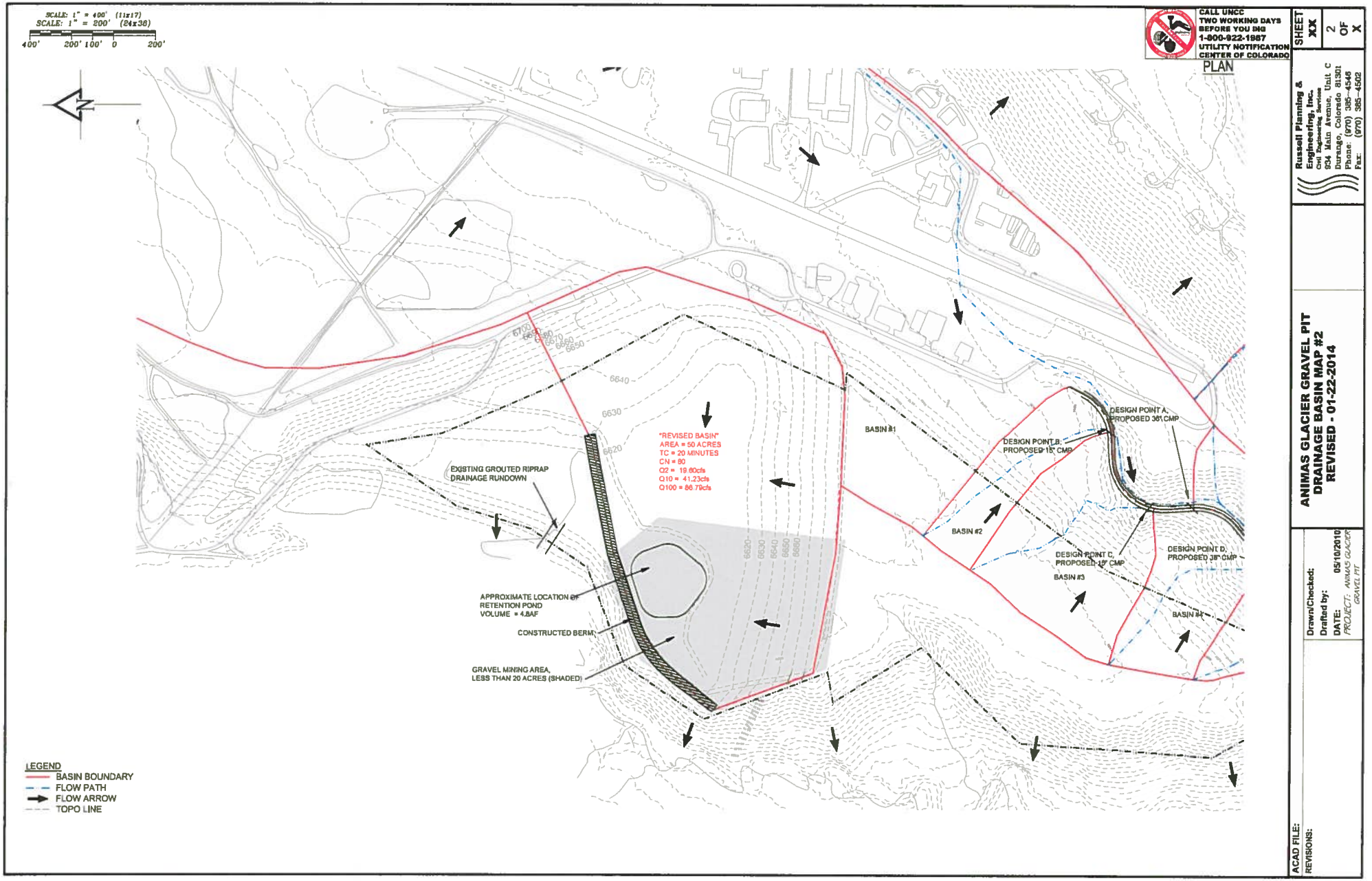
Conclusion

It is our professional opinion that the as-constructed 4.8 acre-ft retention pond will provide adequate storage volumes for storm water within the gravel pit. In the event that a 100 year storm event occurs, approximately 1.5 acre-ft of additional water will collect in low areas of the gravel pit. If this does occur, it would benefit Four Corners Materials to immediately utilize the extra water within their operations (via washing, dust mitigation, concrete production, etc.) or expand their retention pond to accommodate the water.[2] Both of these options would likely occur within a short period of time due to financial implications of standing water interfering with pit operations.

The additional 220 acre-ft of storage volume created by the construction of the berm within the pit also provides a factor of safety that would require storm events (36 consecutive 100 year storms) that have no more than a 1×10^{-72} chance of occurring within a single year.[3] Therefore, the chances for the Animas Glacier Gravel Pit to discharge storm water to Basin Creek is effectively zero.

See Appendix A for Revised Drainage Basin Map and Hydraflow Calculations.

[2] Four Corners Materials estimates that 0.50 acre-ft of water could be used via concrete batch production, gravel washing, and dust control during normal operations.



SHEET XX
2 OF X

Russell Planning & Engineering, Inc.
Chris Russell
934 Main Avenue, Unit C
Durango, Colorado 81301
Phone: (970) 385-4545
Fax: (970) 385-4502

ANIMAS GLACIER GRAVEL PIT
DRAINAGE BASIN MAP #2
REVISED - 01-22-2014

ACAD FILE:
REVISIONS:

Drawn/Checked:
Drafted by:
DATE: 05/10/2010
PROJECT: ANIMAS GLACIER GRAVEL PIT

Hydraflow Table of Contents

20140122 Revised Study.gpw

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2013 by Autodesk, Inc. v10

Wednesday, 01 / 22 / 2014

Watershed Model Schematic

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2013 by Autodesk, Inc. v10

Legend

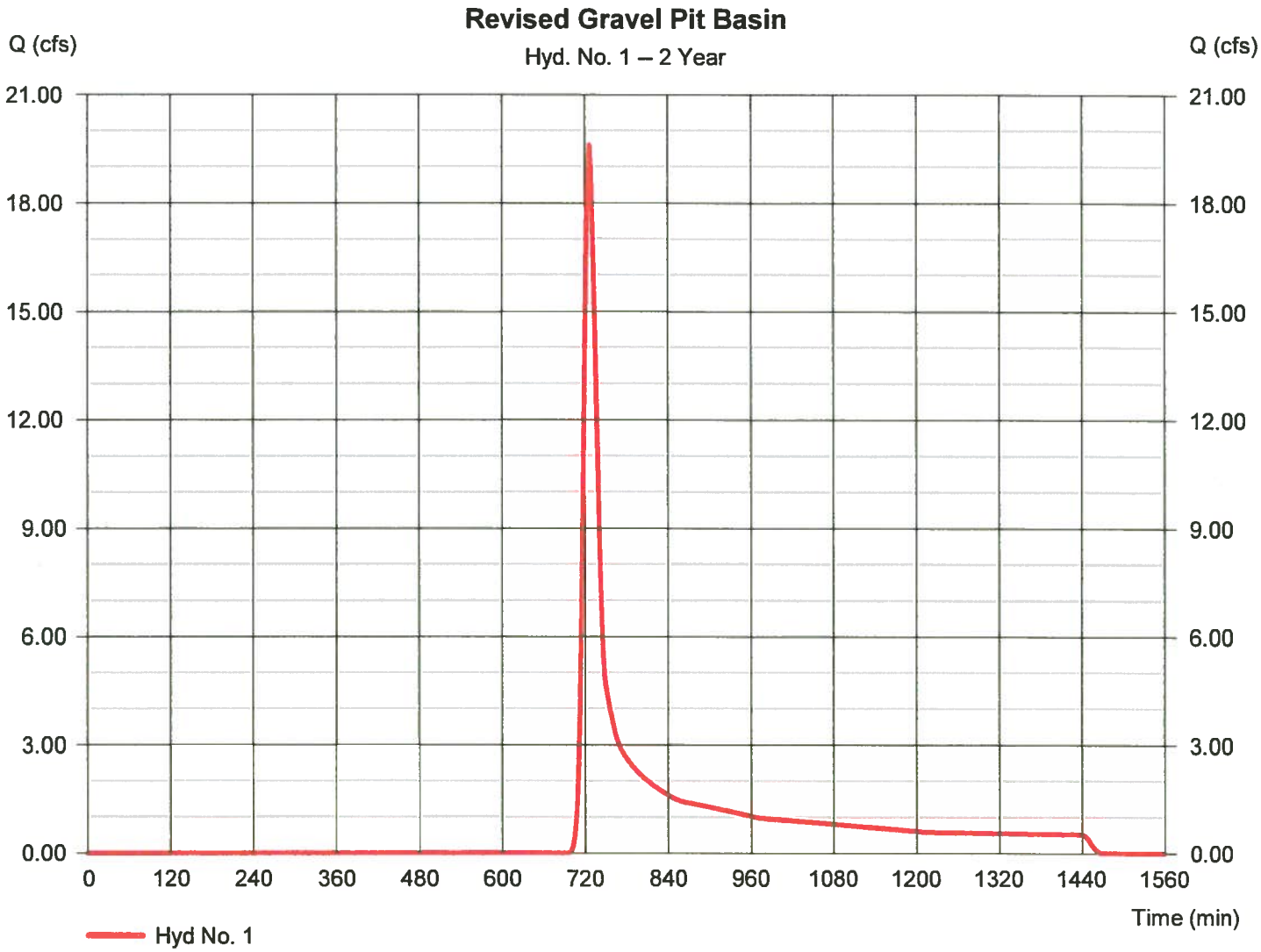
Hyd.	Origin	Description
1	SCS Runoff	Revised Gravel Pit Basin

Hydrograph Report

Hyd. No. 1

Revised Gravel Pit Basin

Hydrograph type	= SCS Runoff	Peak discharge	= 19.60 cfs
Storm frequency	= 2 yrs	Time to peak	= 726 min
Time interval	= 2 min	Hyd. volume	= 70,637 cuft
Drainage area	= 50.000 ac	Curve number	= 80
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 20.00 min
Total precip.	= 1.70 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



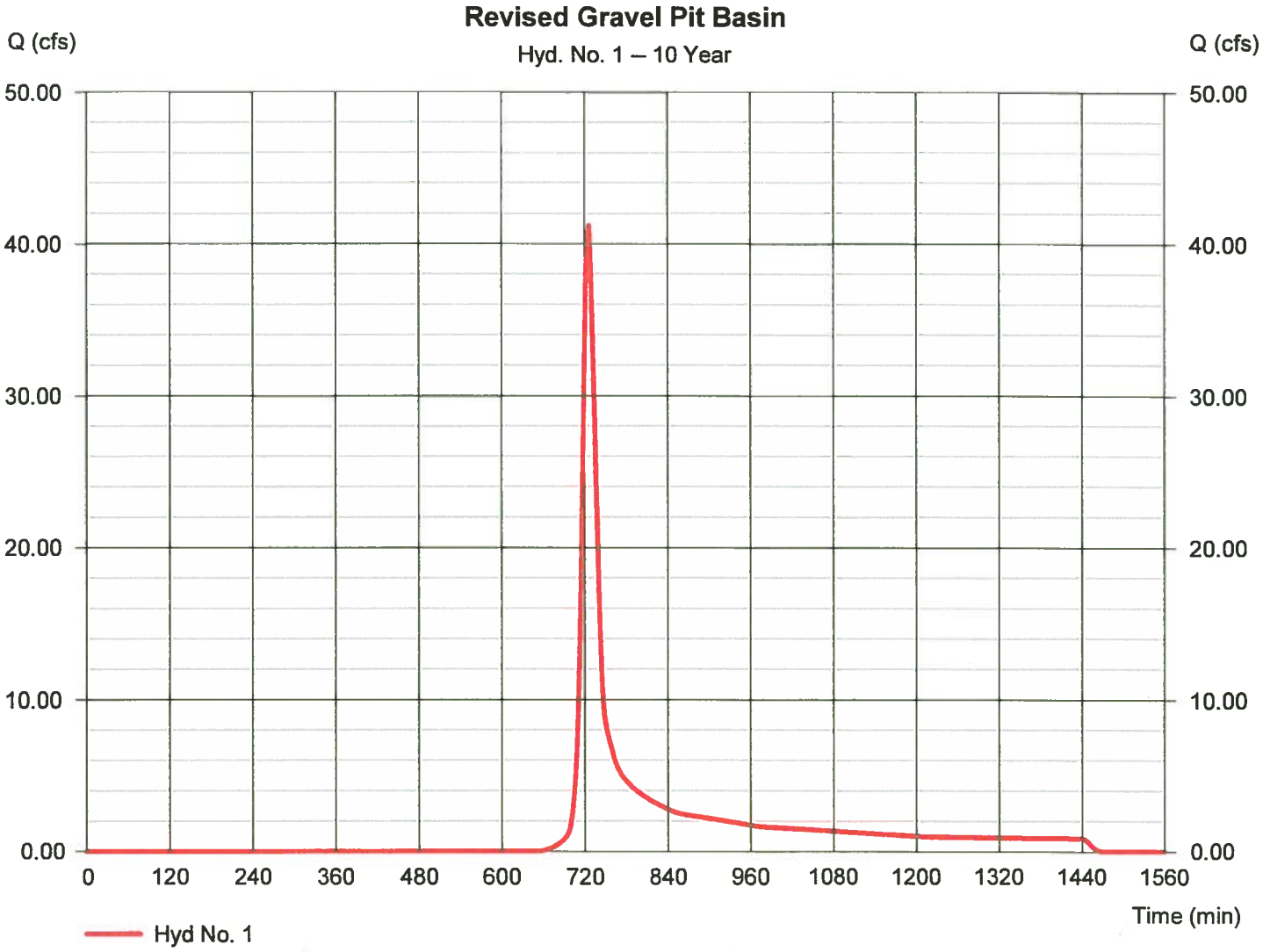
Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2013 by Autodesk, Inc. v10 Wednesday, 01 / 22 / 2014

Hyd. No. 1

Revised Gravel Pit Basin

Hydrograph type	= SCS Runoff	Peak discharge	= 41.23 cfs
Storm frequency	= 10 yrs	Time to peak	= 726 min
Time interval	= 2 min	Hyd. volume	= 135,558 cuft
Drainage area	= 50.000 ac	Curve number	= 80
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 20.00 min
Total precip.	= 2.29 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

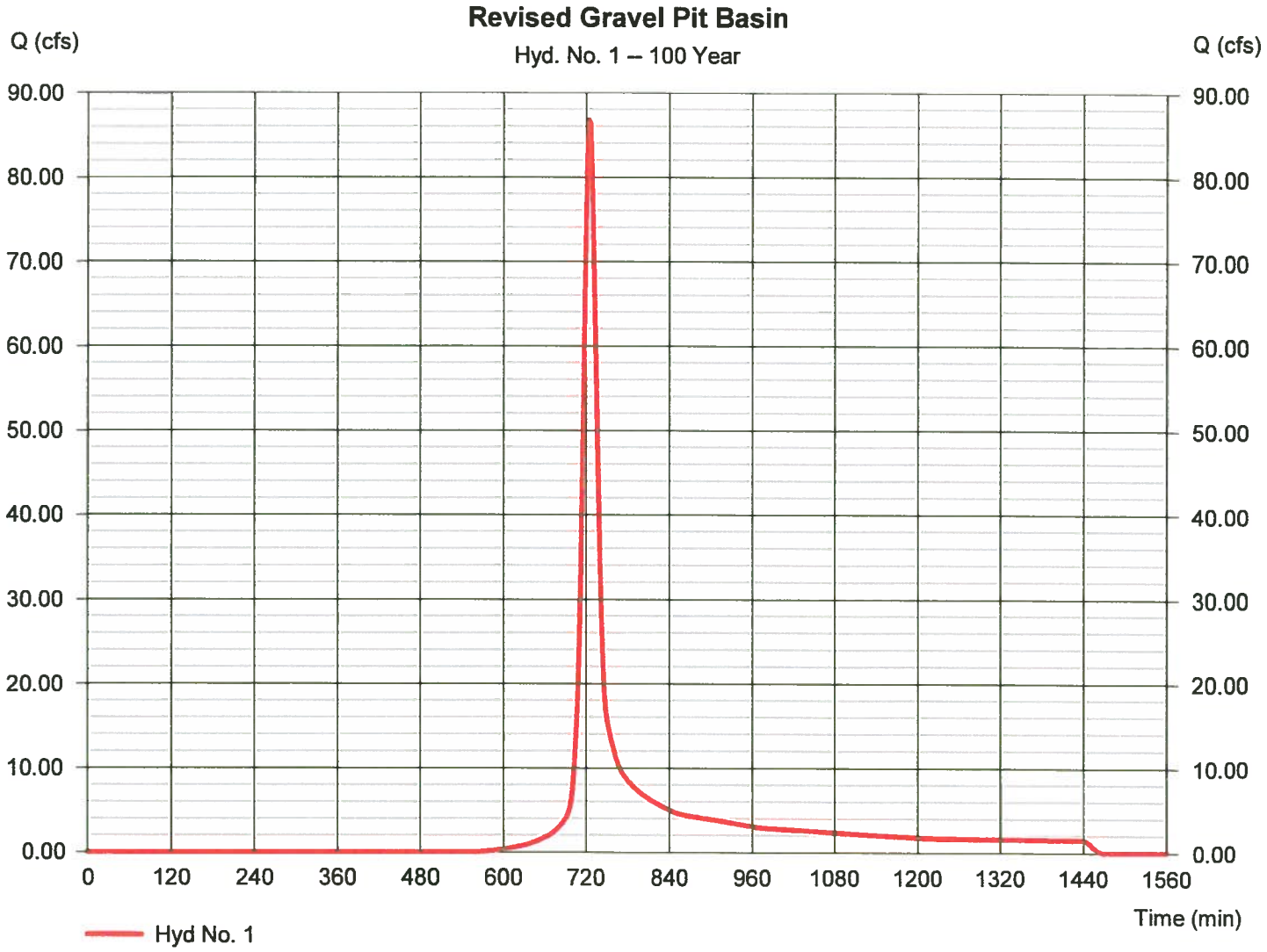


Hydrograph Report

Hyd. No. 1

Revised Gravel Pit Basin

Hydrograph type	= SCS Runoff	Peak discharge	= 86.79 cfs
Storm frequency	= 100 yrs	Time to peak	= 724 min
Time interval	= 2 min	Hyd. volume	= 274,140 cuft
Drainage area	= 50.000 ac	Curve number	= 80
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 20.00 min
Total precip.	= 3.34 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



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Sincerely,

Matt R. Carnahan
Resource & Environmental Manager

encls
ec,w/encls: K. Pickford, CDRMS Durango Field Office

P.O. Box 1969 ○ Bayfield, CO 81122 ○ 970-247-2172 ○ FAX: 970-259-3631

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