

(2) 水質（常時観測）

- 1) 観測目的

ダム撤去により環境が変化すると予測されるダム上・下流において、水質の常時観測を行い、出水時の水の濁り等の発生状況を把握することを目的とする。
- 2) 観測項目

次の4つの項目を観測する。①水温、②pH、③D0、④濁度
- 3) 観測時期・頻度

平成27年4月1日～平成28年3月31日の期間において、1時間毎とする。

4) 観測方法

各観測項目の観測方式及び測定範囲を下表に示す。

観測項目	観測方式	測定範囲
水温	半導体センサ	-5～50℃
pH	固定電解液ガラス電極方式	0～14
D0	ガルバニ電極方式	0～20mg/L
濁度	積分球方式及び透過光方式	0～2000FTU

- 5) 観測地点
- 次の3地点で観測した。①瀬戸石ダム下流、②道の駅坂本、③横石

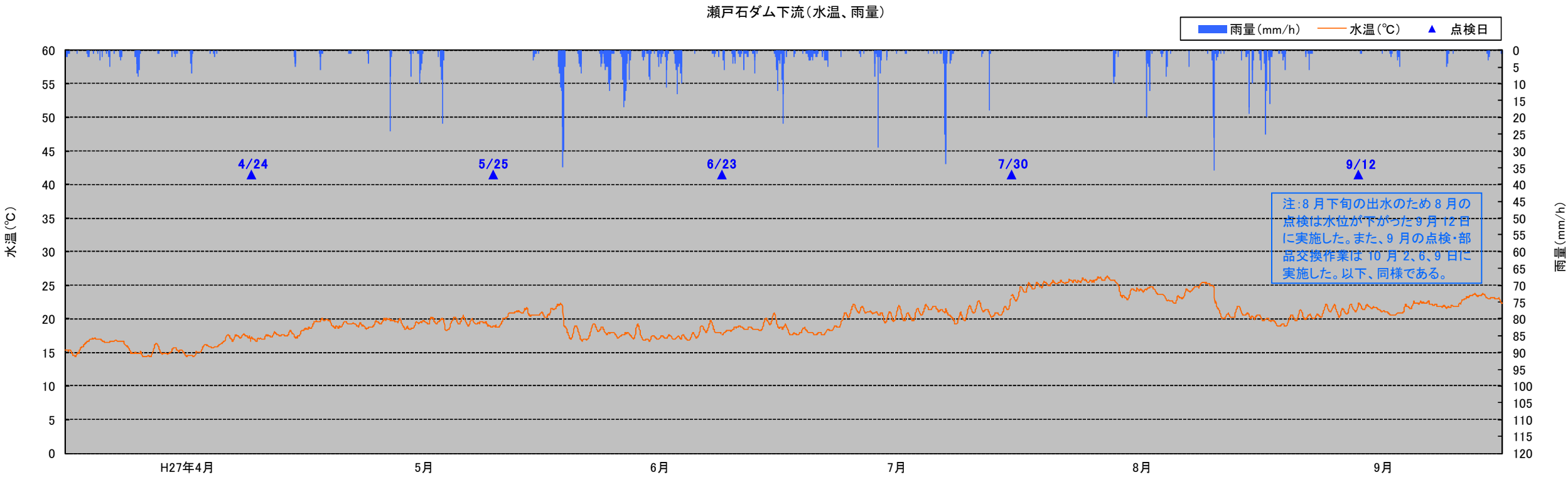


※この地図は、国土地理院発行の2万5千分の1地形図(坂本、中津道)を背景図として使用したものである。

6) 観測結果

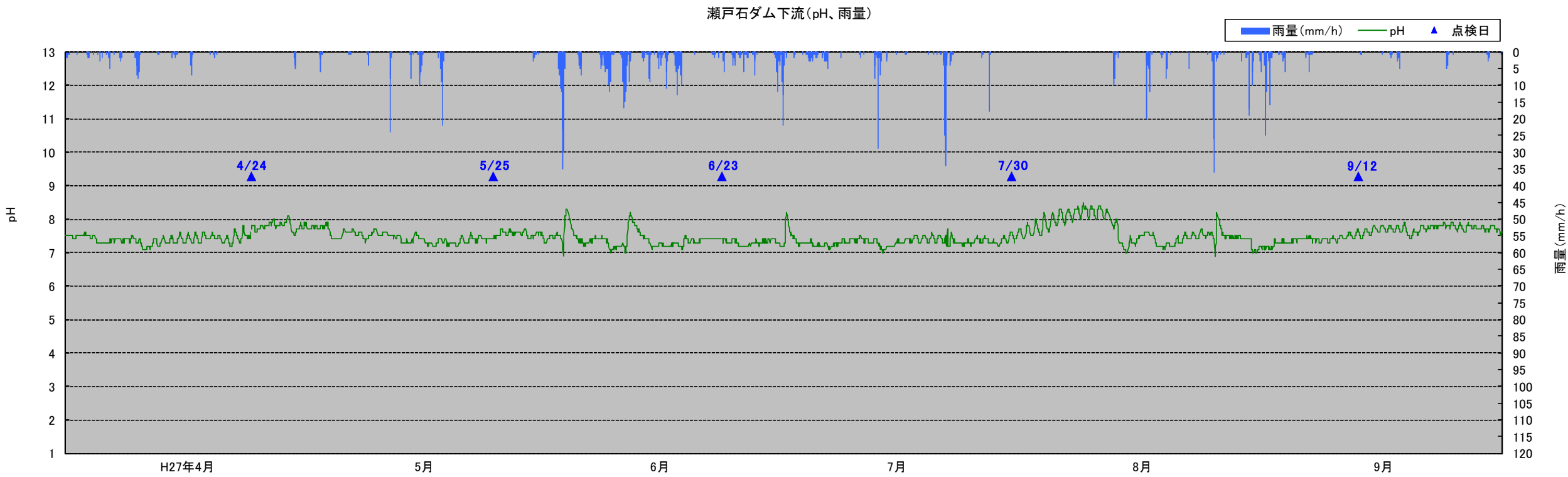
①瀬戸石ダム下流

水温



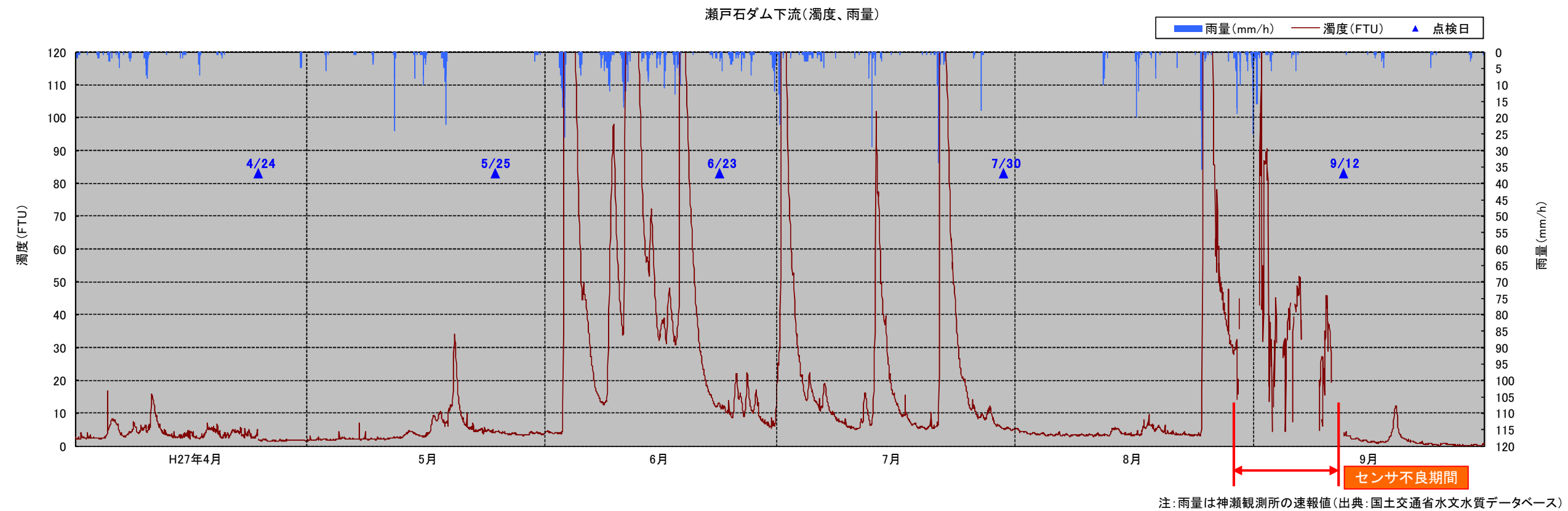
注: 雨量は神瀬観測所の速報値(出典: 国土交通省水文水質データベース)

pH

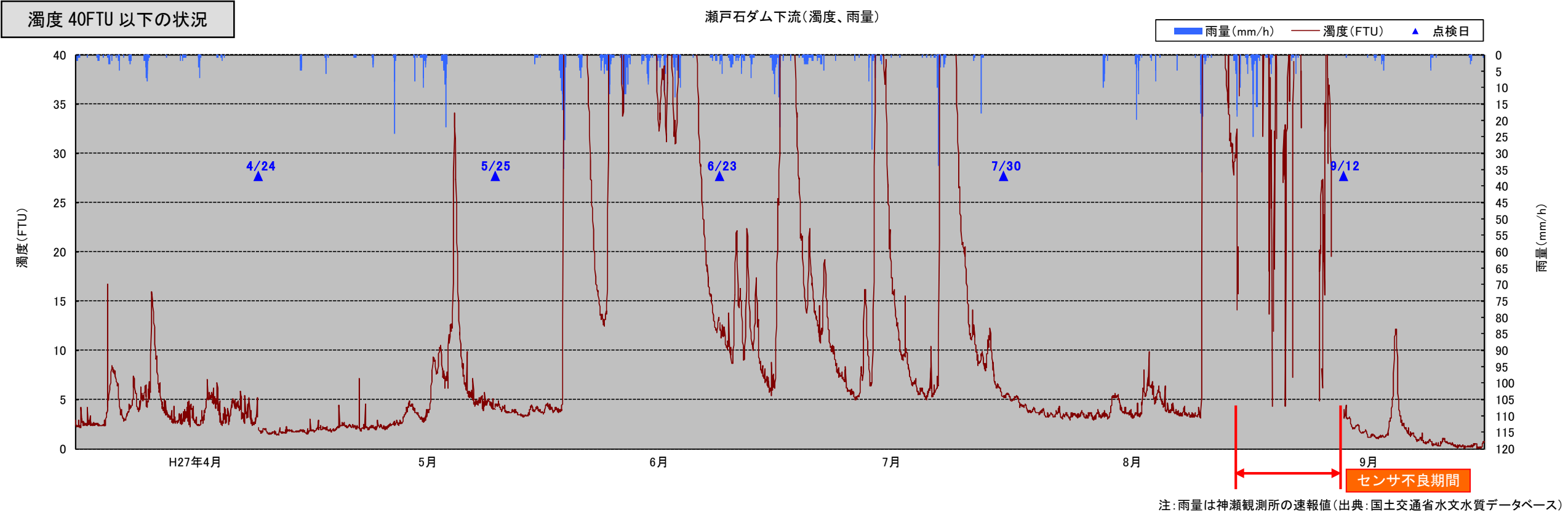


注: 雨量は神瀬観測所の速報値(出典: 国土交通省水文水質データベース)

①瀬戸石ダム下流

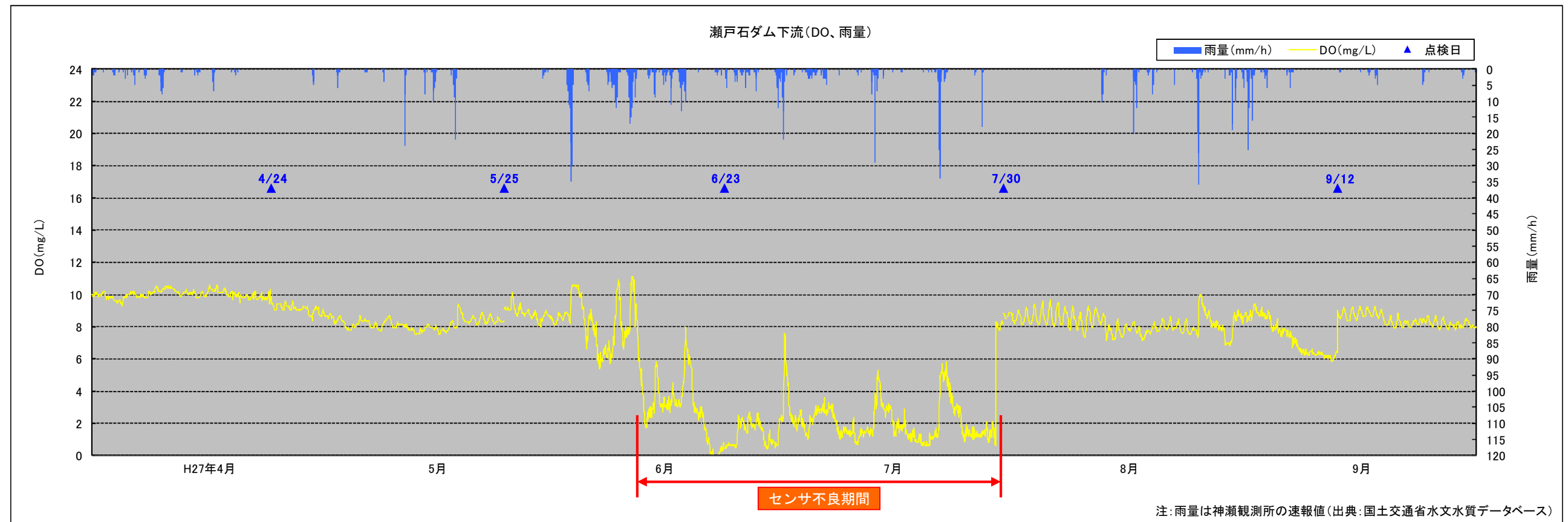


濁度



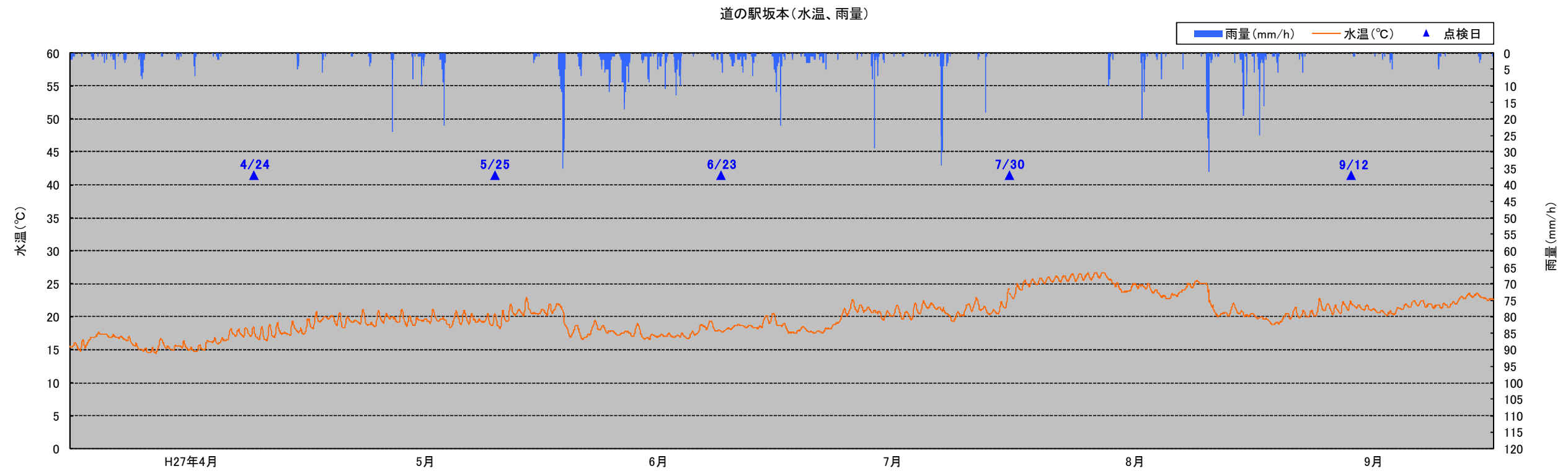
①瀬戸石ダム下流

DO

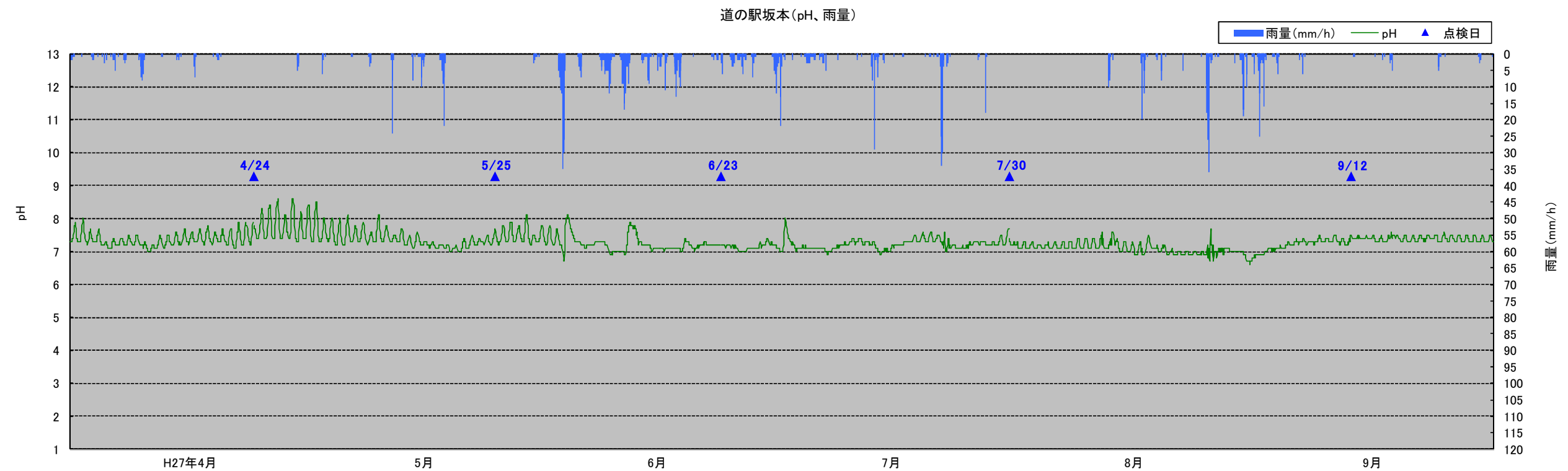


②道の駅坂本

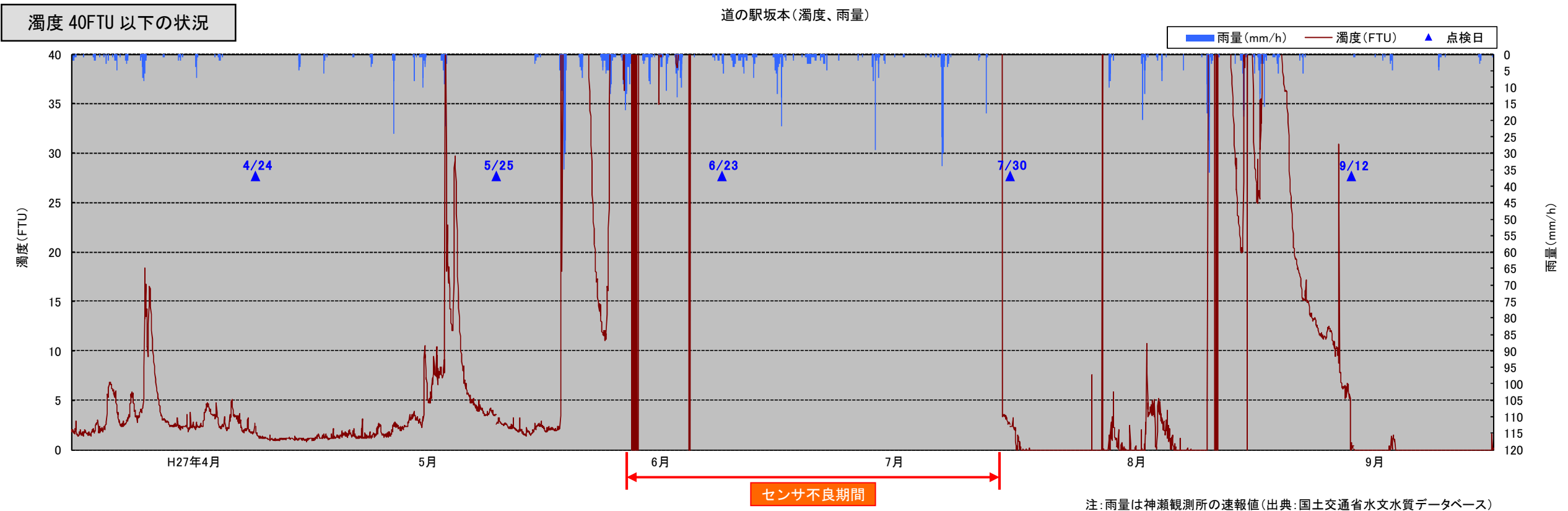
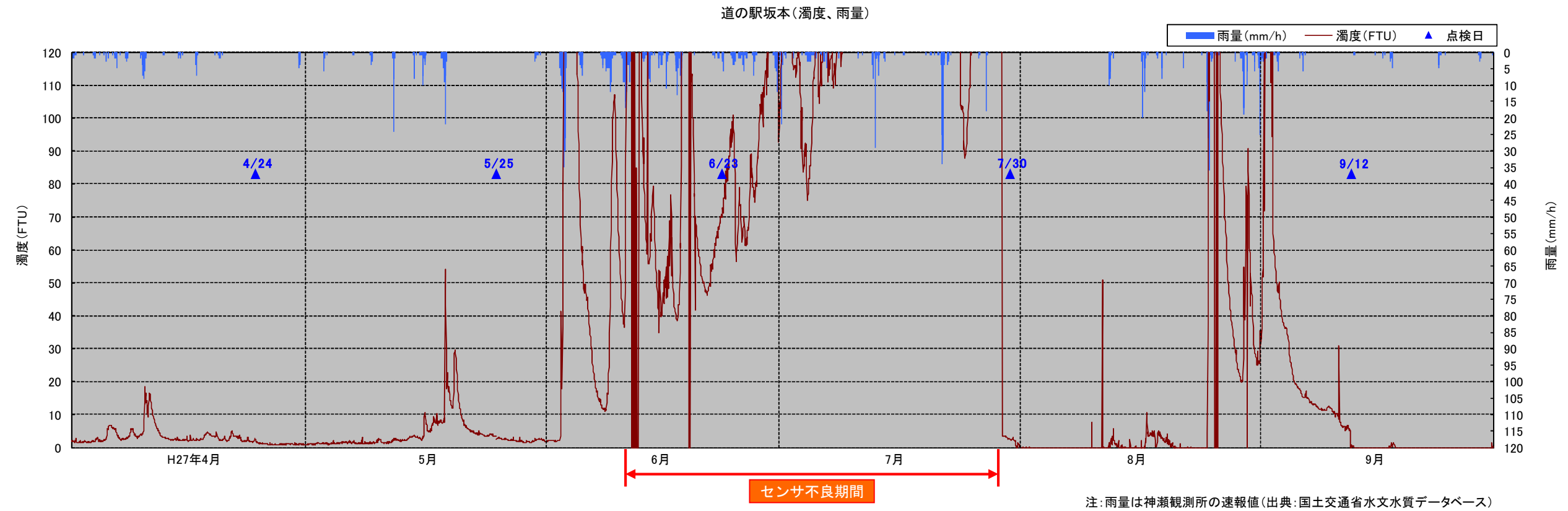
水温



pH

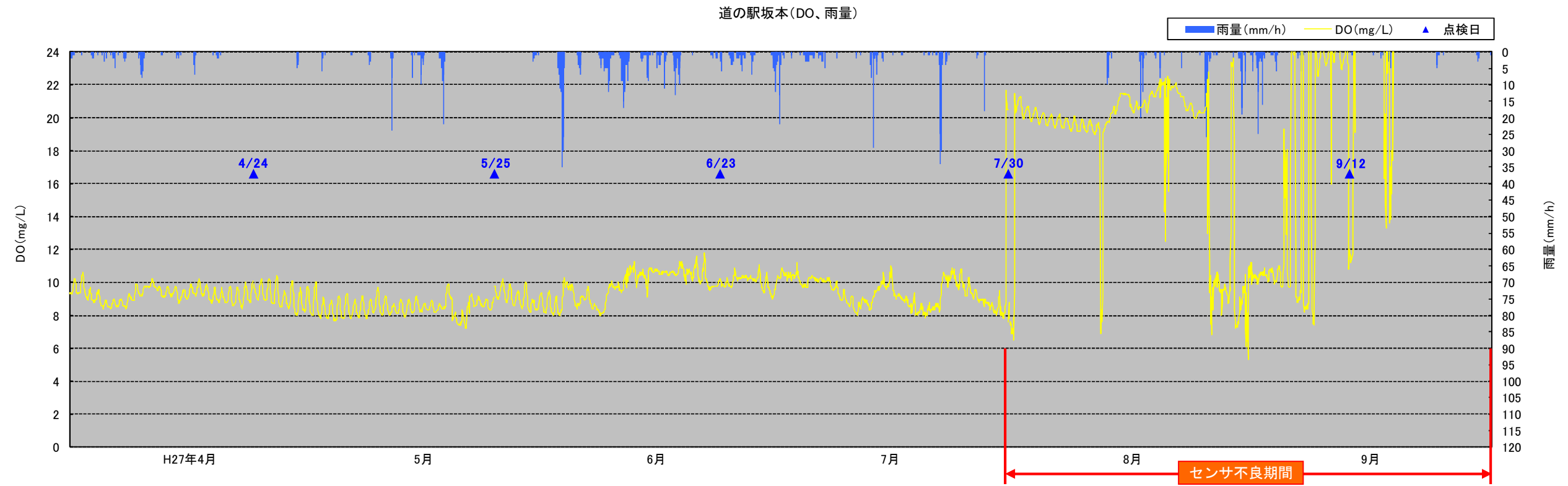


②道の駅坂本



②道の駅坂本

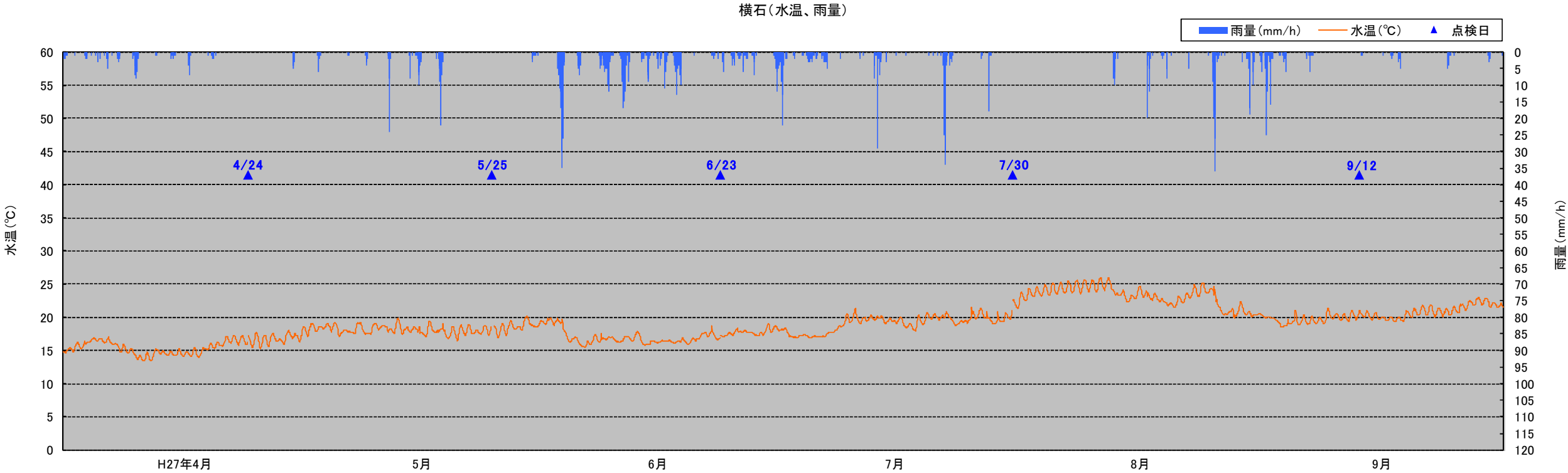
DO



注: 雨量は神瀬観測所の速報値(出典: 国土交通省水文水質データベース)

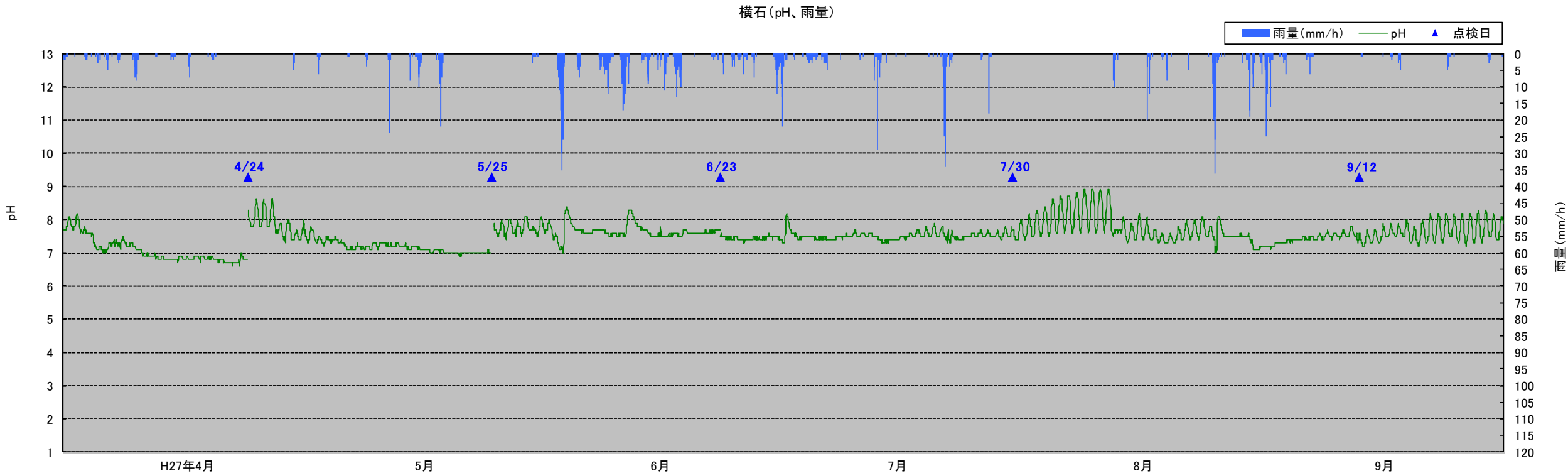
③横石

水温



注: 雨量は神瀬観測所の速報値(出典: 国土交通省水文水質データベース)

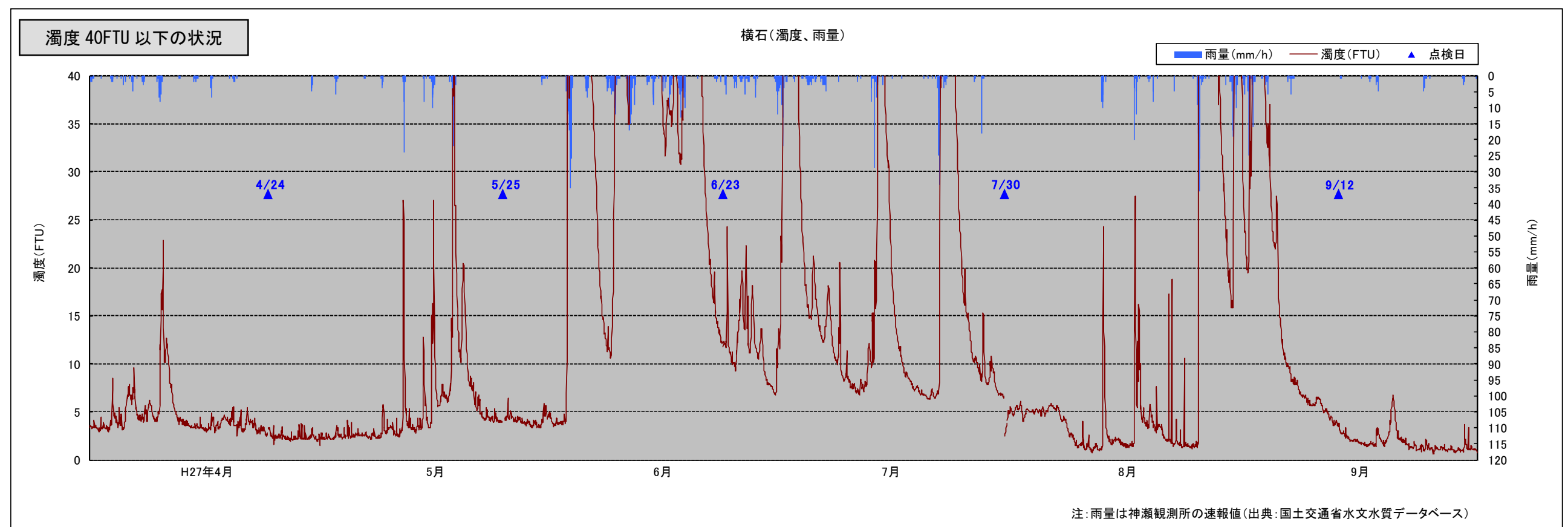
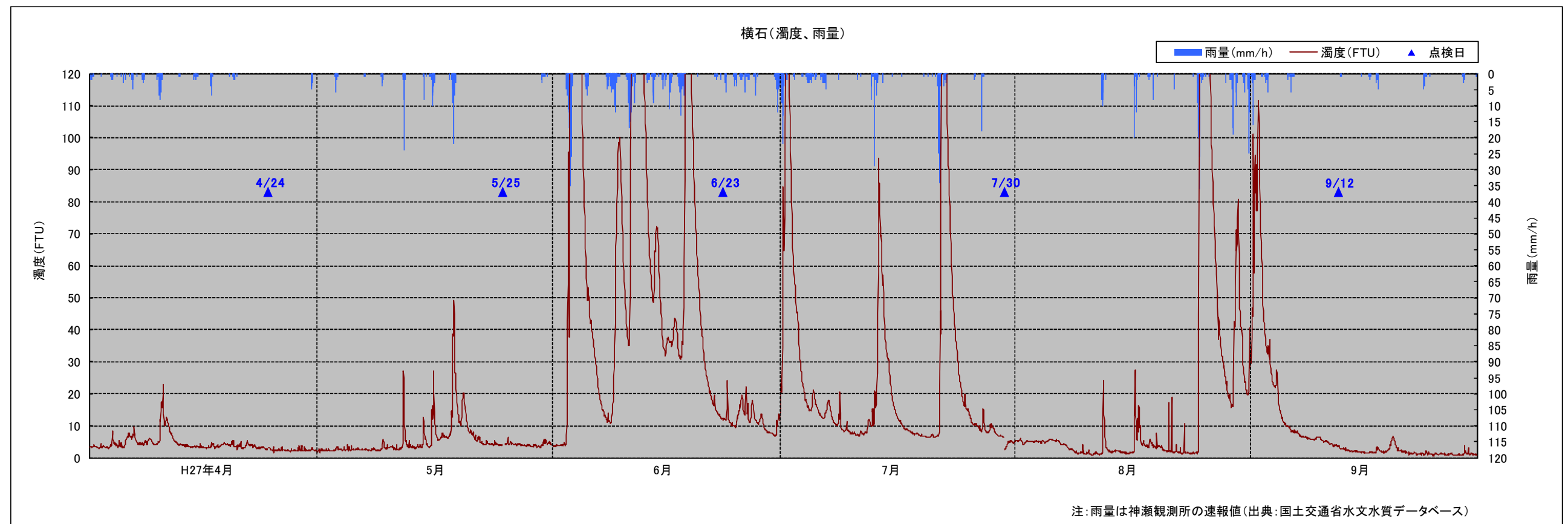
pH



注: 雨量は神瀬観測所の速報値(出典: 国土交通省水文水質データベース)

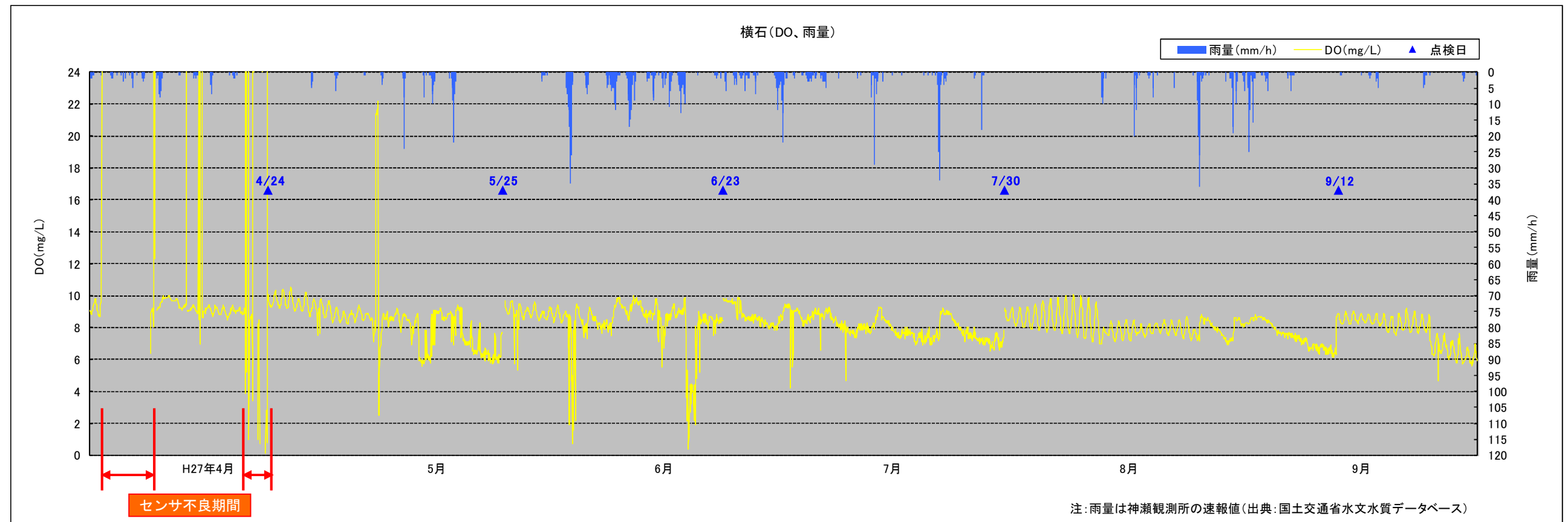
③横石

濁度



③横石

DO



7) 出水時の流量と濁度（FTU）の時間的な変化について（H21～27 年）

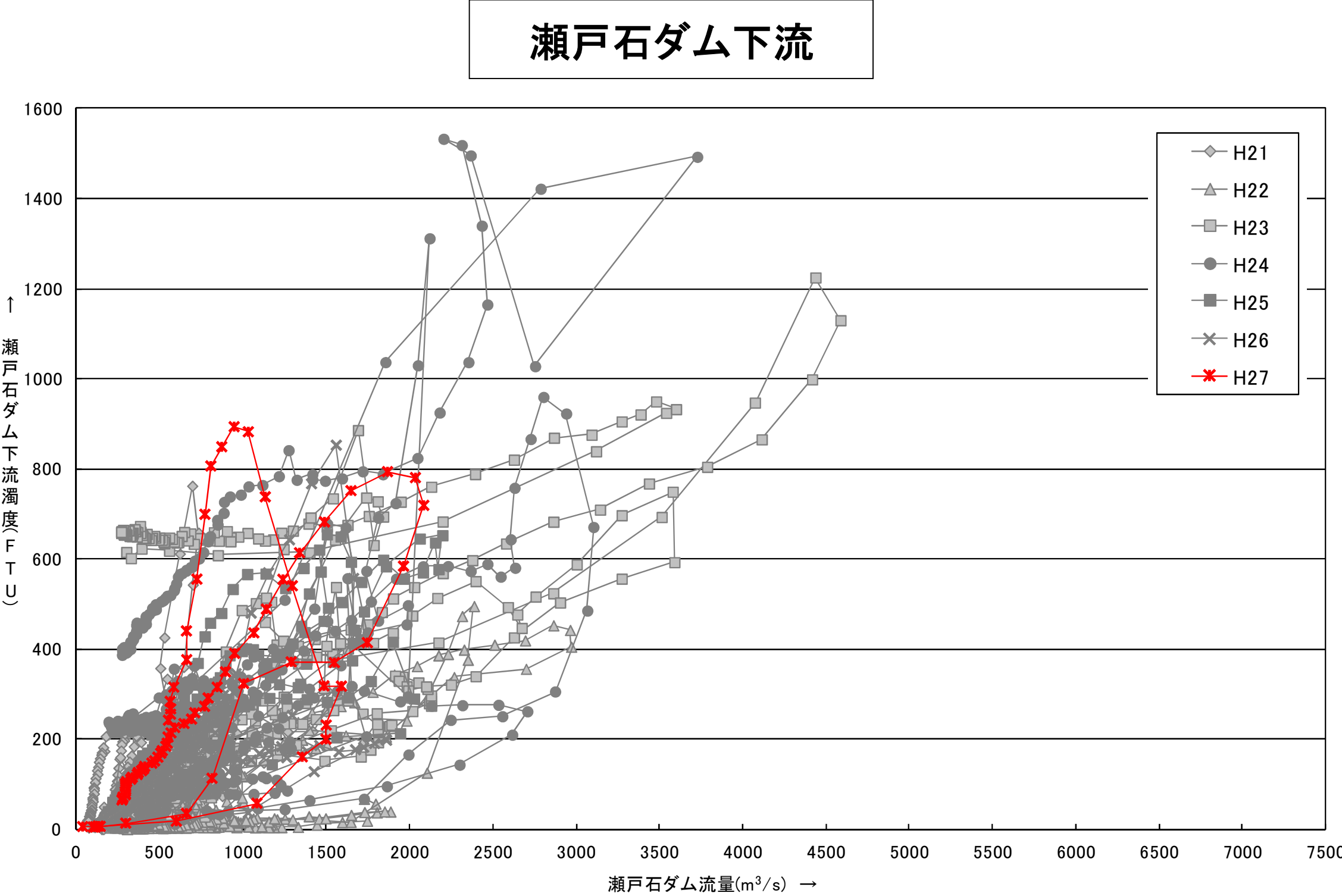
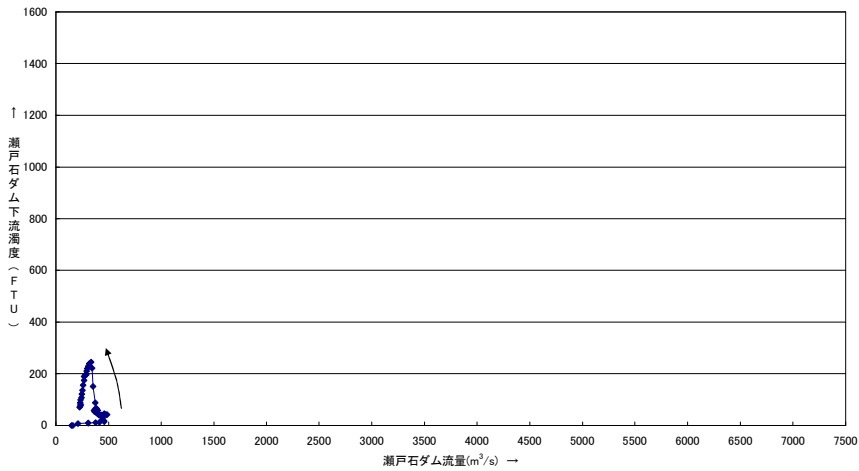


図 出水時の流量と濁度（FTU）の時間的な変化（瀬戸石ダム下流）

瀬戸石ダム下流

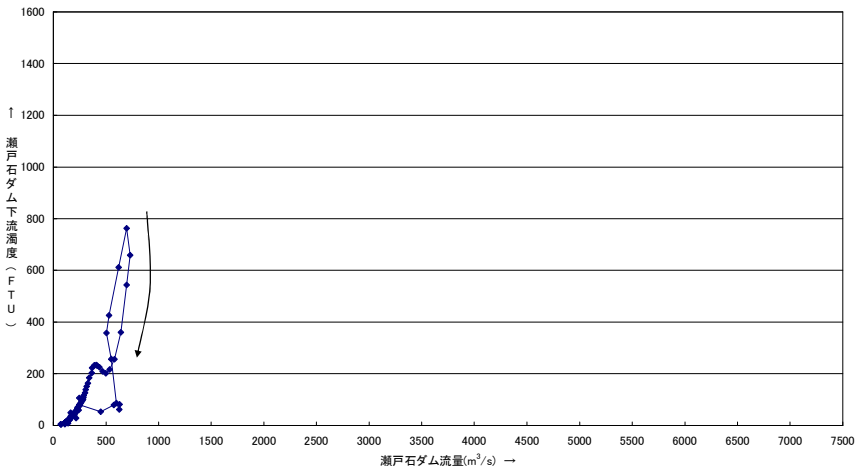
H21①

2009/6/29-7/1



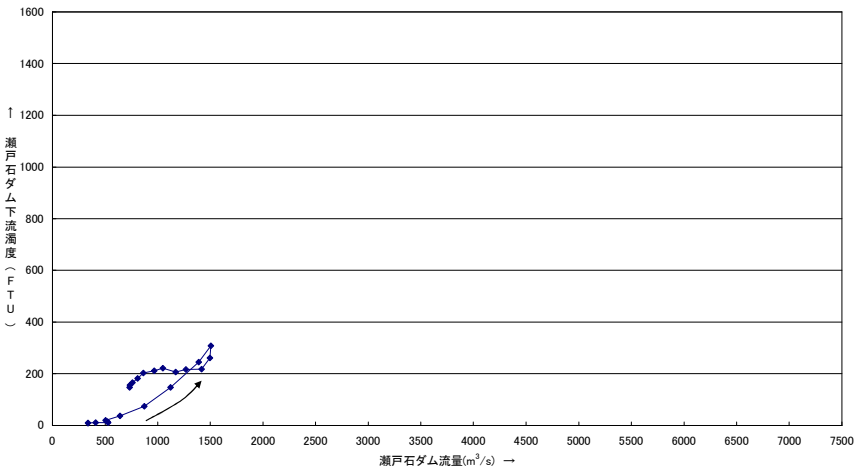
H21②

2009/7/11-7/16



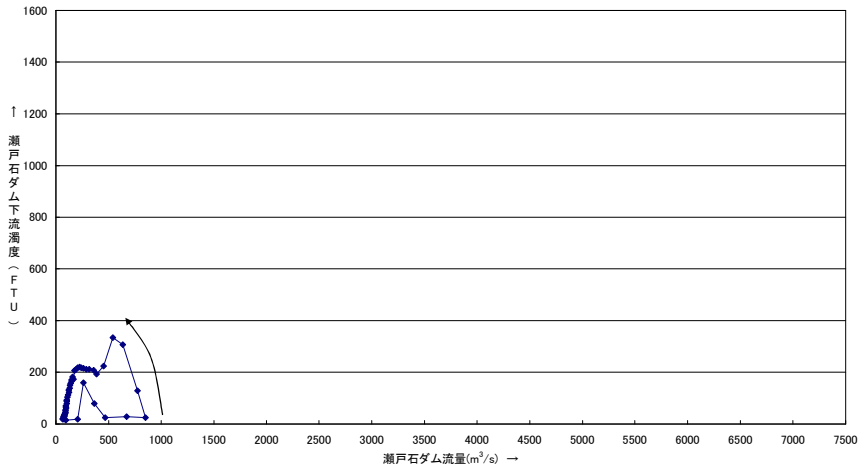
H21③

2009/7/25-7/26



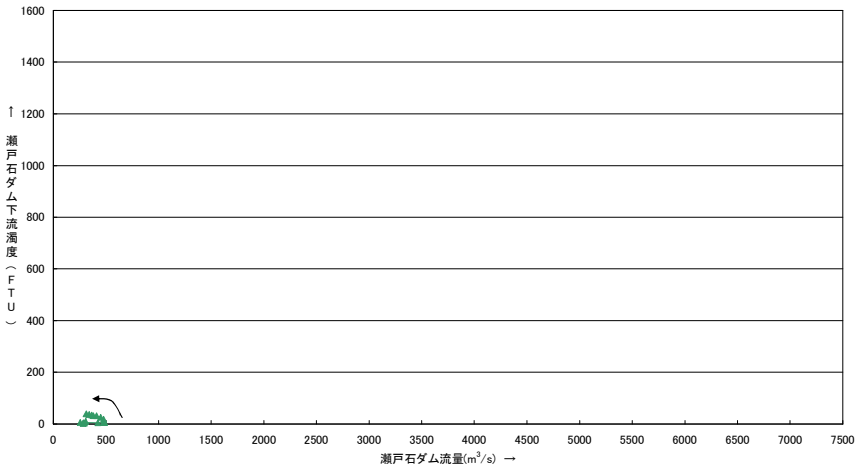
H21④

2009/10/2-10/4



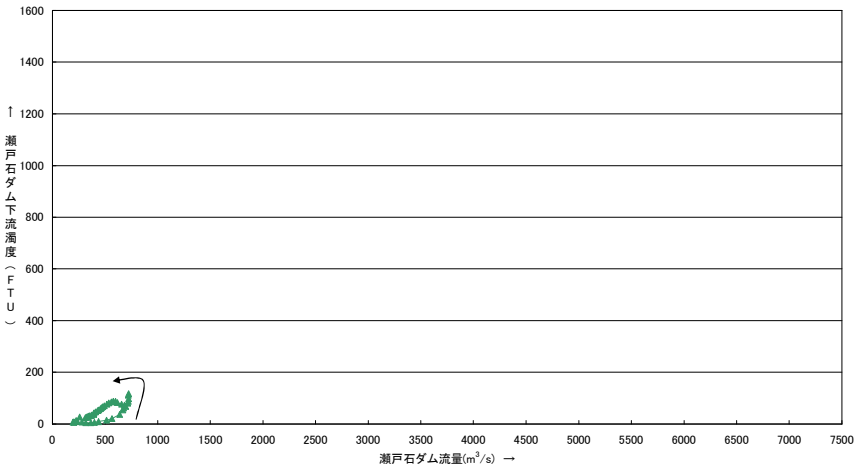
H22①

2010/4/20



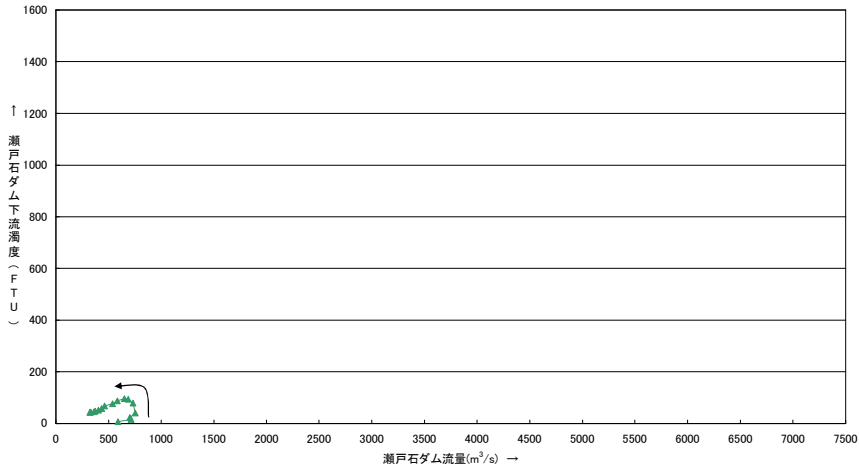
H22②

2010/4/22-4/24



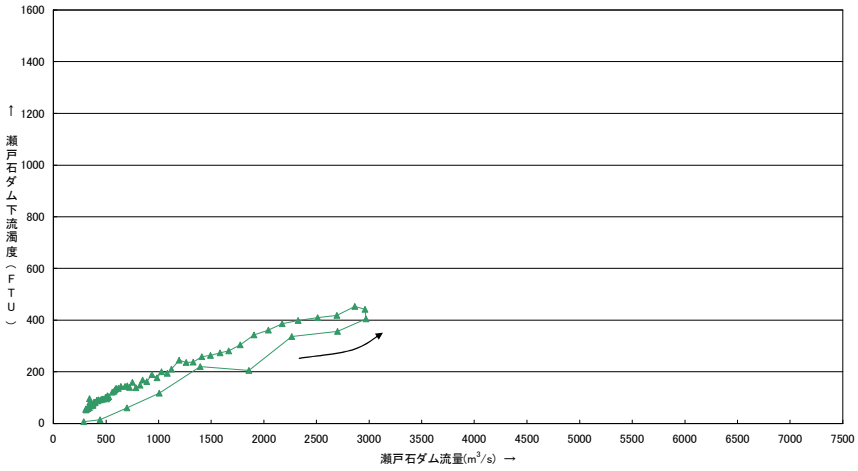
H22③

2010/5/19-5/20



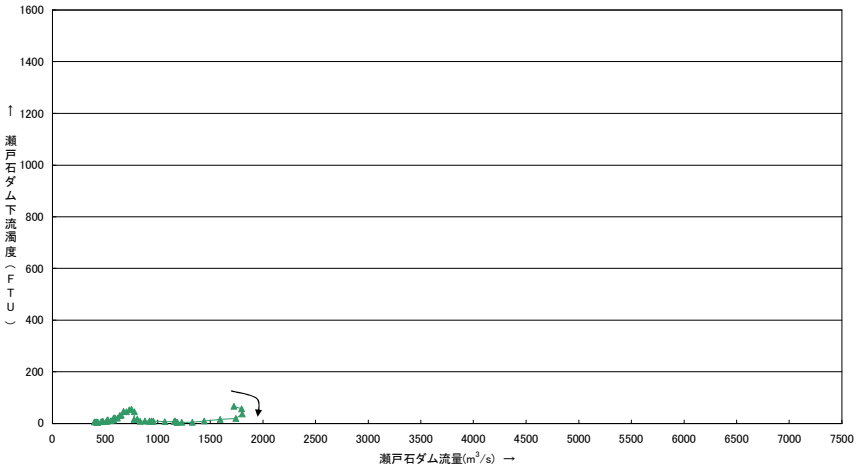
H22④

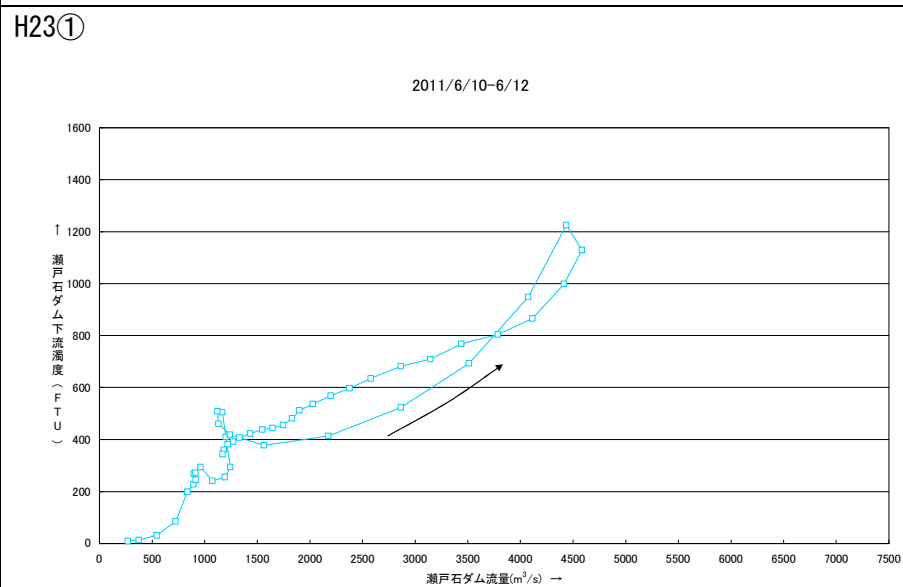
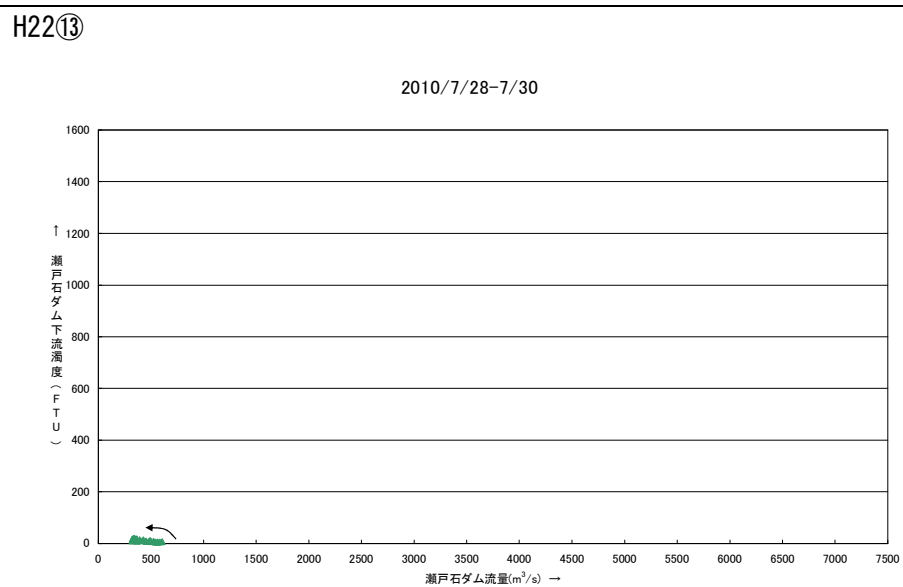
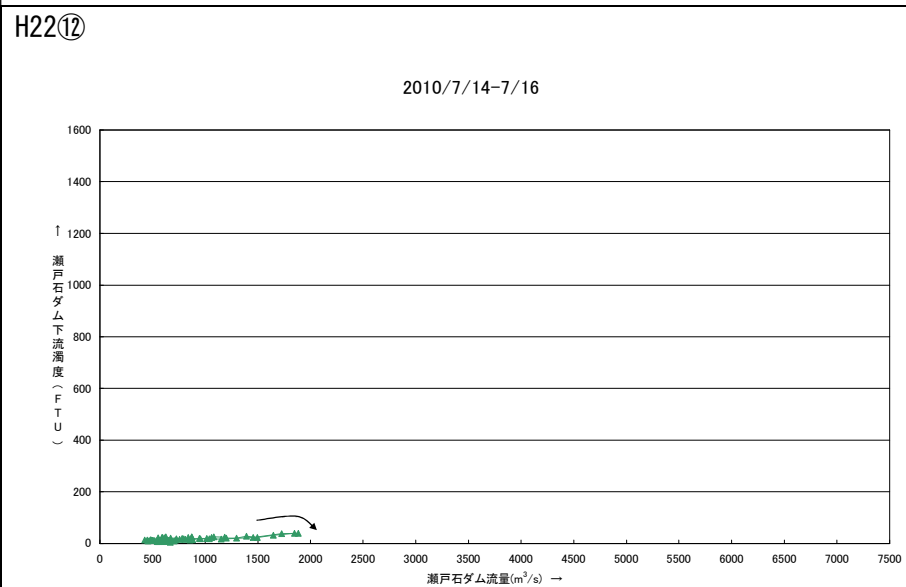
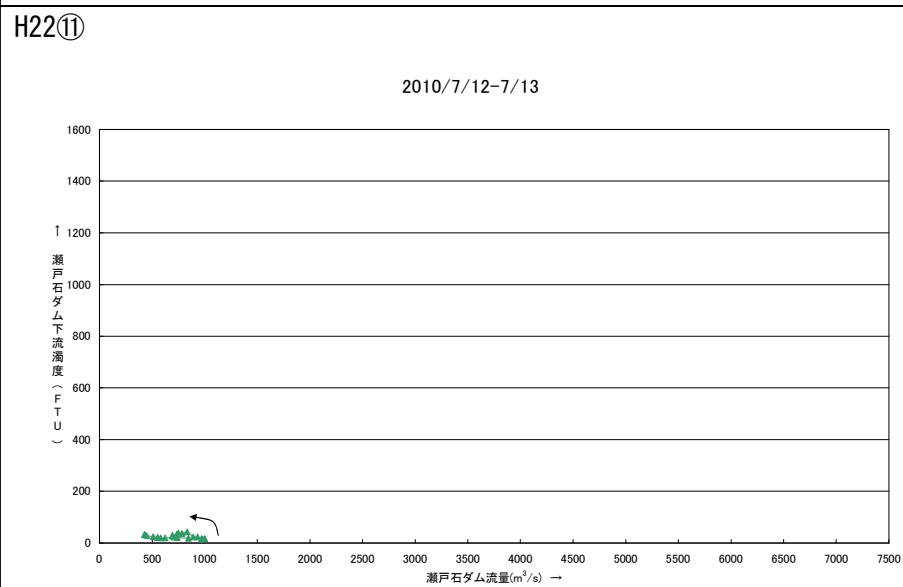
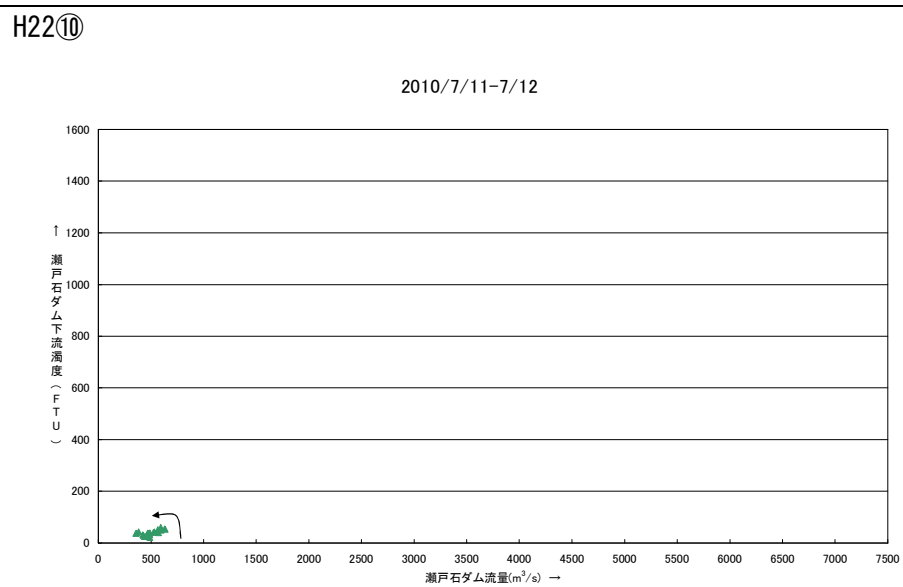
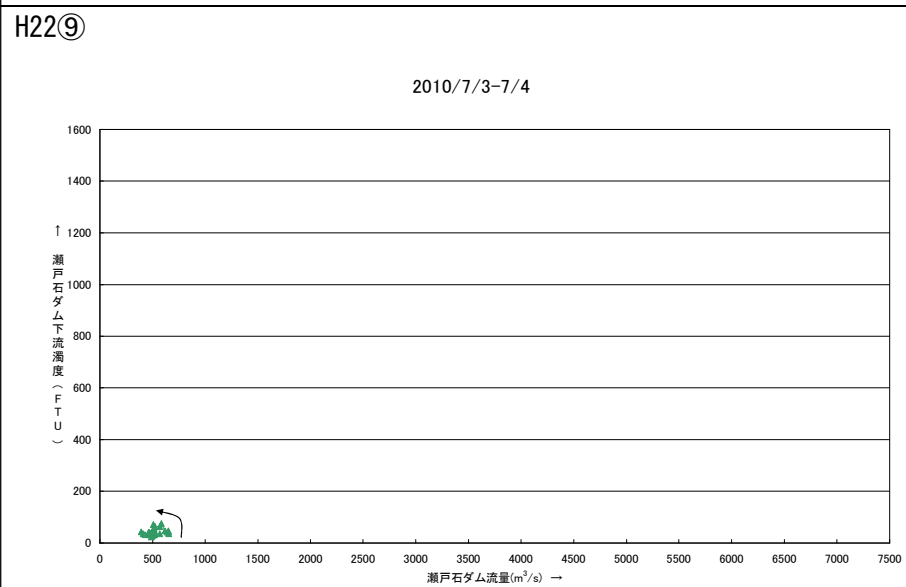
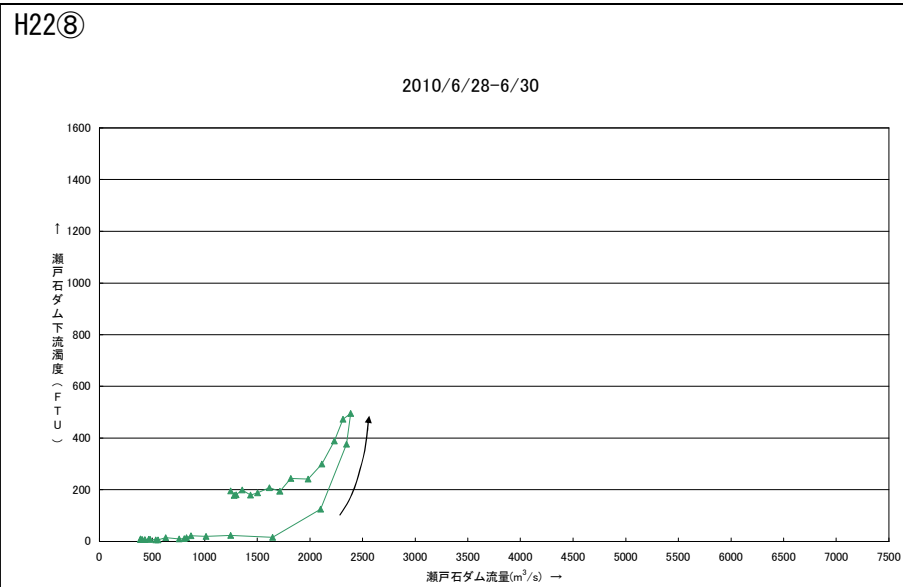
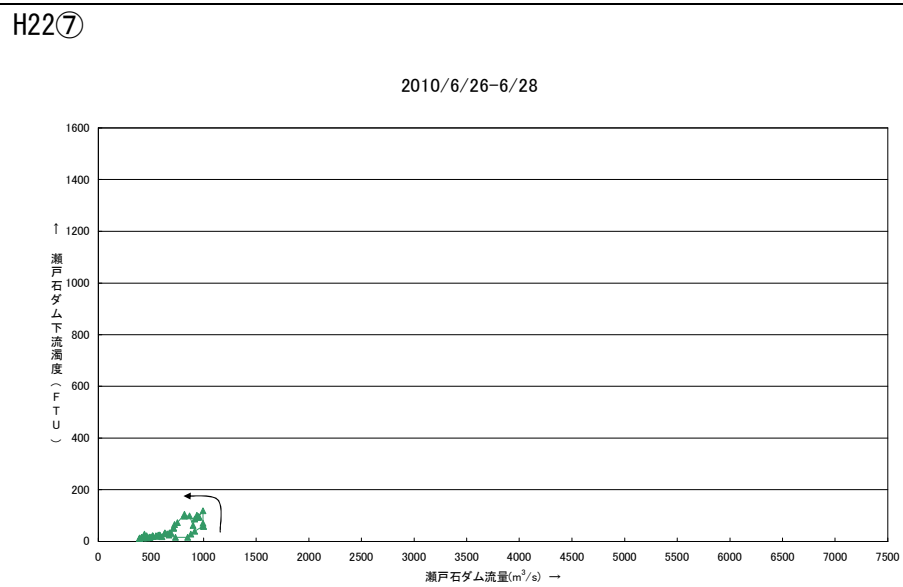
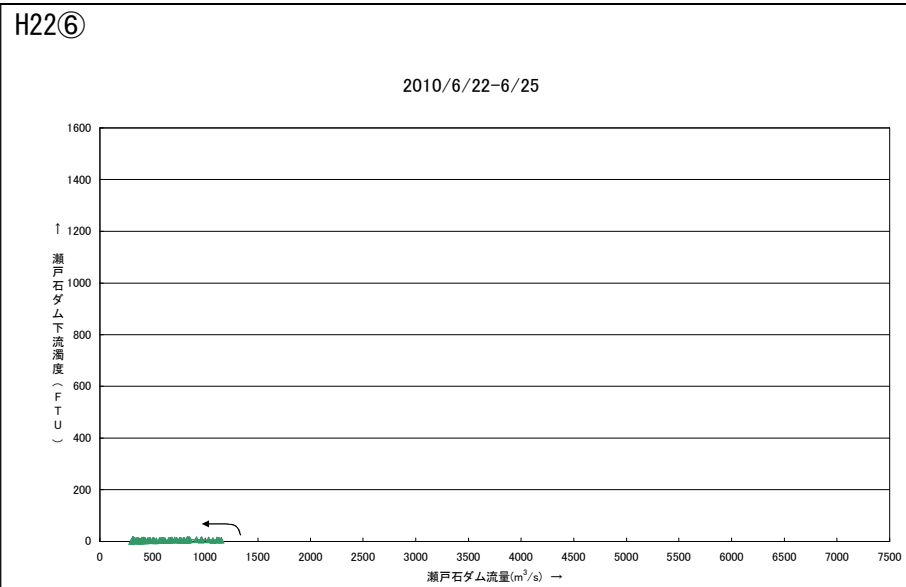
2010/5/23-5/26



H22⑤

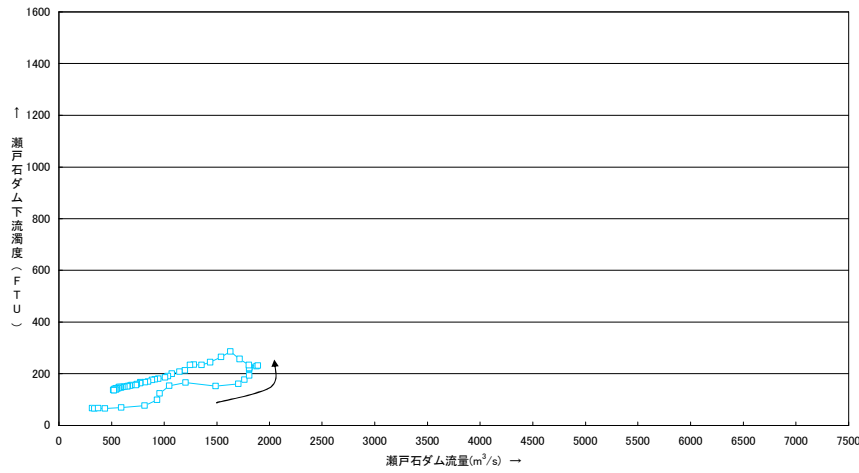
2010/6/20-6/22





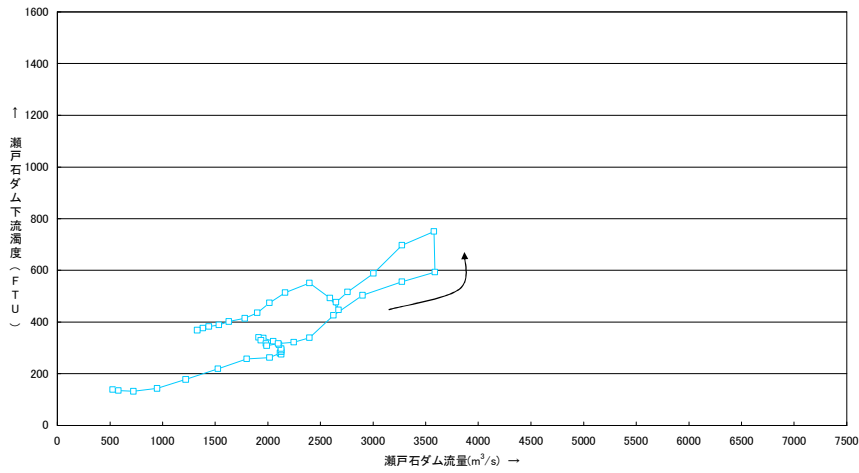
H23②

2011/6/15-6/18



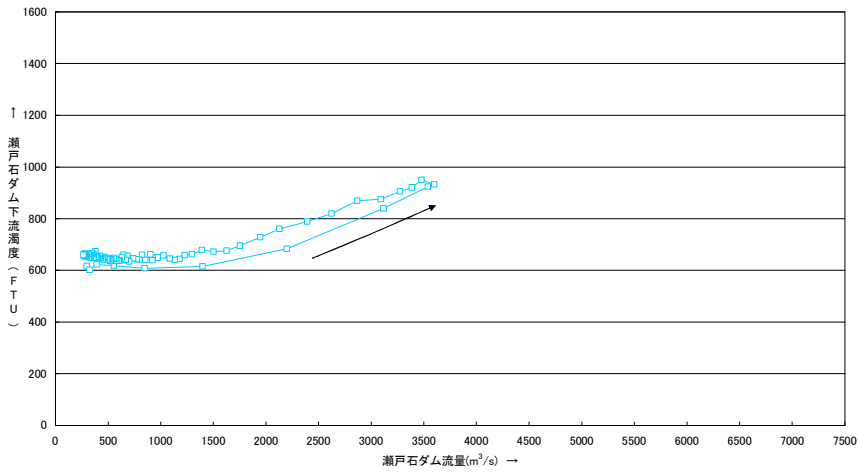
H23③

2011/6/18-6/20



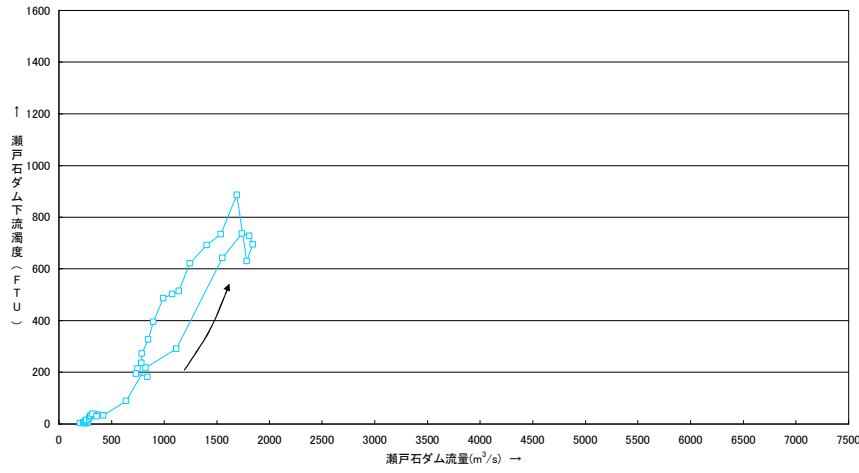
H23④

2011/7/6-7/10



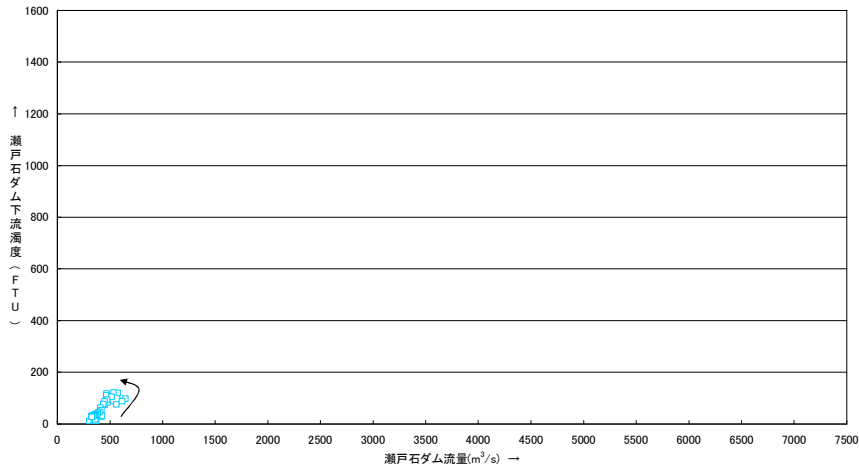
H23⑤

2011/8/14-8/16



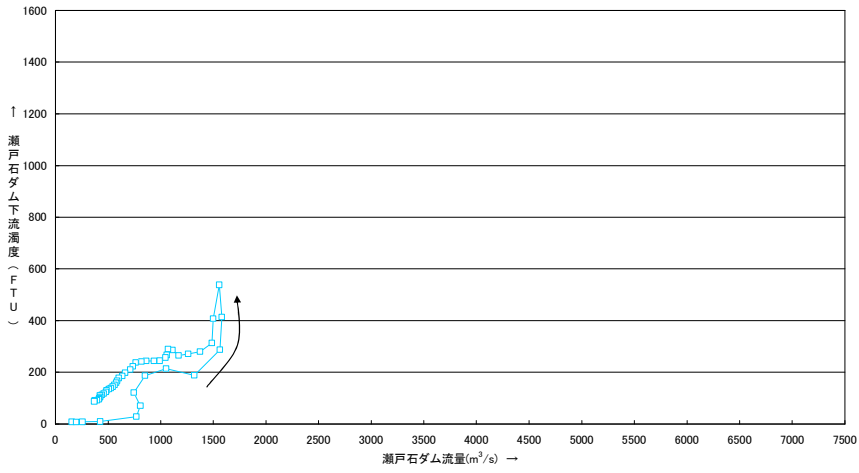
H23⑥

2011/8/21-8/23



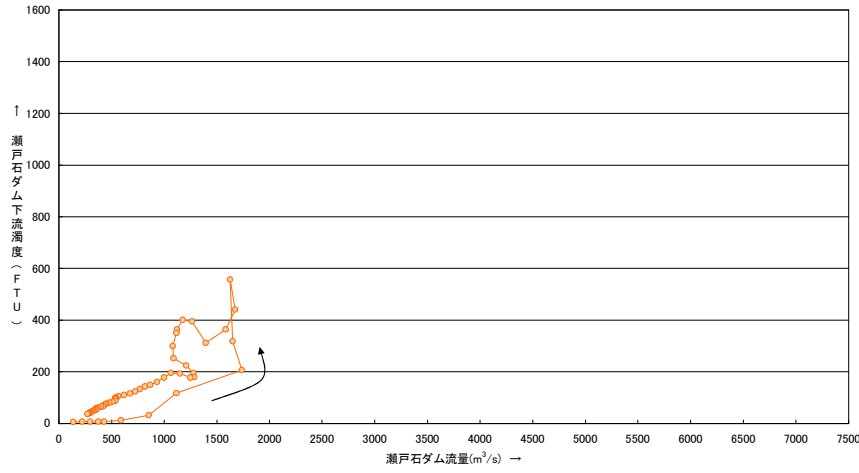
H23⑦

2011/9/20-9/22



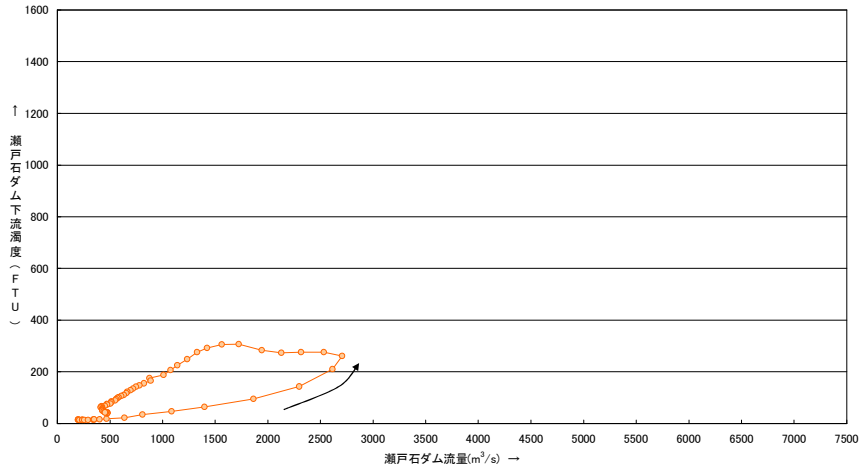
H24①

2012/6/15-6/18



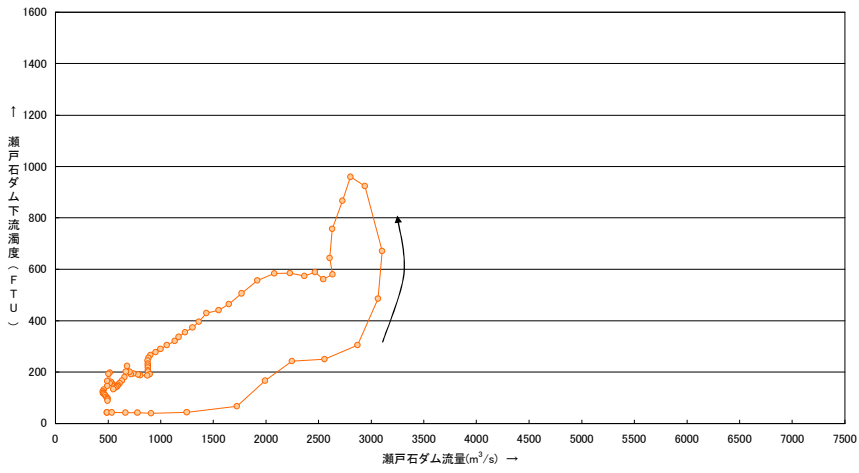
H24②

2012/6/21-6/23



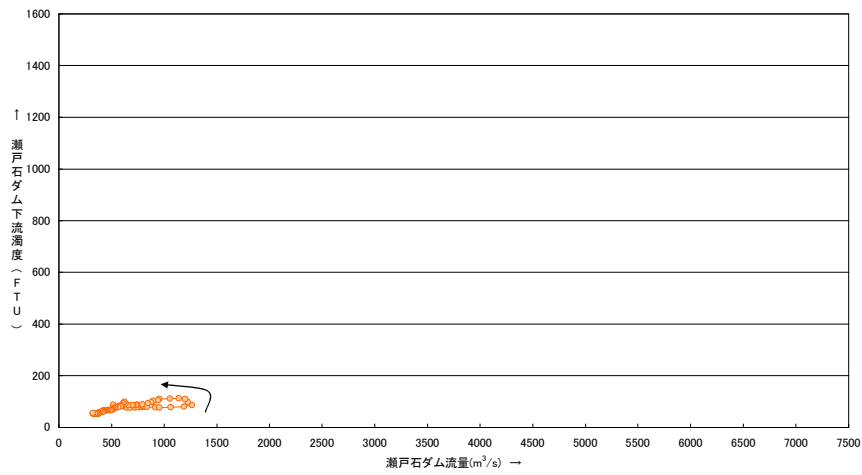
H24③

2012/6/24-6/27



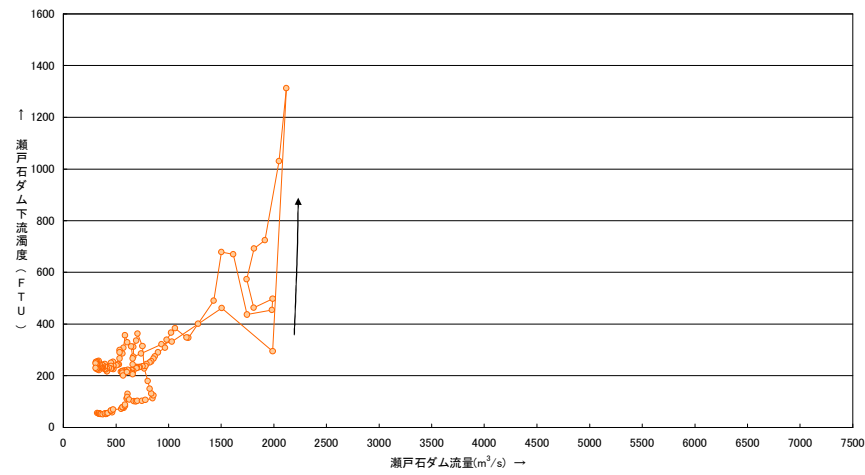
H24④

2012/6/27-6/30



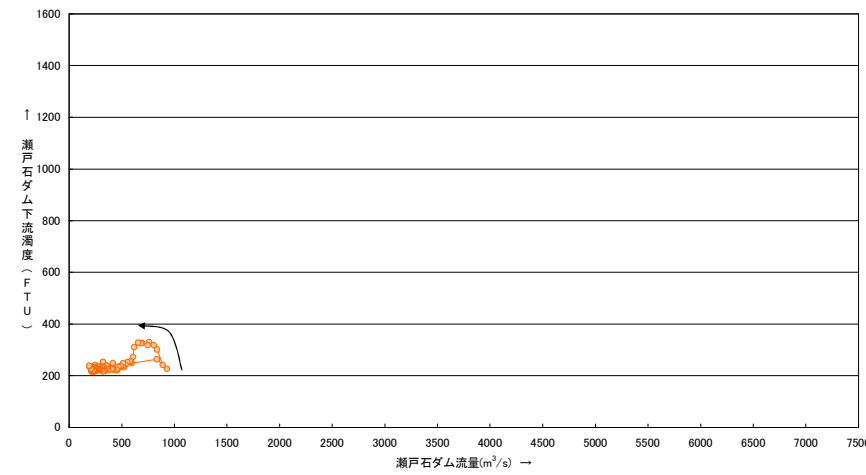
H24⑤

2012/6/30-7/7



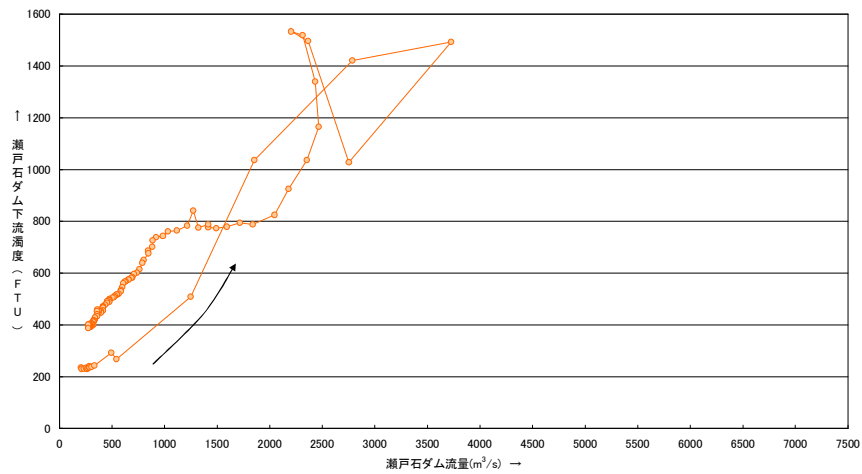
H24⑥

2012/7/7-7/11



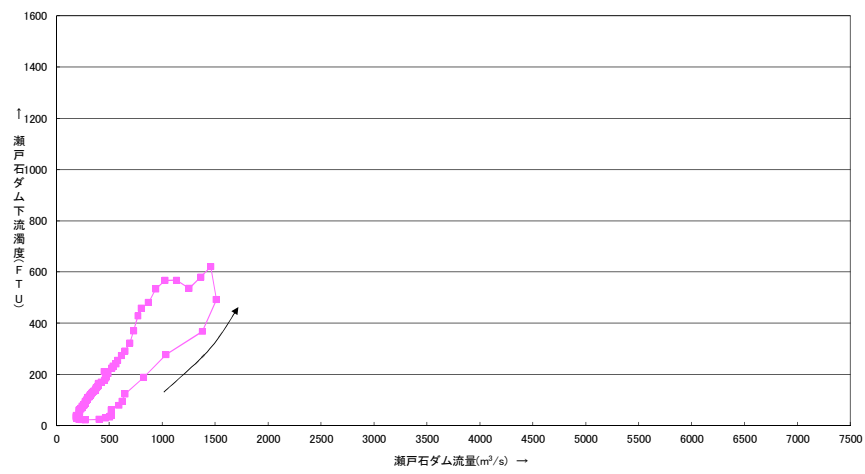
H24⑦

2012/7/11-7/16



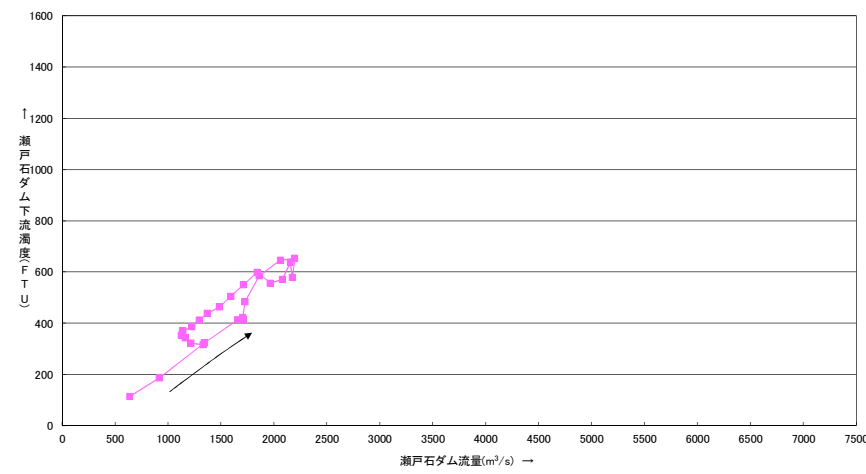
H25①

2013/6/25-6/29



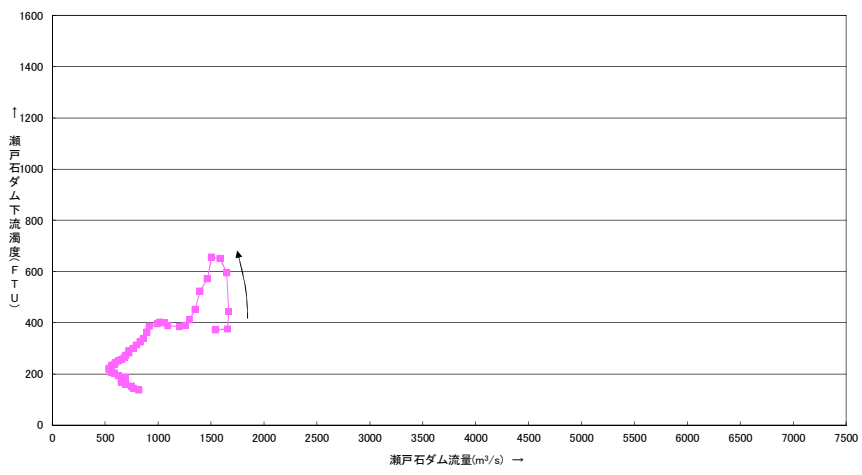
H25②

2013/9/1-9/2



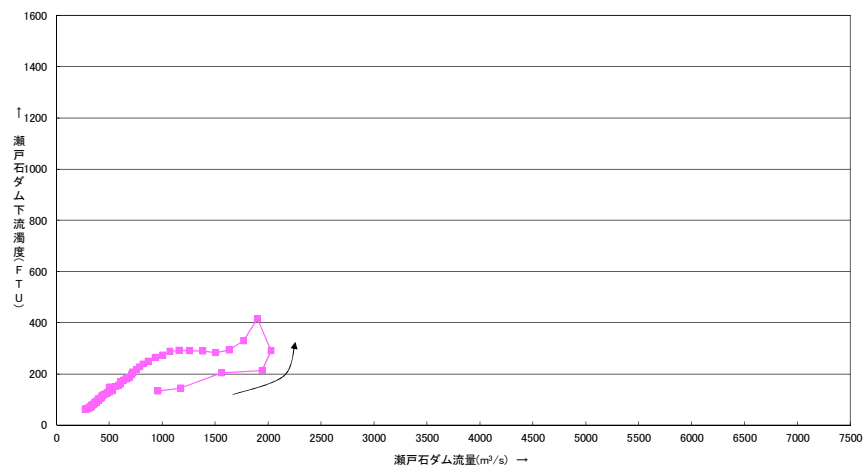
H25③

2013/9/2-9/4



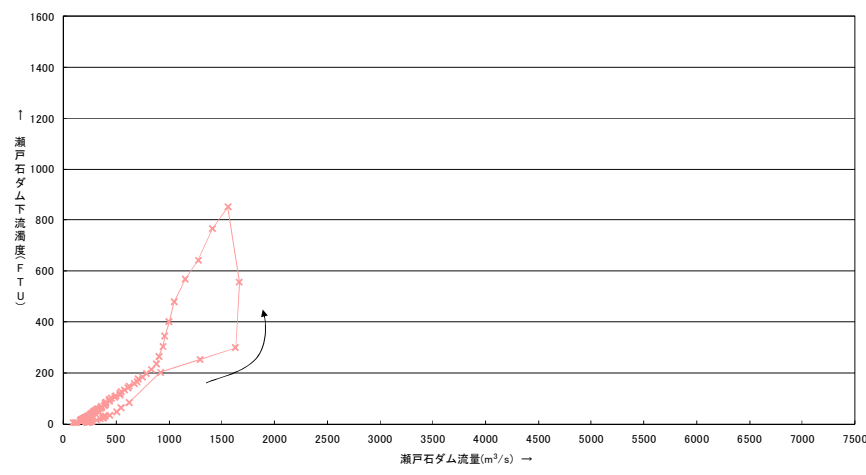
H25④

2013/9/4-9/6



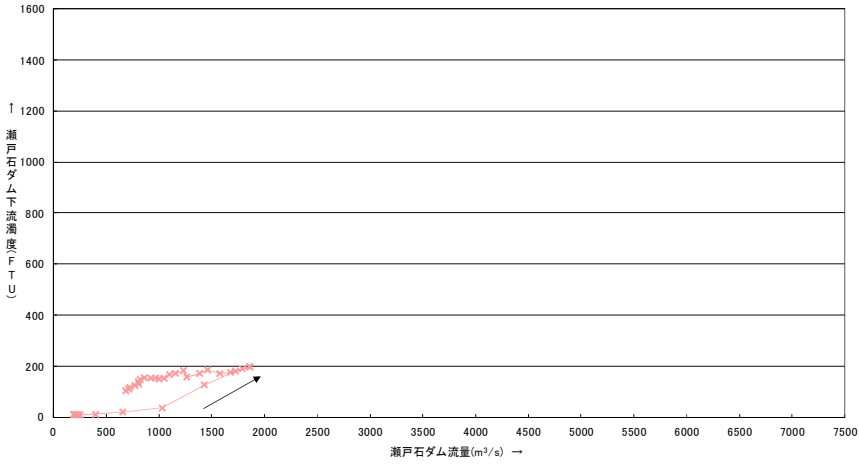
H26①

2014/6/21-6/26



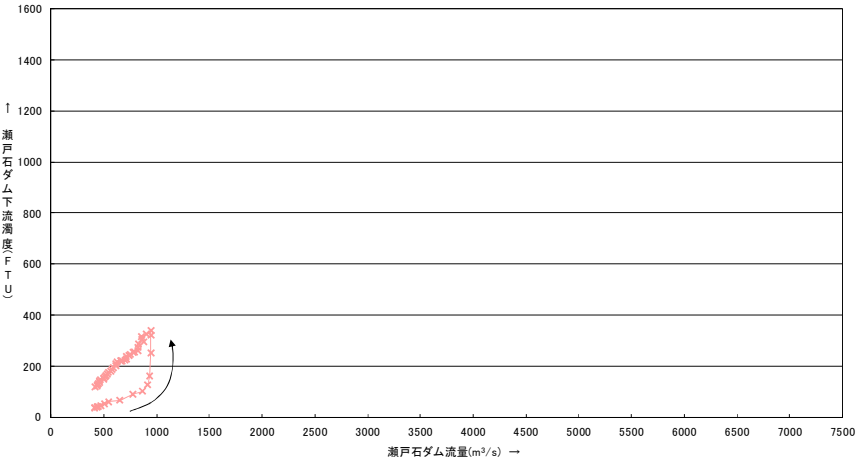
H26②

2014/7/6-7/7



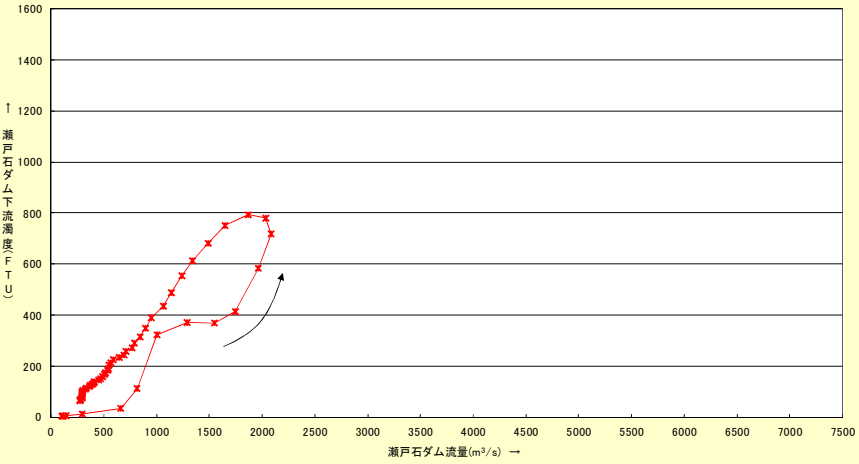
H26③

2014/7/9-7/11



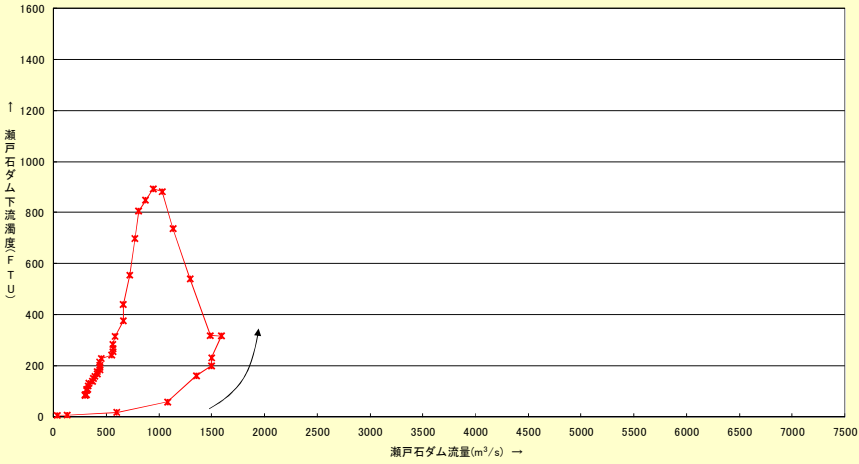
H27①

2015/6/3-6/5



H27②

2015/8/25-8/26



道の駅坂本

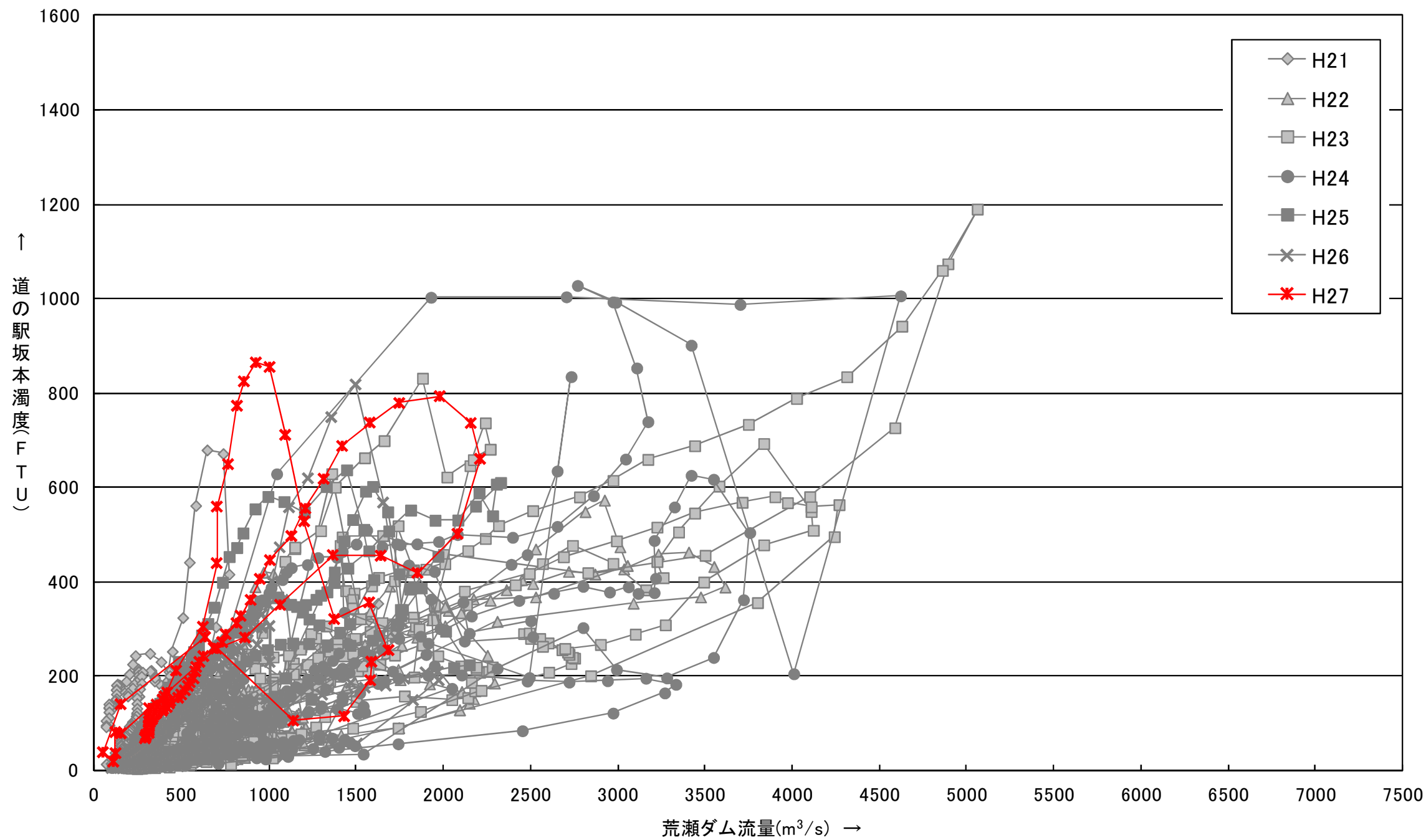
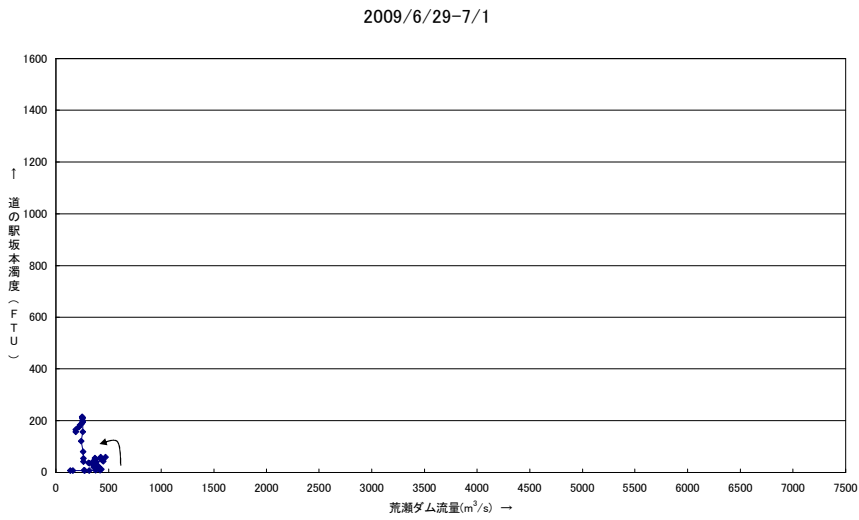


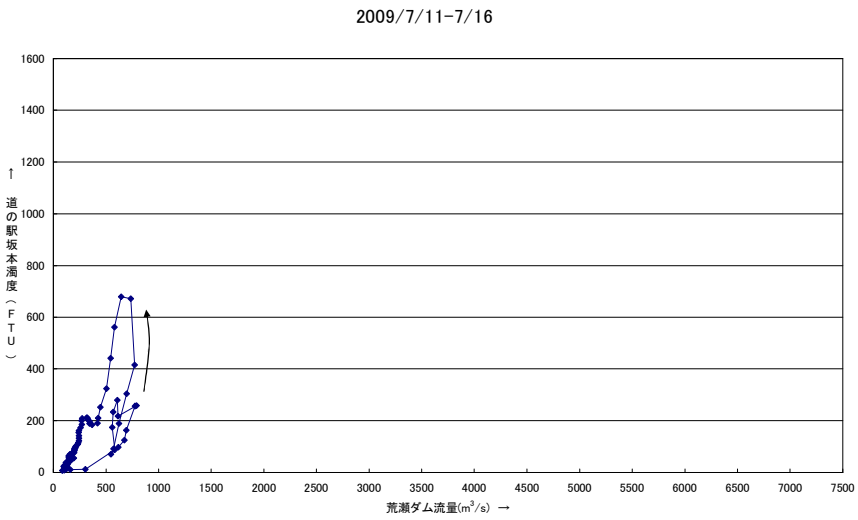
図 出水時の流量と濁度 (FTU) の時間的な変化 (道の駅坂本)

道の駅坂本

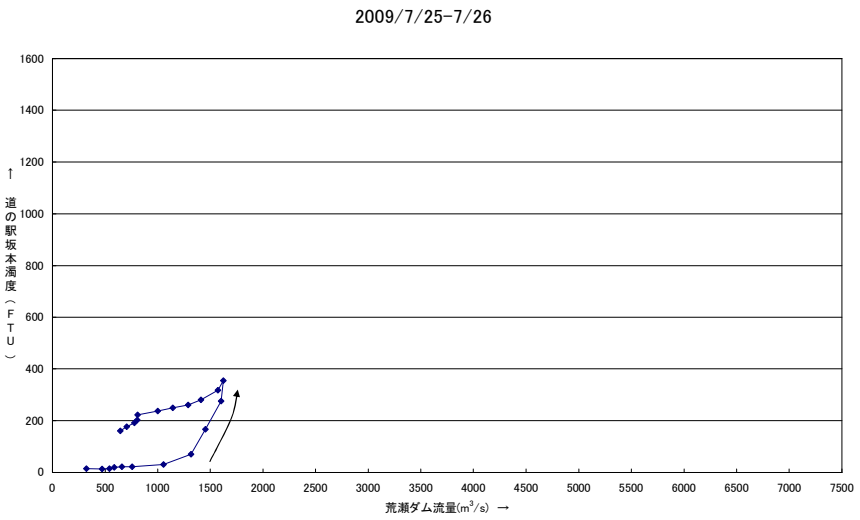
H21①



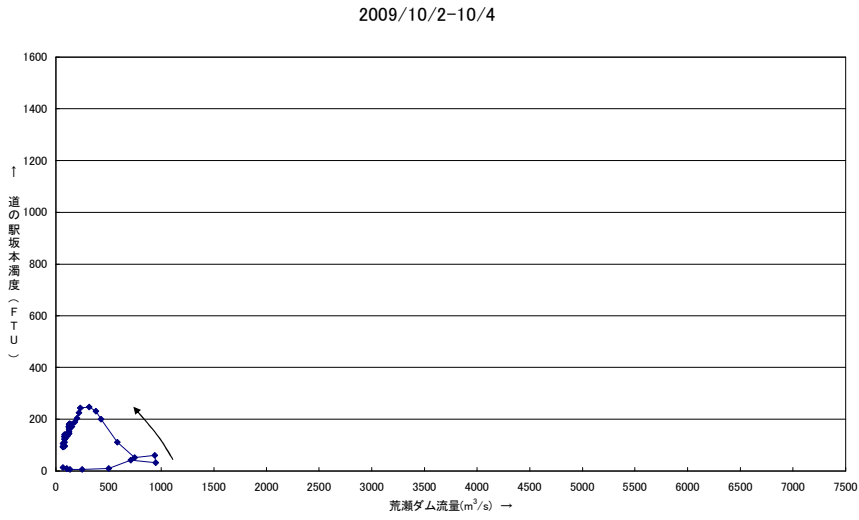
H21②



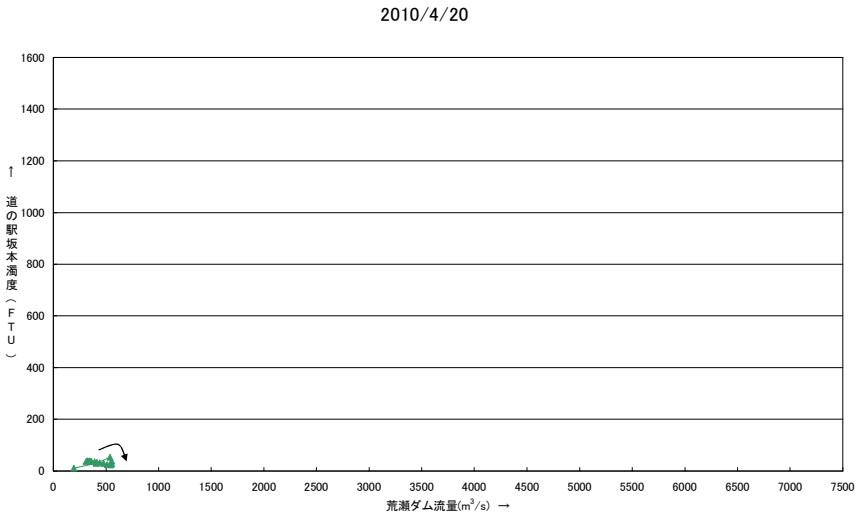
H21③



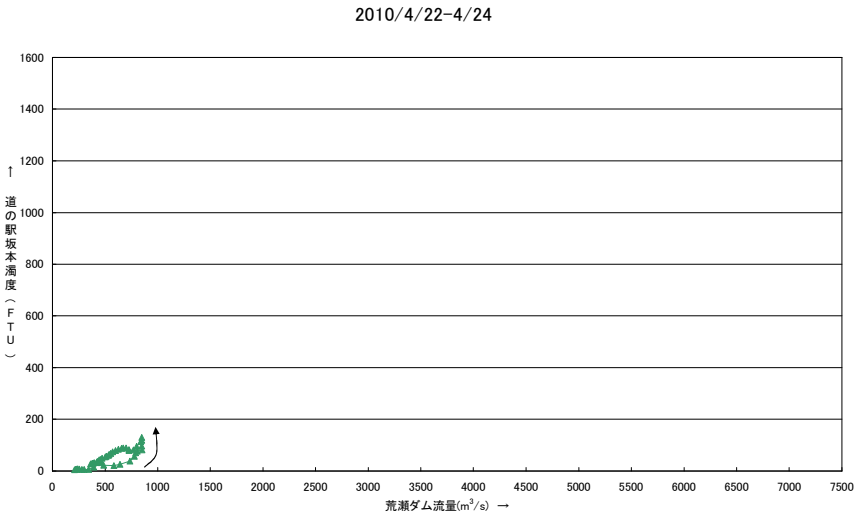
H21④



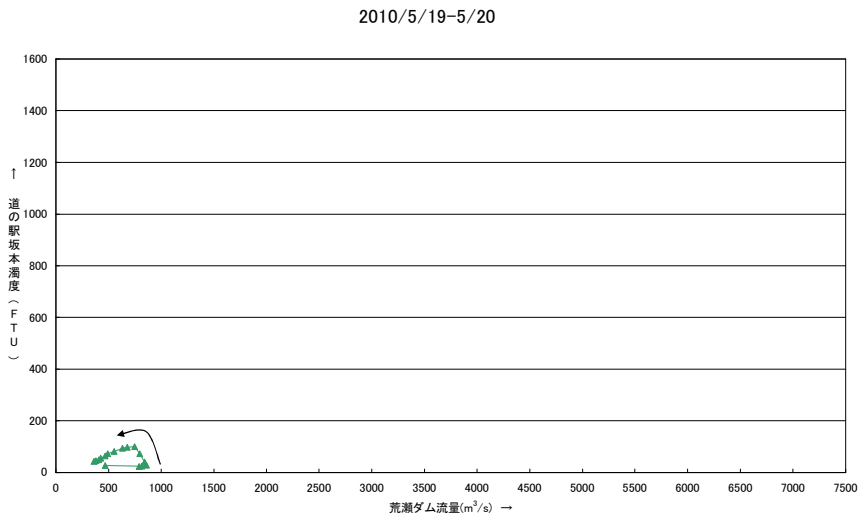
H22①



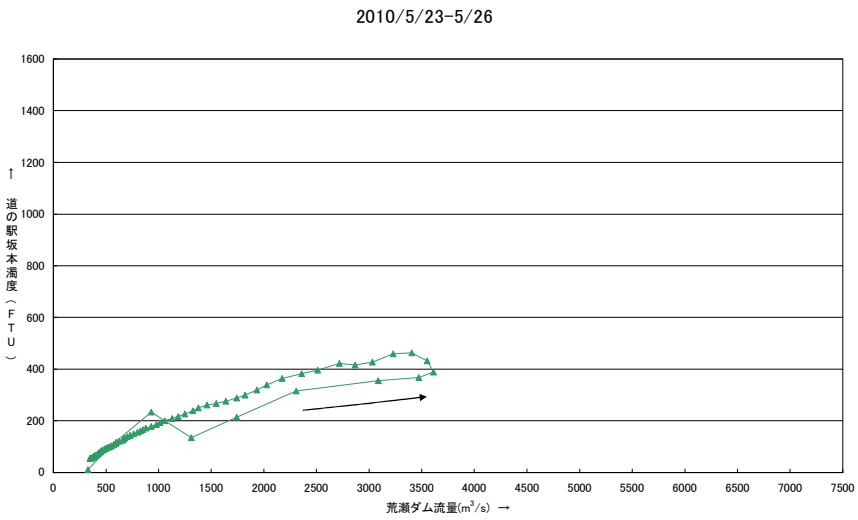
H22②



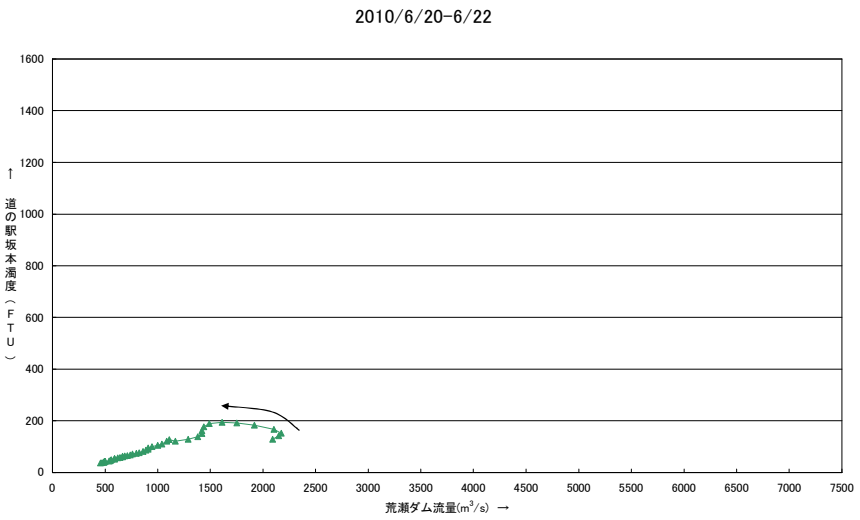
H22③

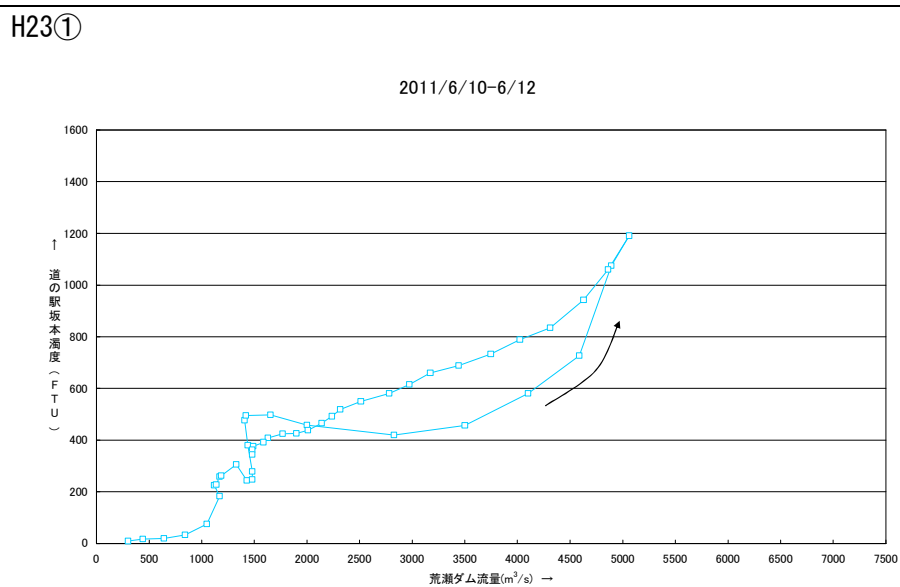
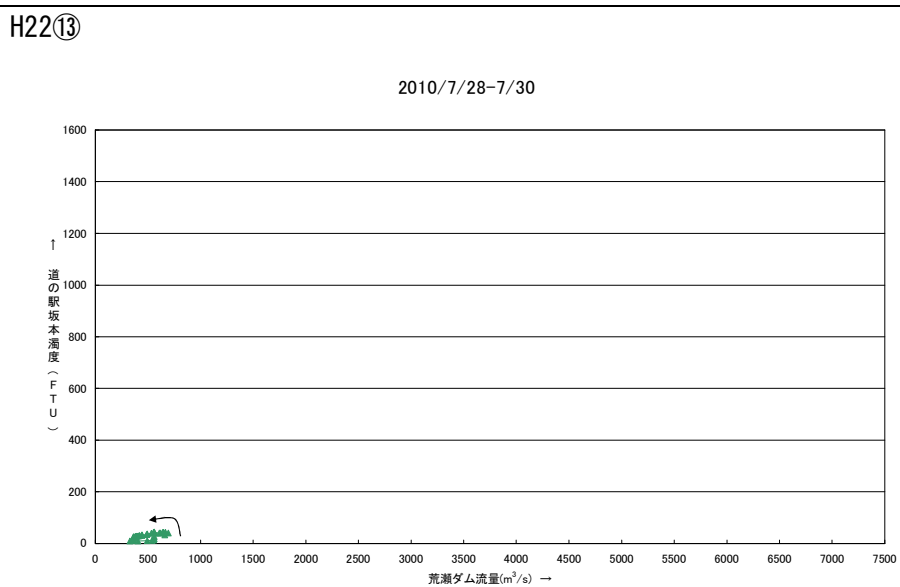
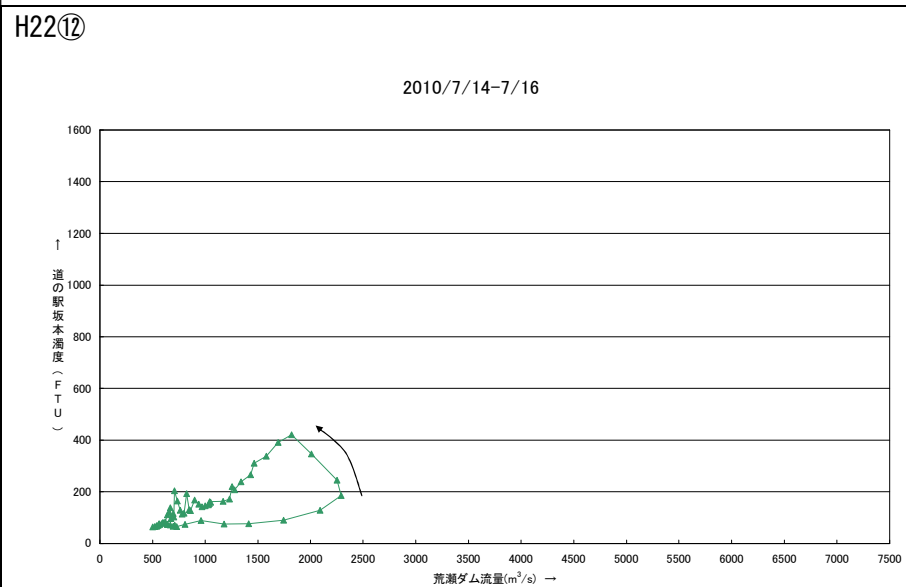
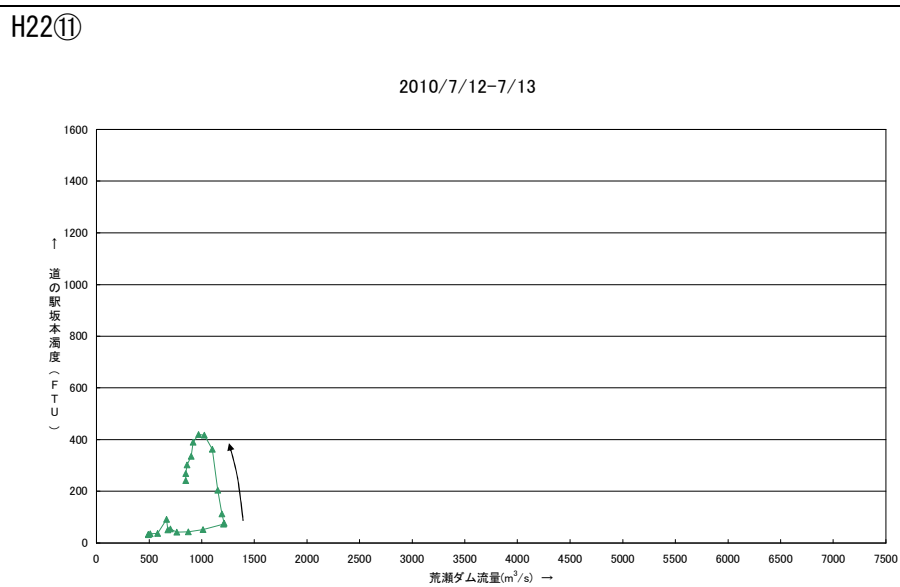
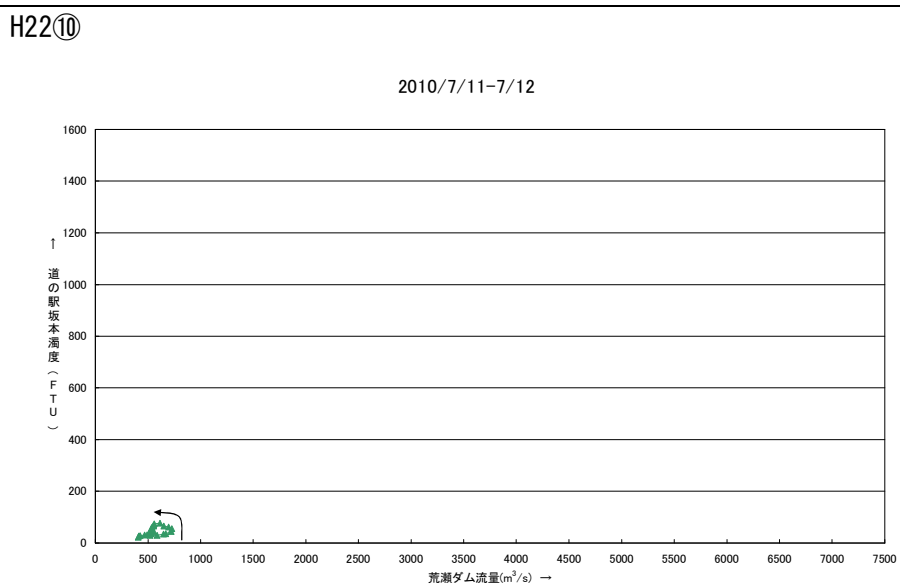
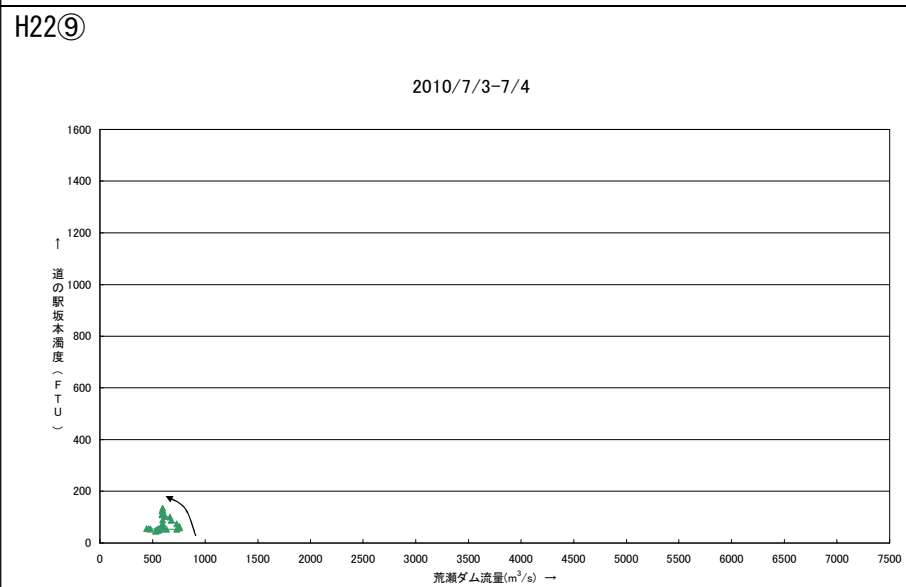
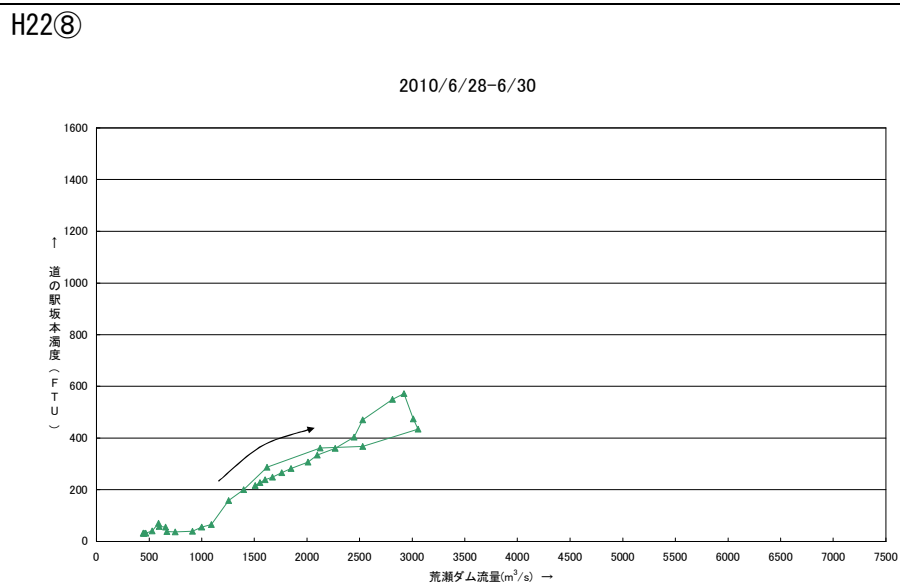
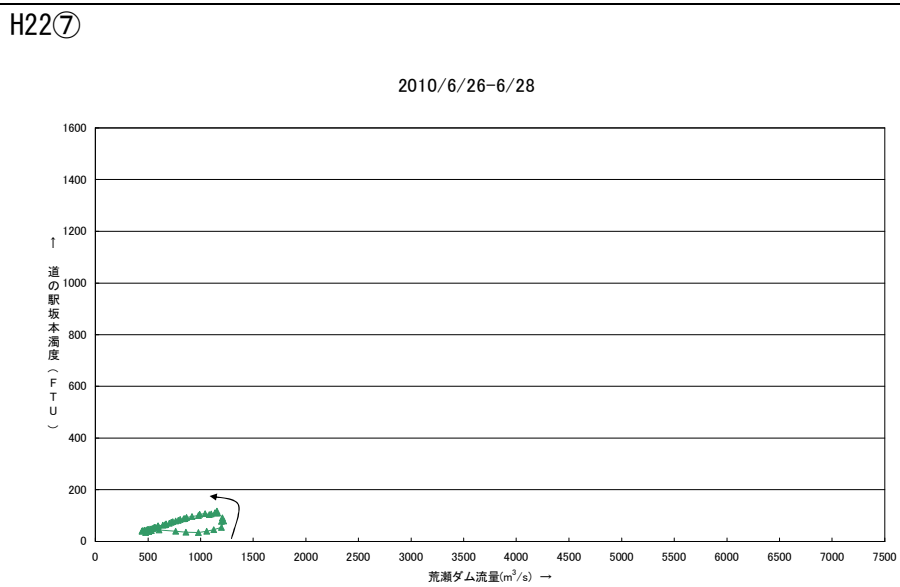
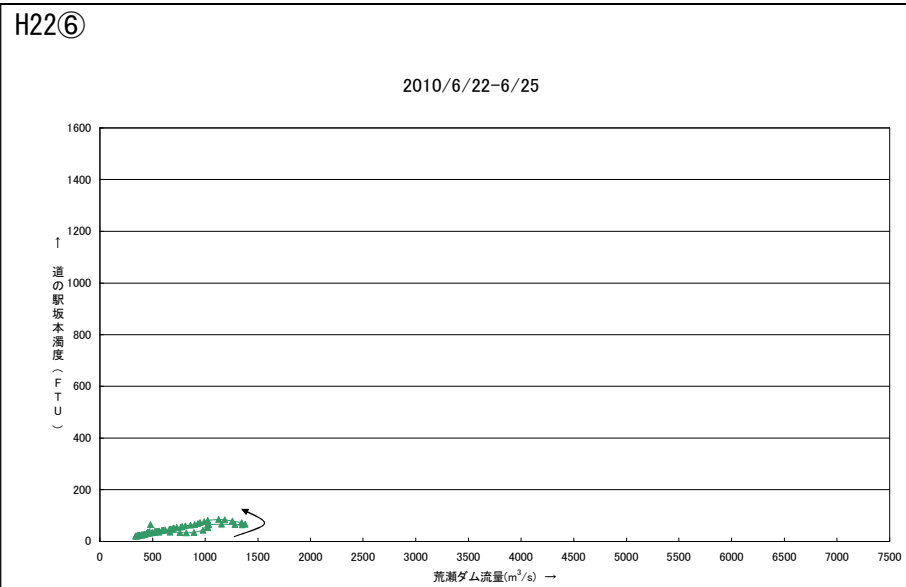


H22④

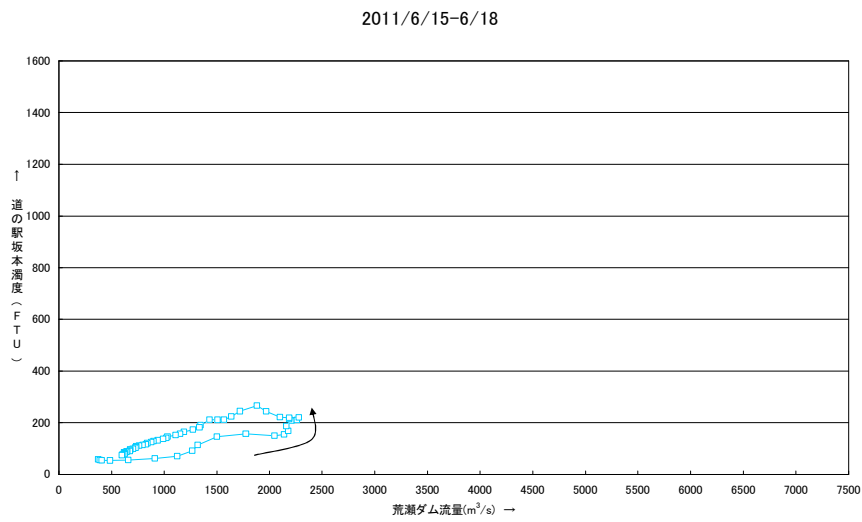


H22⑤

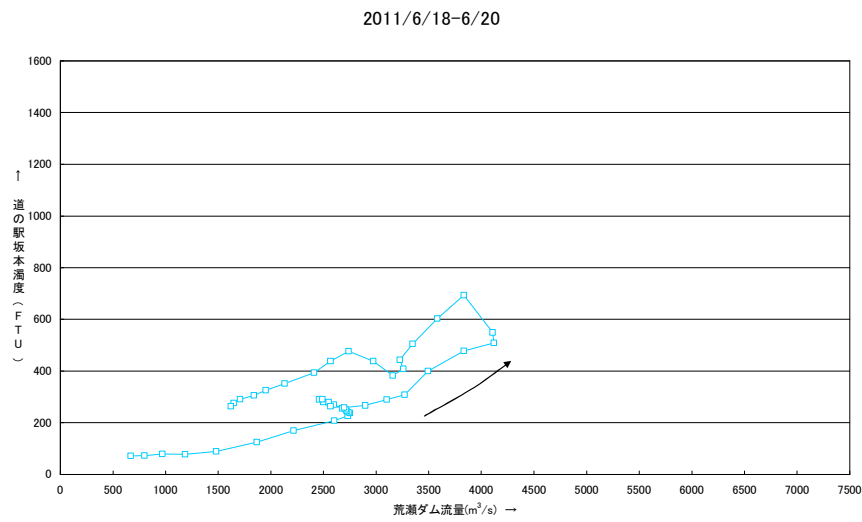




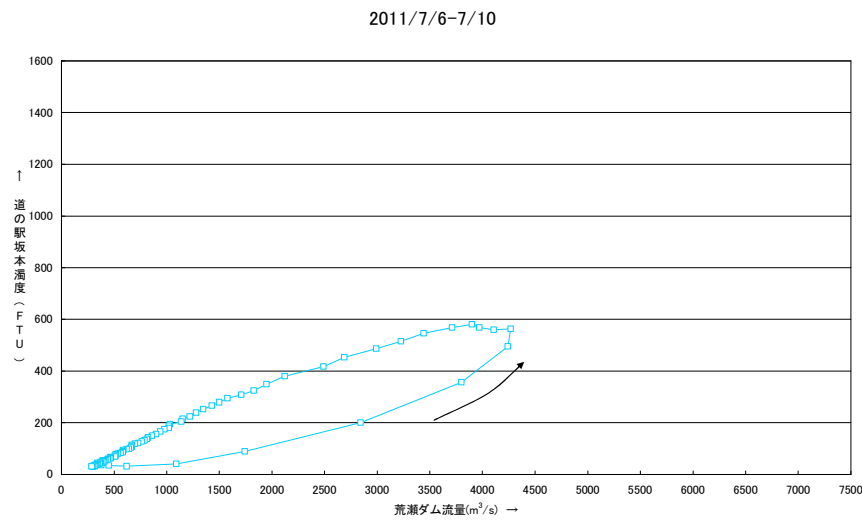
H23②



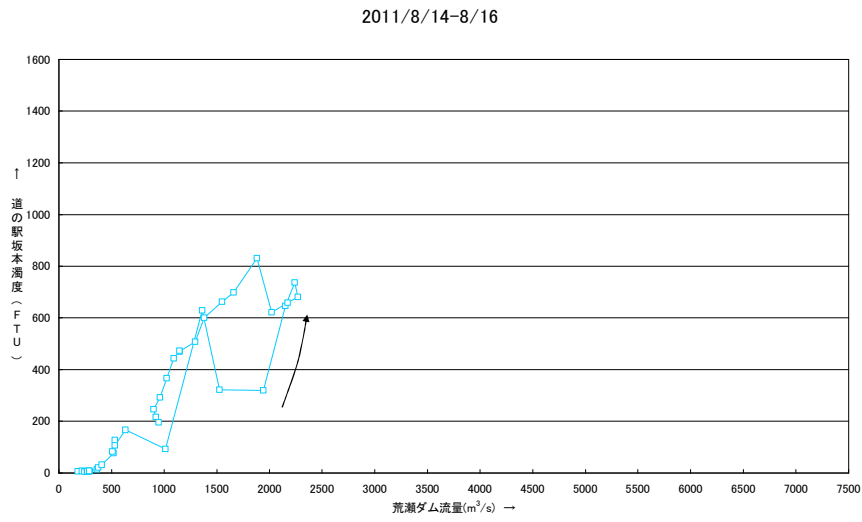
H23③



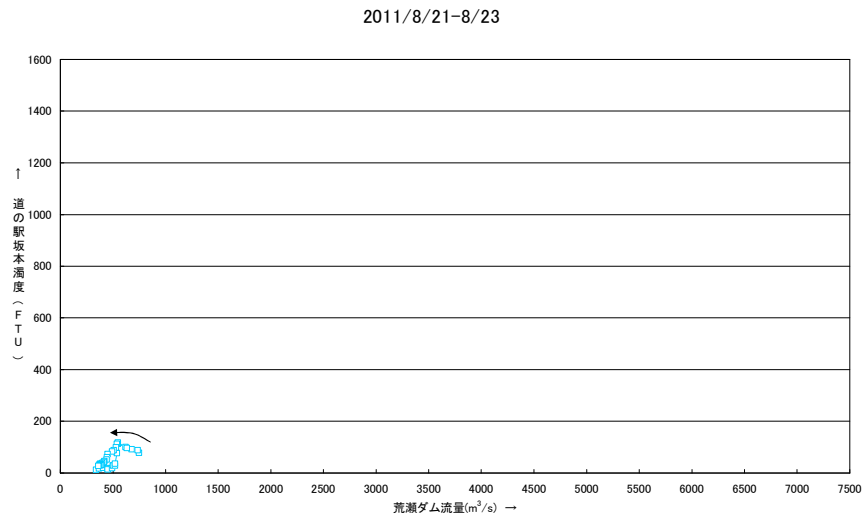
H23④



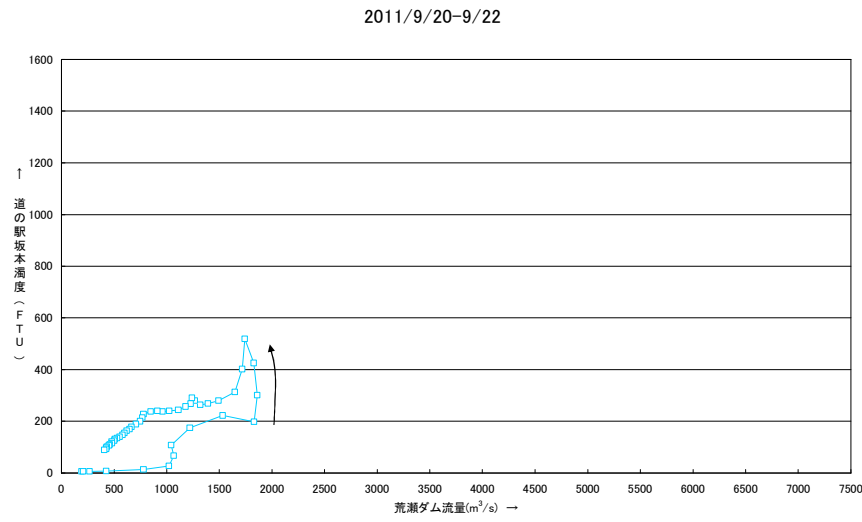
H23⑤



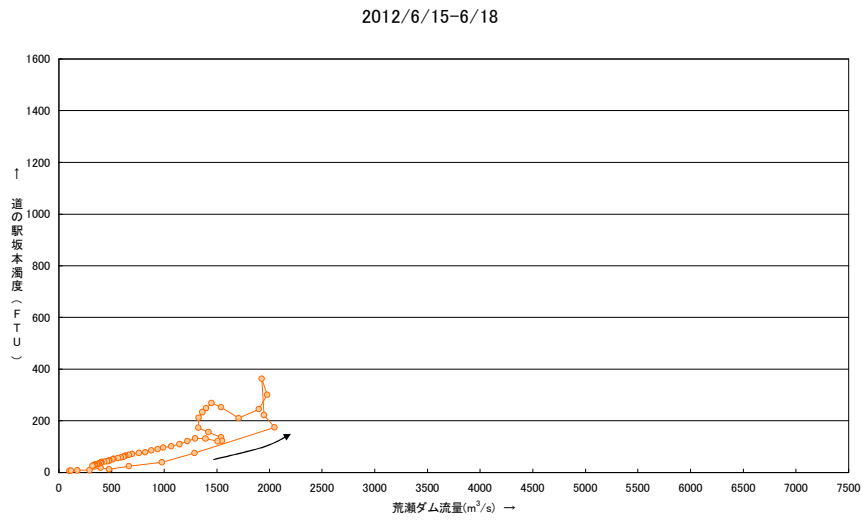
H23⑥



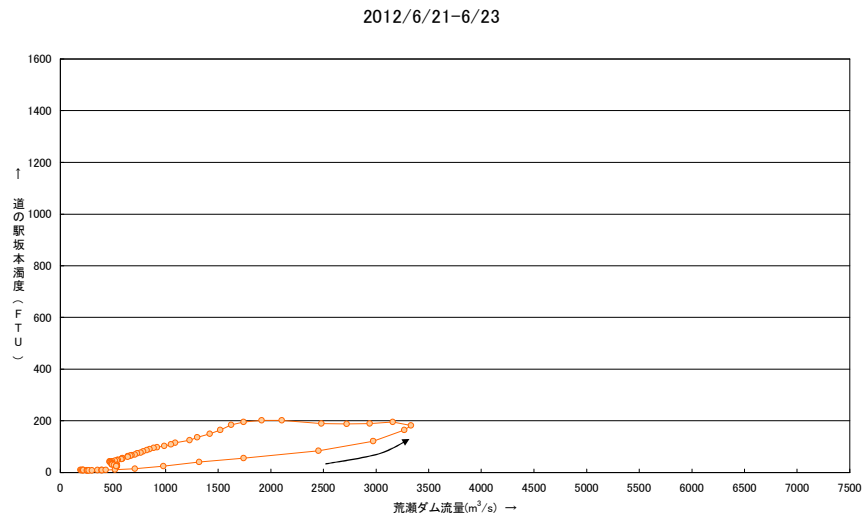
H23⑦



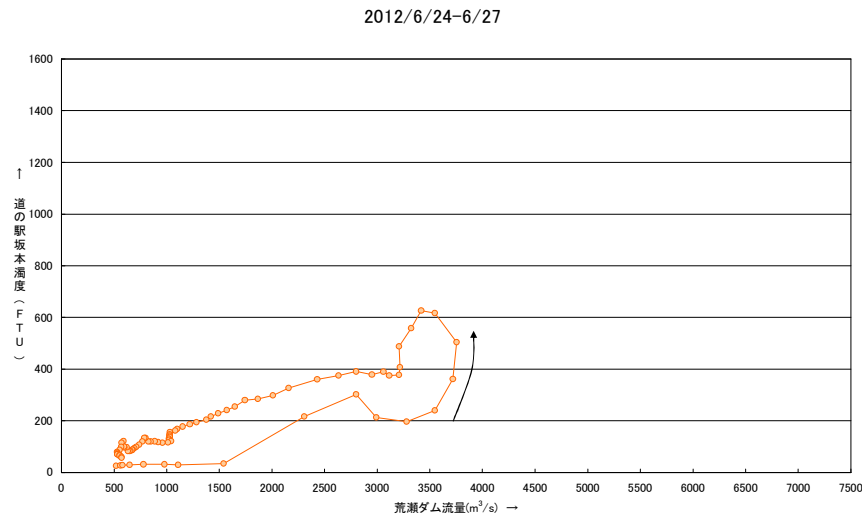
H24①



H24②

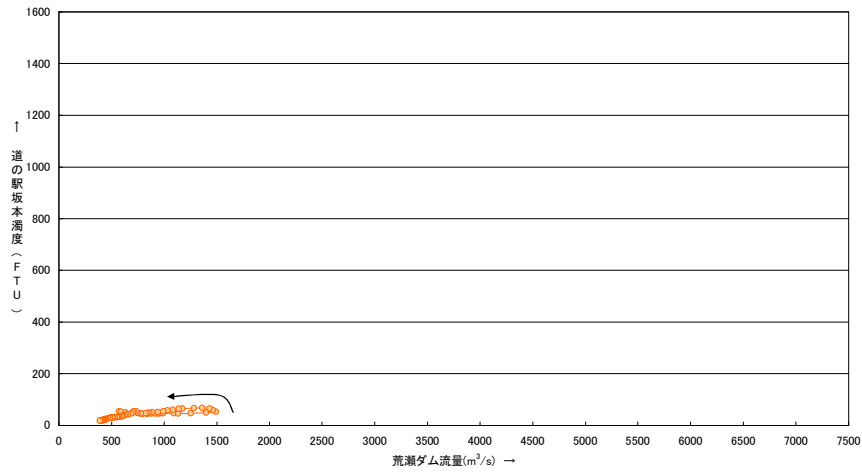


H24③



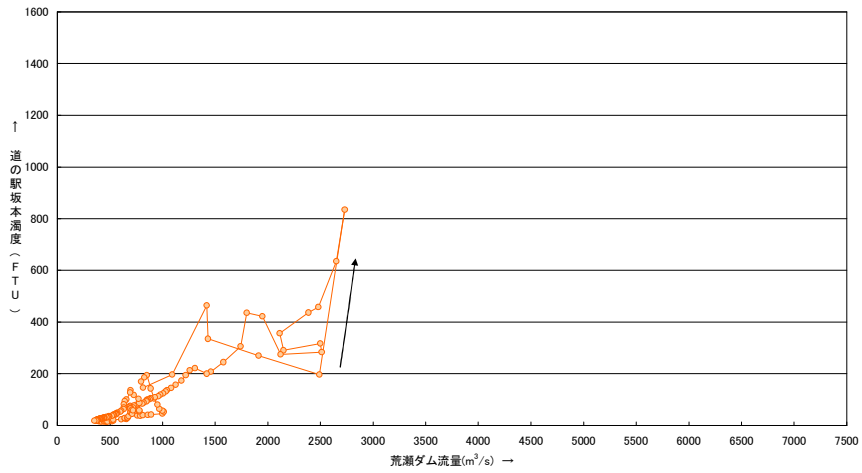
H24④

2012/6/27-6/30



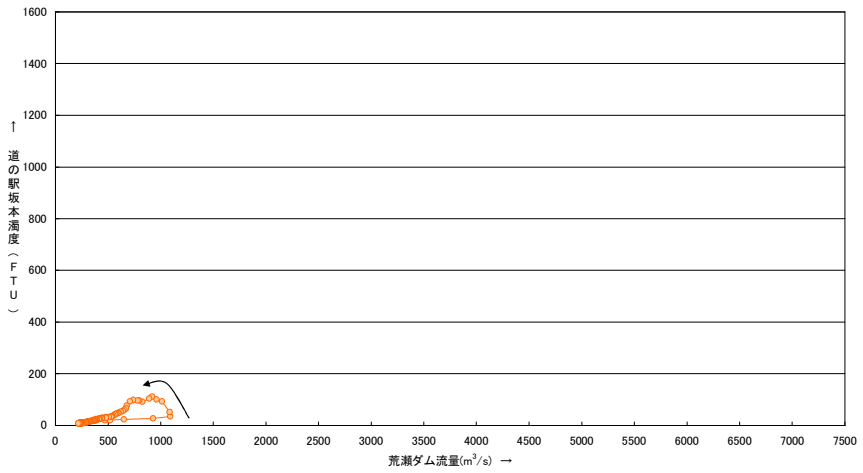
H24⑤

2012/6/30-7/7



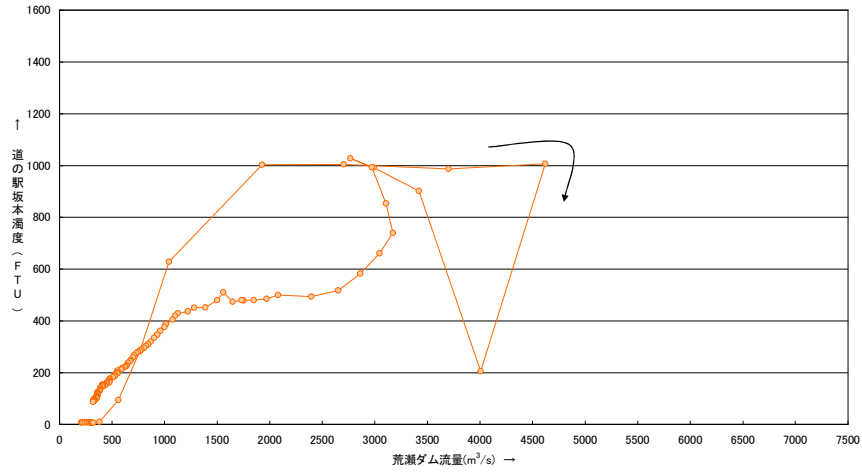
H24⑥

2012/7/7-7/11



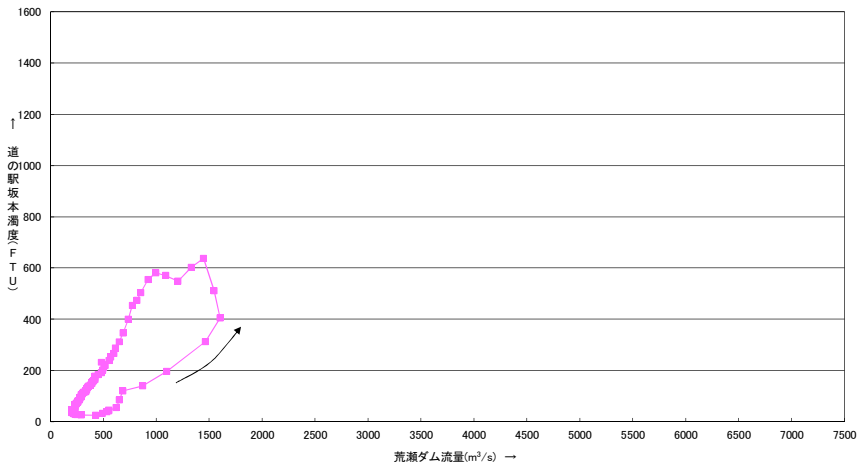
H24⑦

2012/7/11-7/16



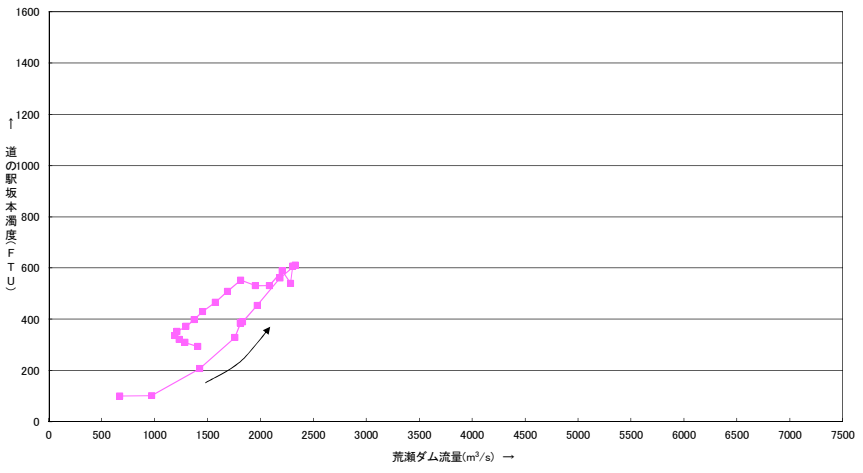
H25①

2013/6/25-6/29



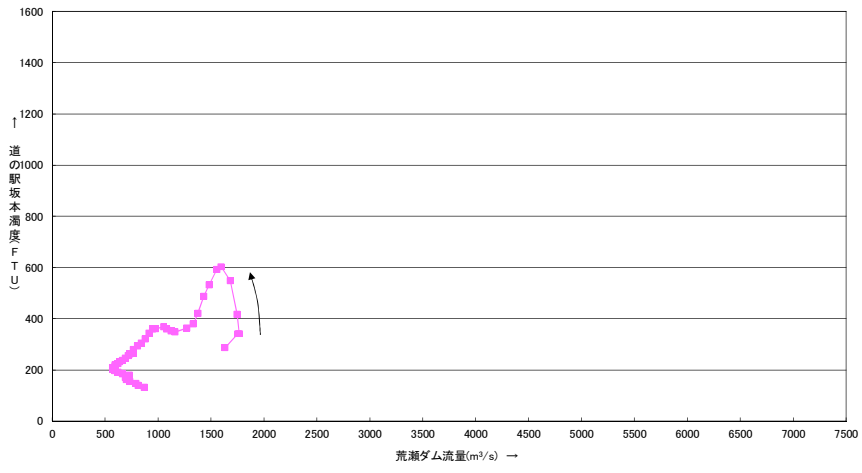
H25②

2013/9/1-9/2



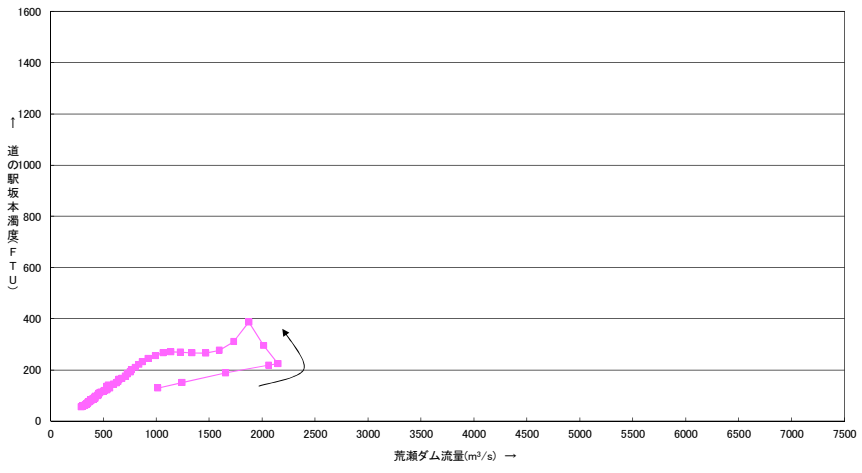
H25③

2013/9/2-9/4



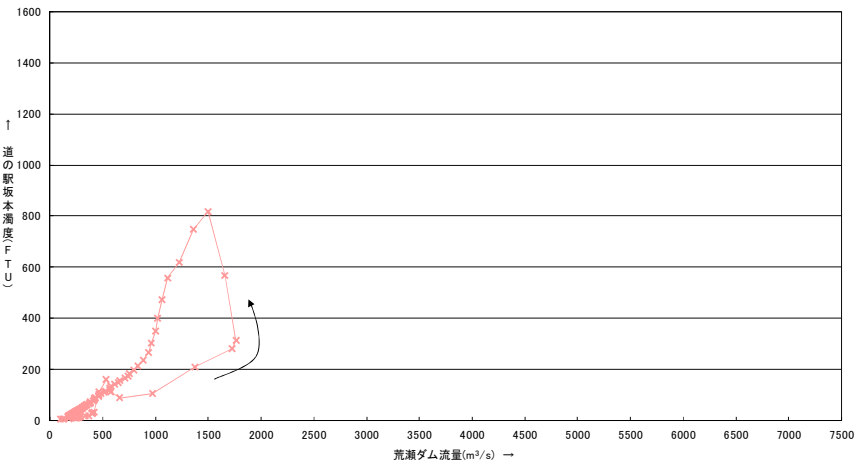
H25④

2013/9/4-9/6



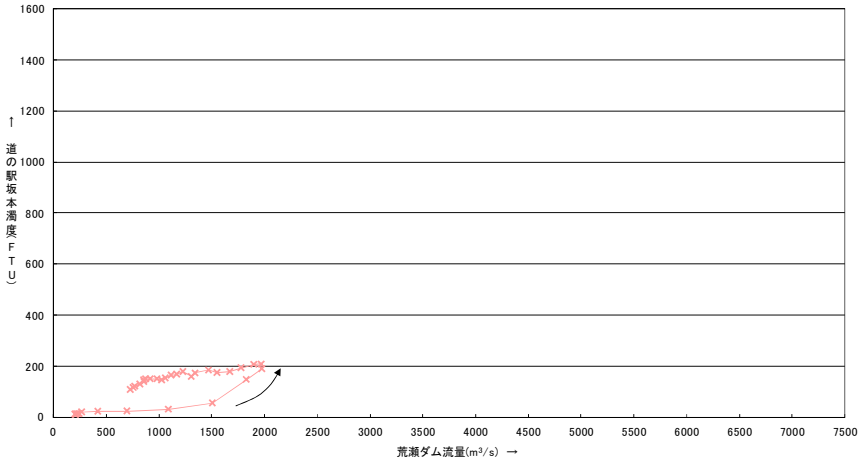
H26①

2014/6/21-6/26



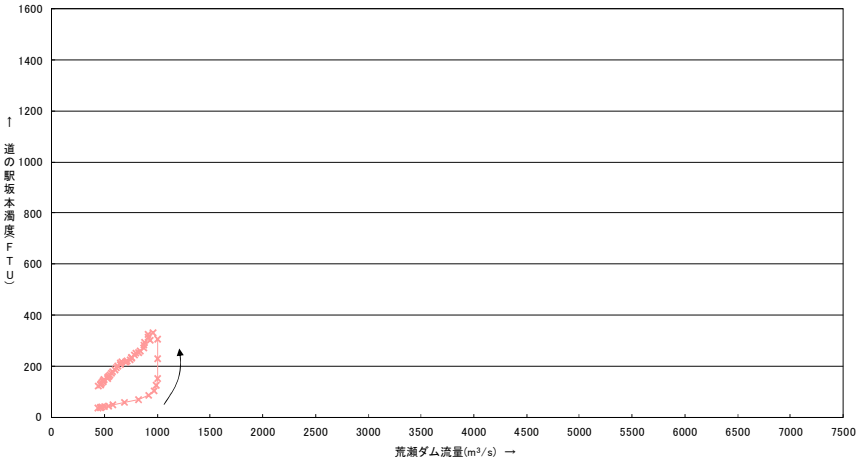
H26②

2014/7/6-7/7



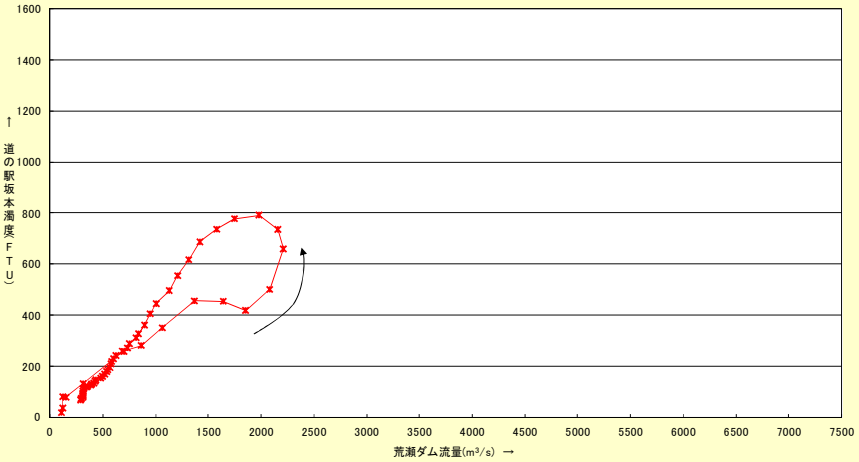
H26③

2014/7/9-7/11



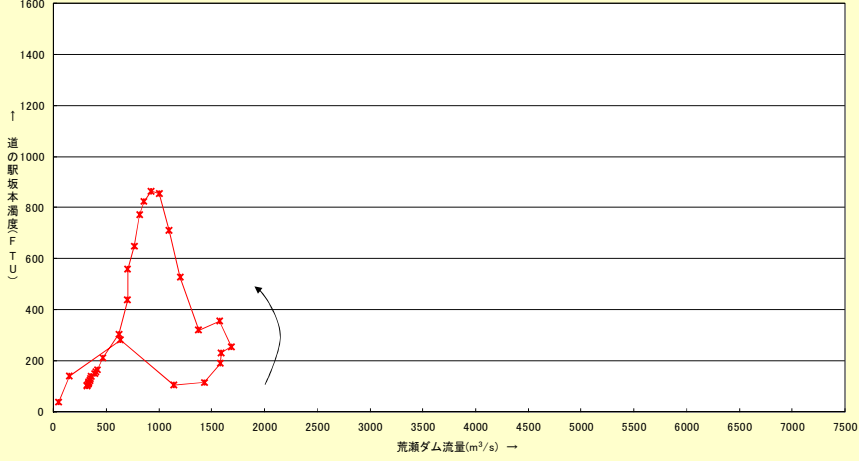
H27①

2015/6/3-6/5



H27②

2015/8/25-8/26



横 石

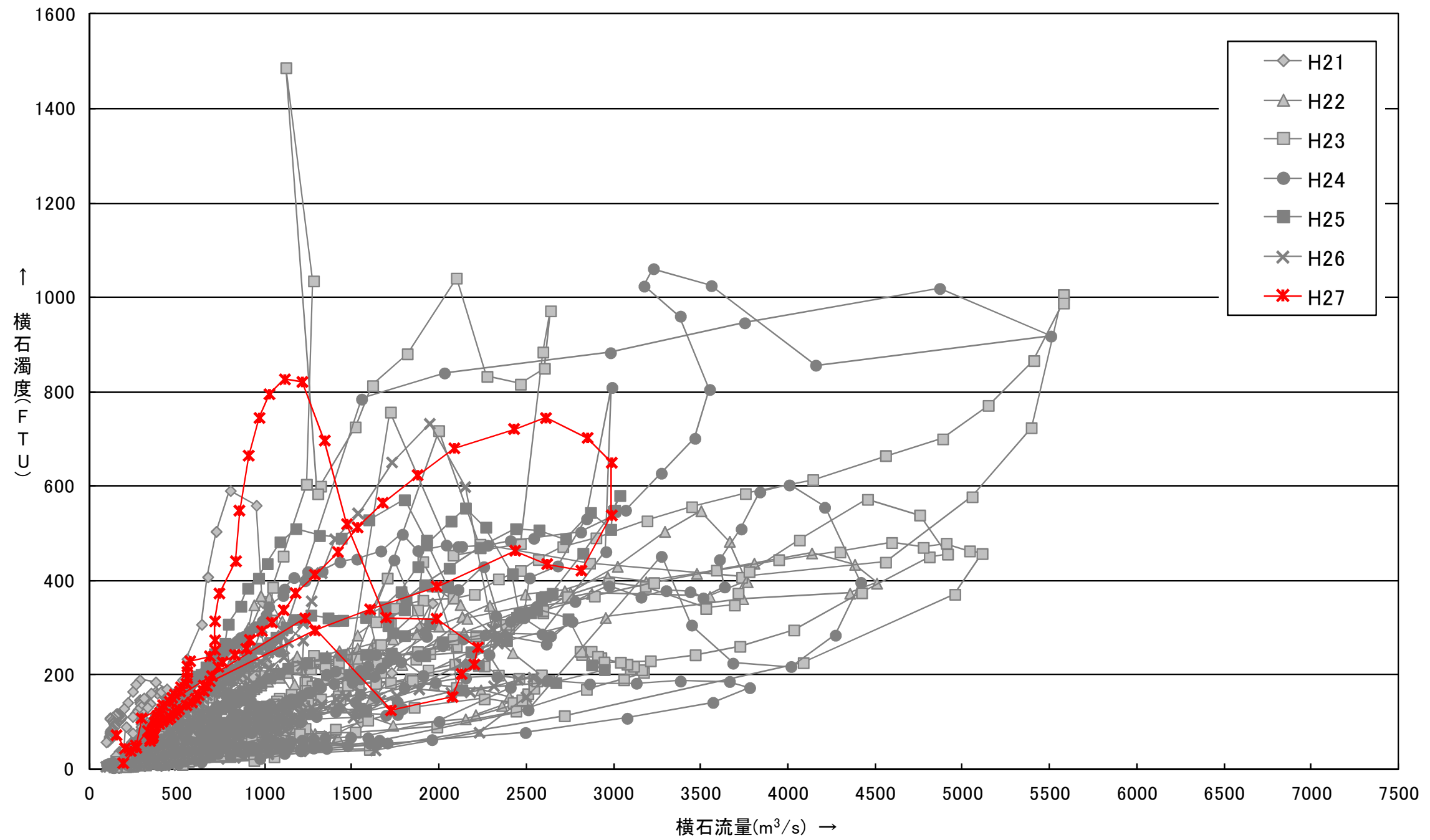
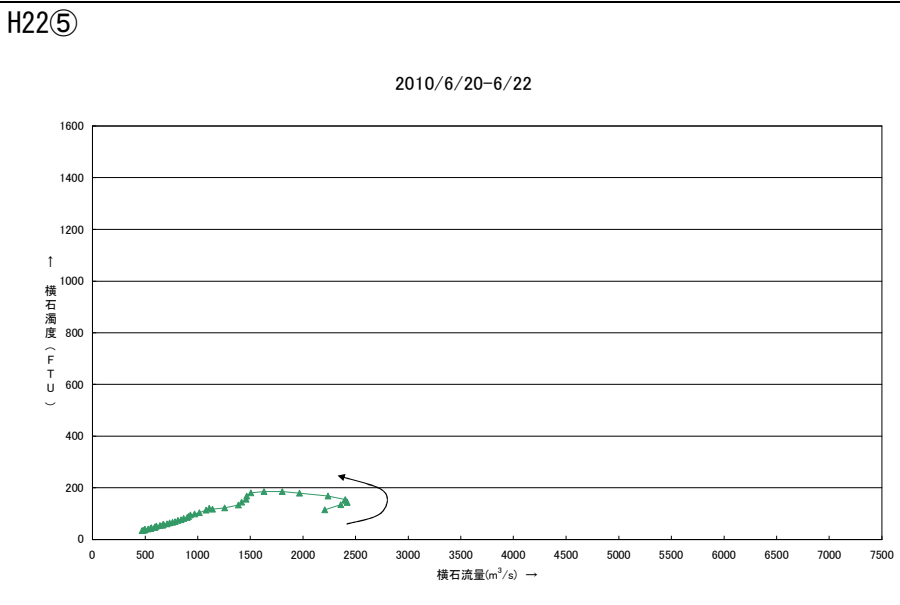
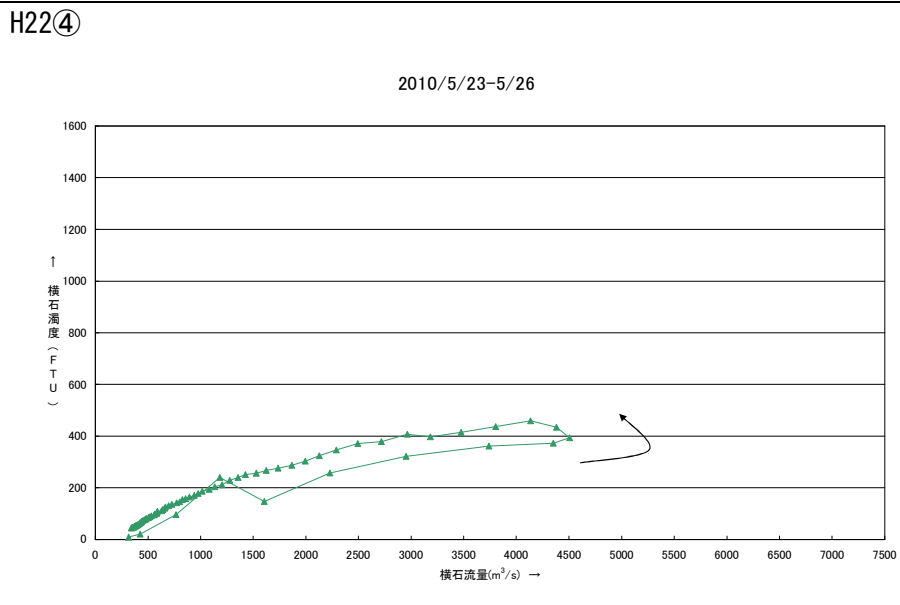
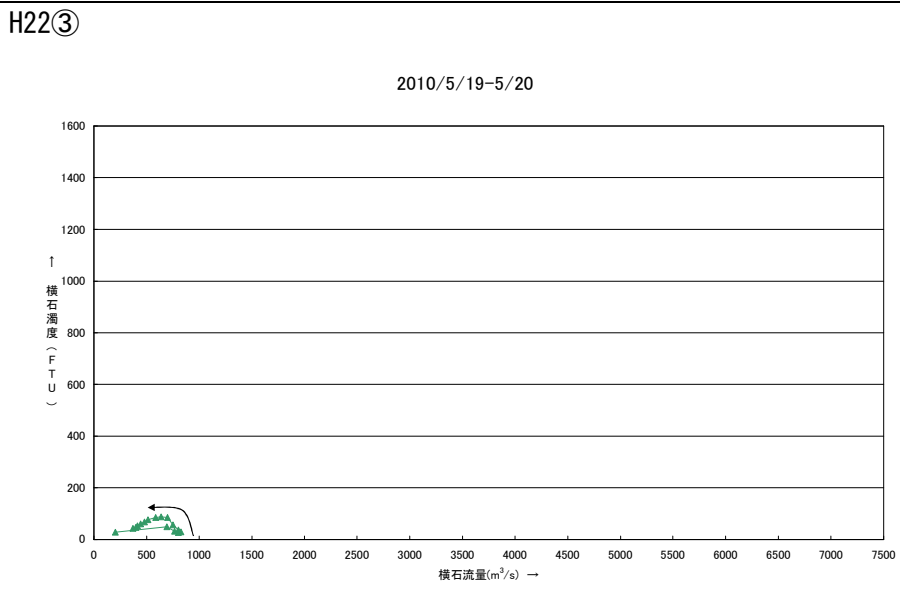
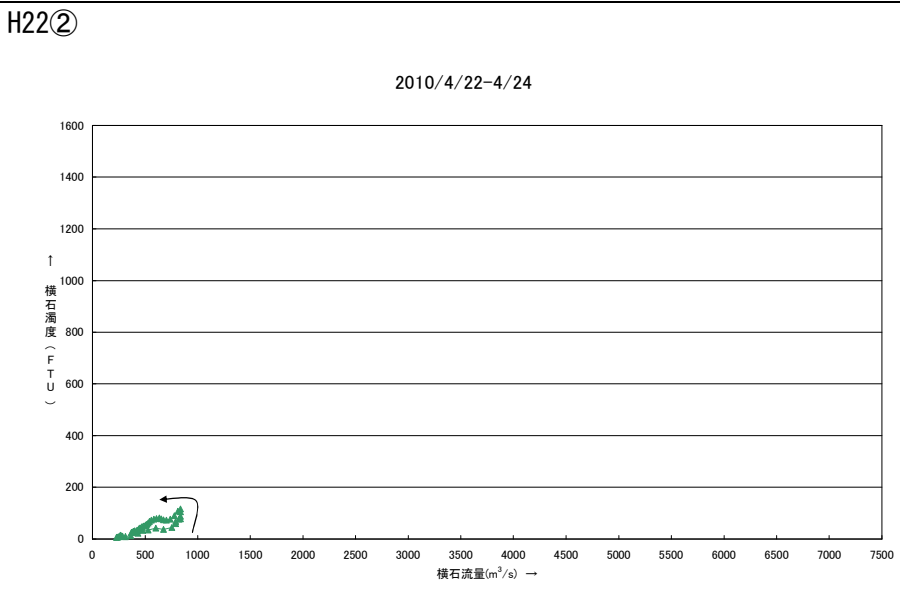
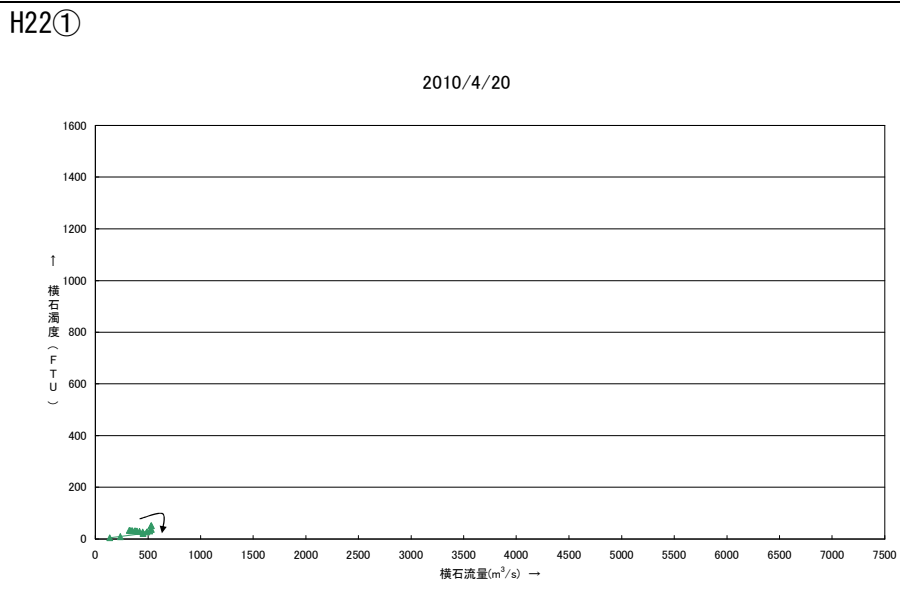
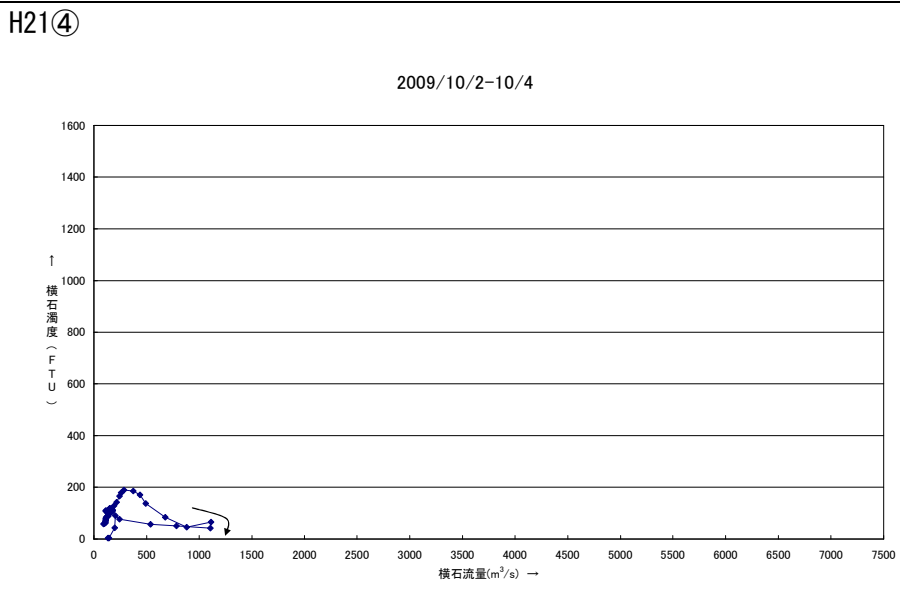
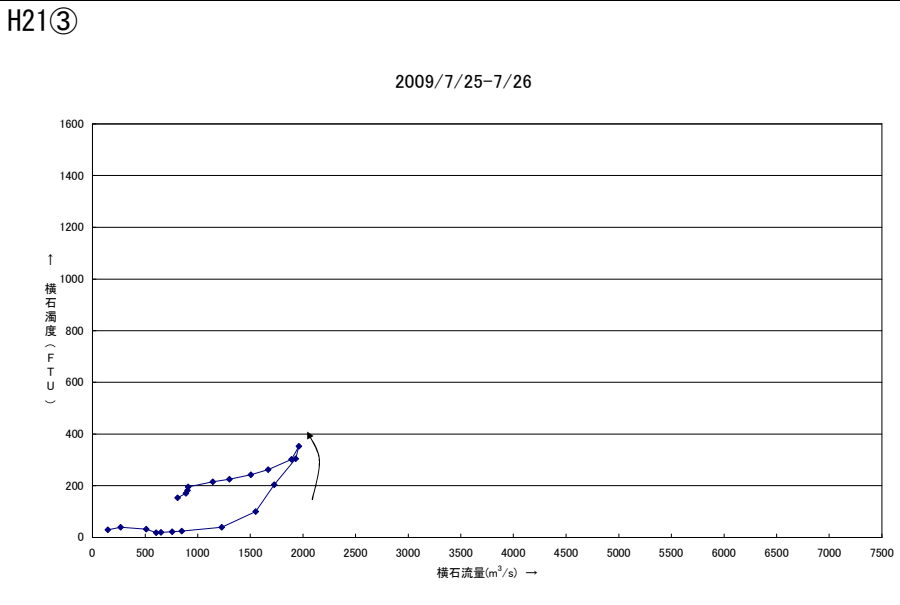
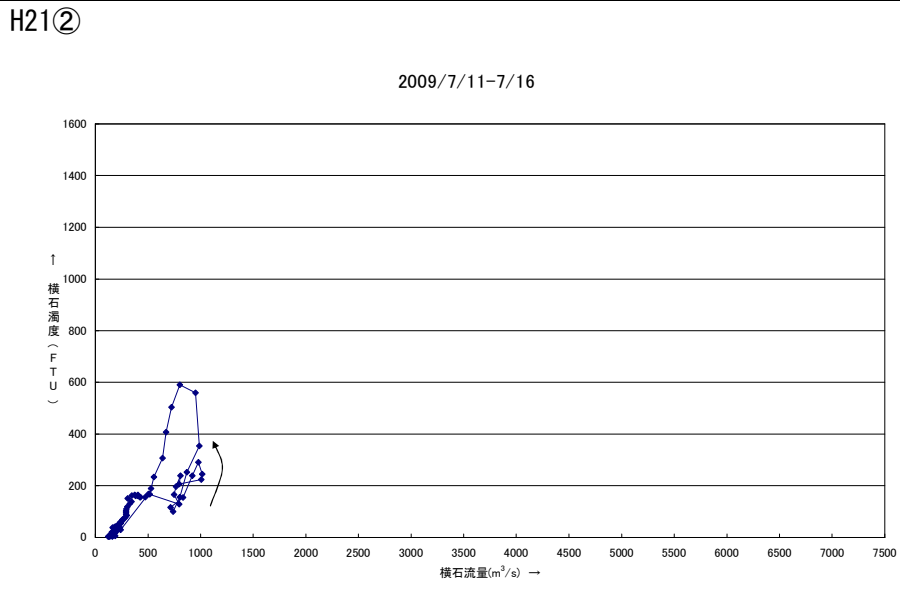
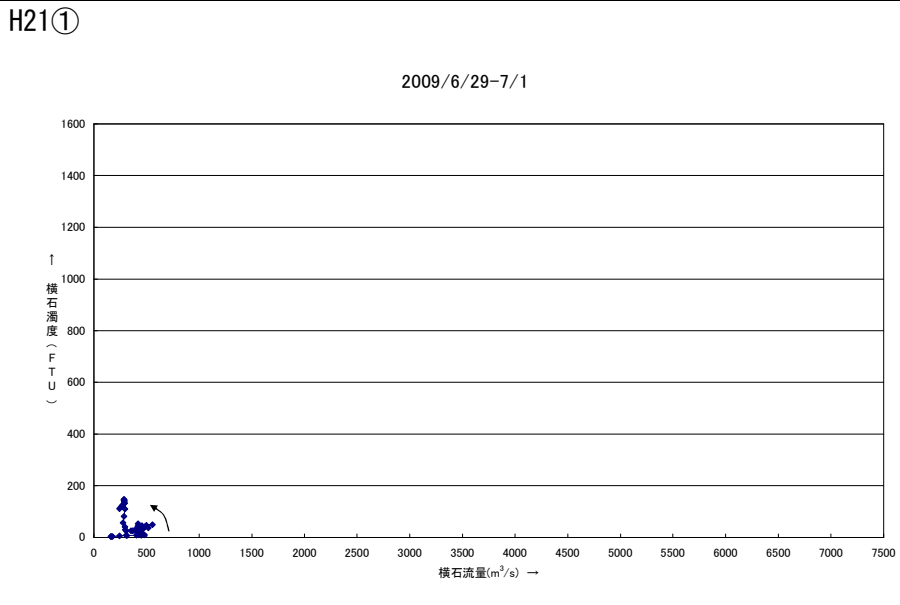


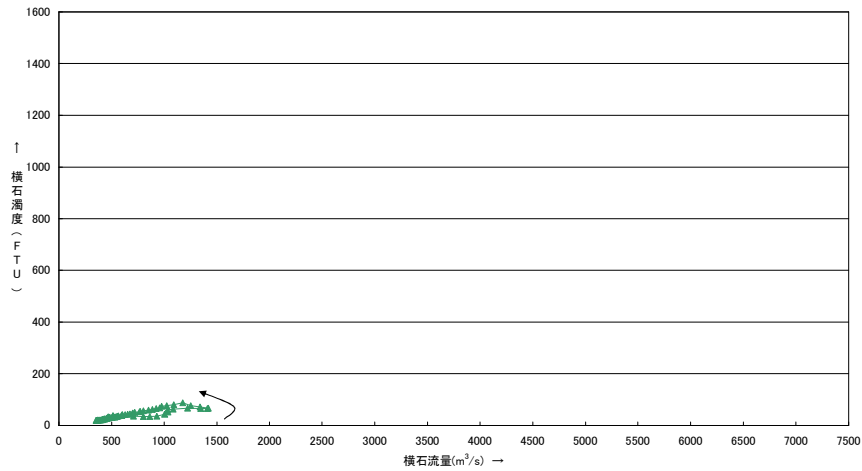
図 出水時の流量と濁度 (FTU) の時間的な変化 (横石)

横石



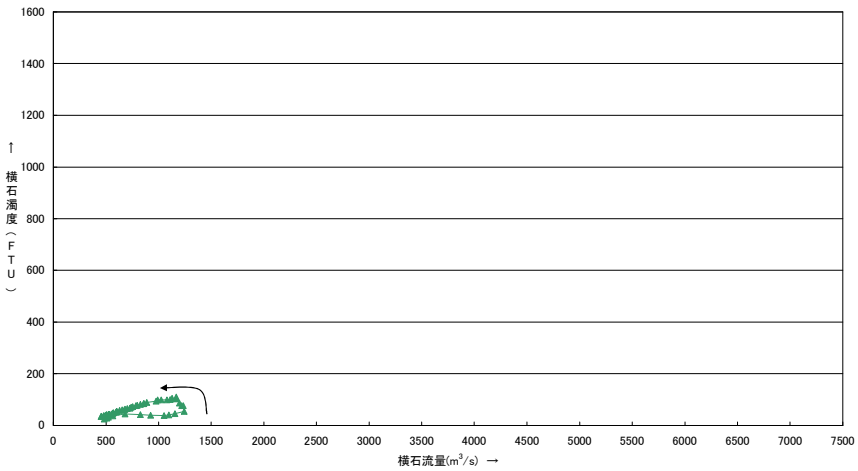
H22⑥

2010/6/22-6/25



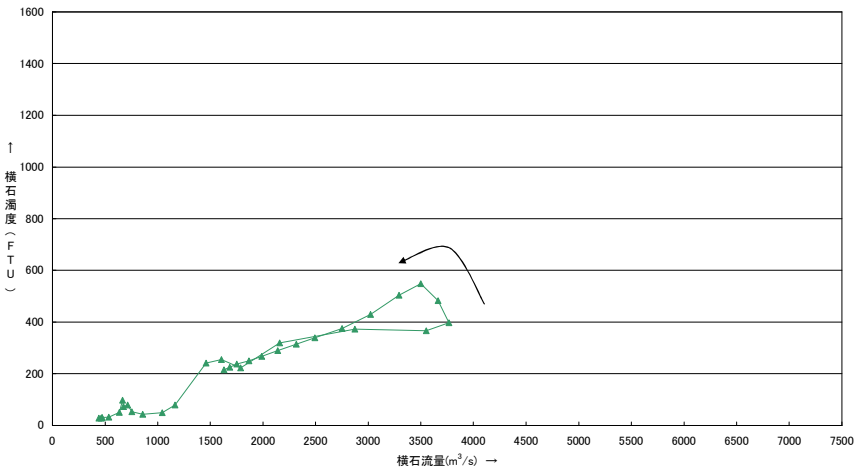
H22⑦

2010/6/26-6/28



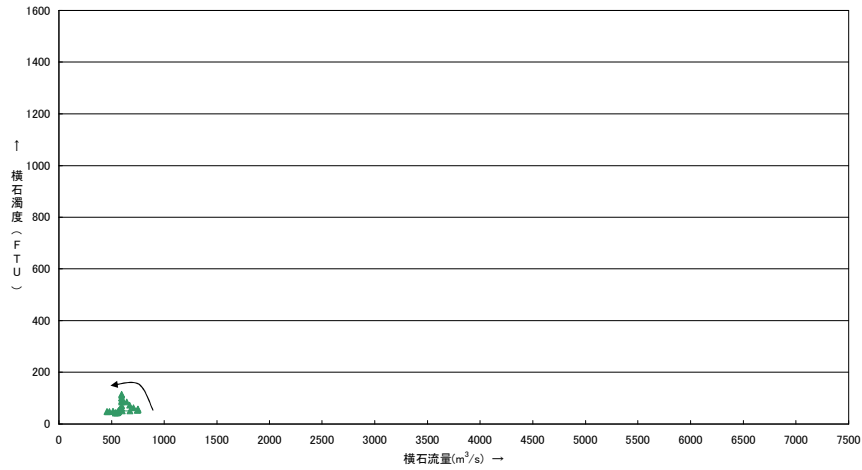
H22⑧

2010/6/28-6/30



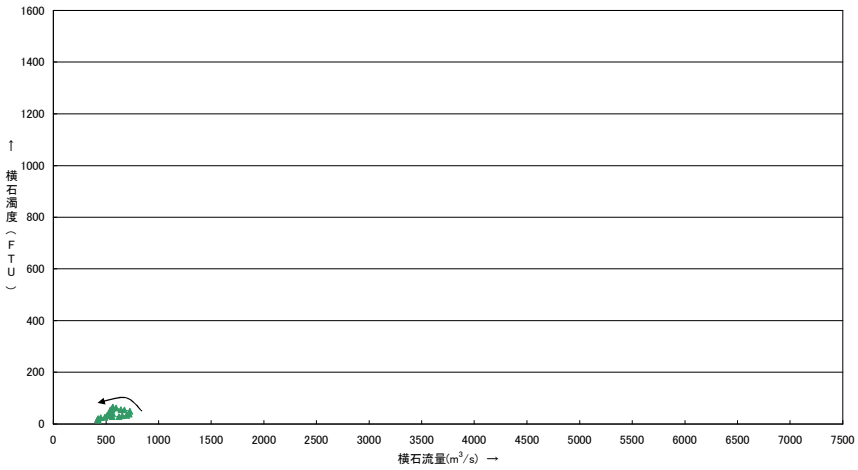
H22⑨

2010/7/3-7/4



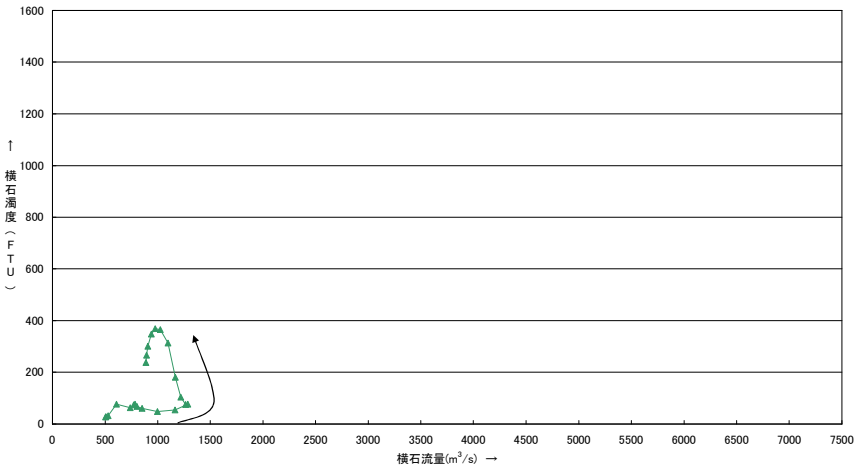
H22⑩

2010/7/11-7/12



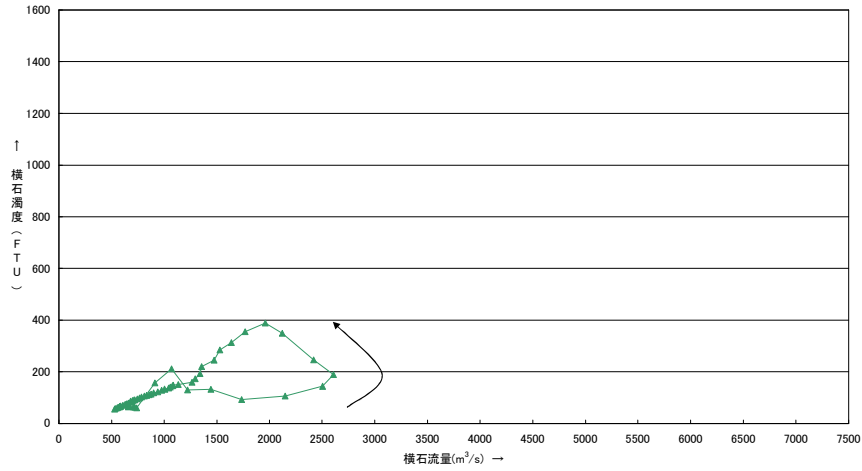
H22⑪

2010/7/12-7/13



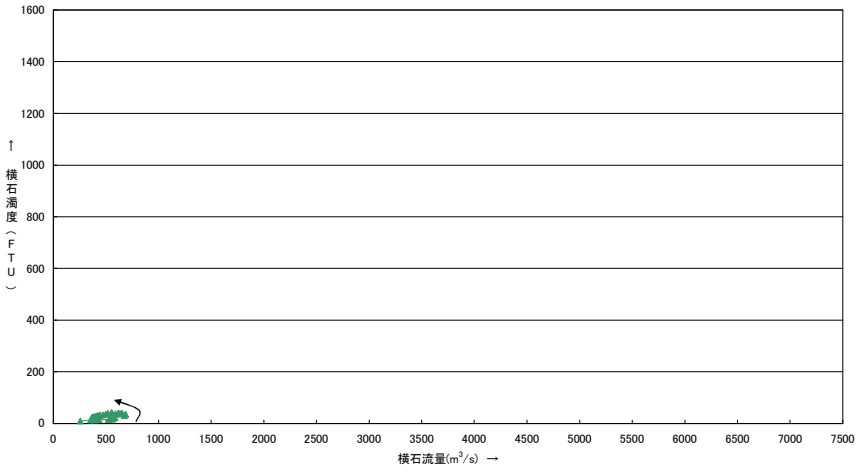
H22⑫

2010/7/14-7/16



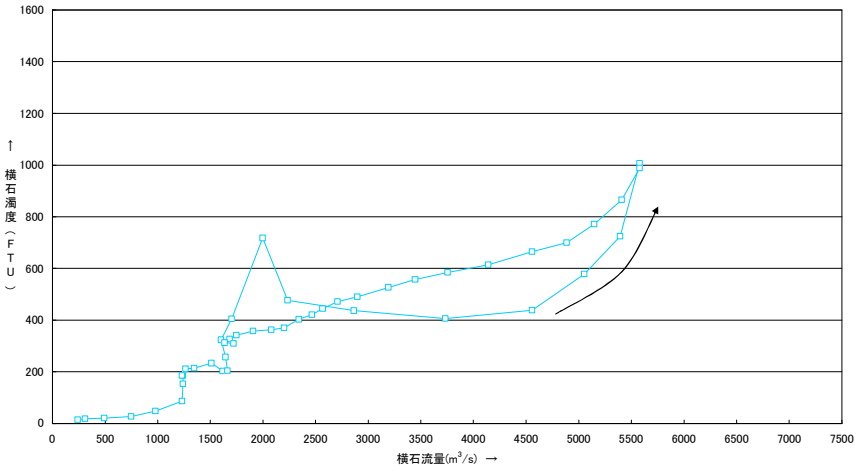
H22⑬

2010/7/28-7/30

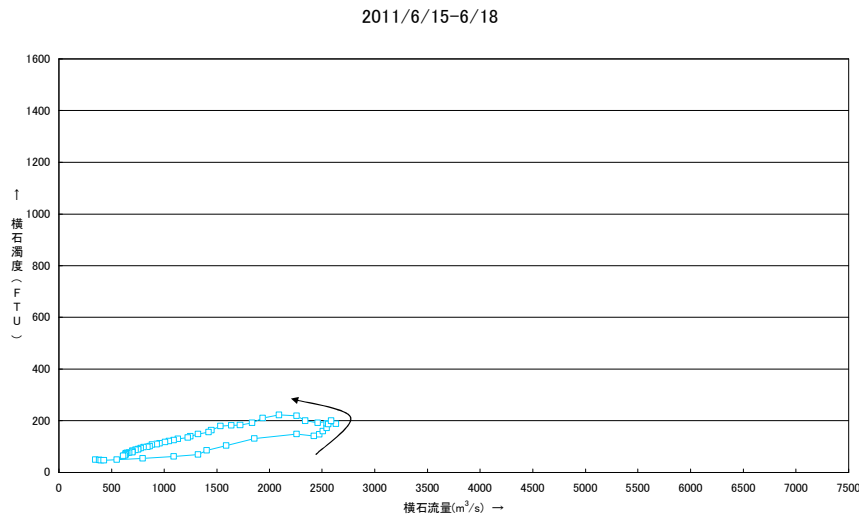


H23①

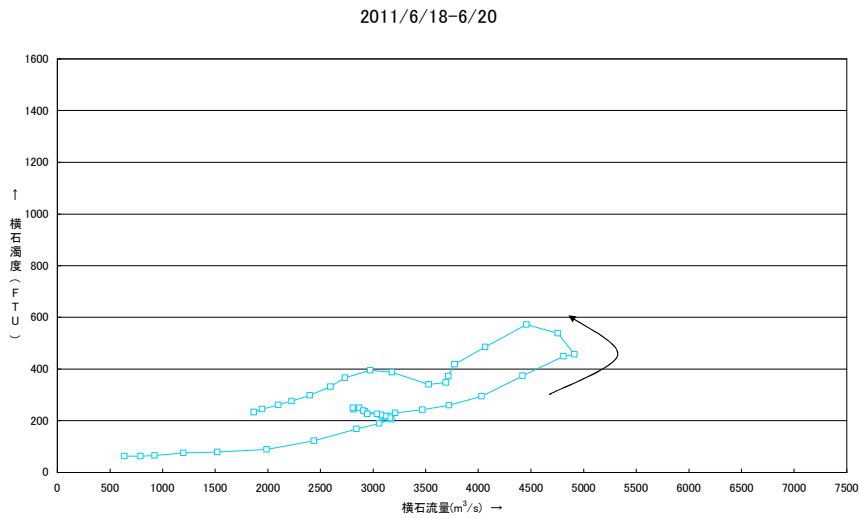
2011/6/10-6/12



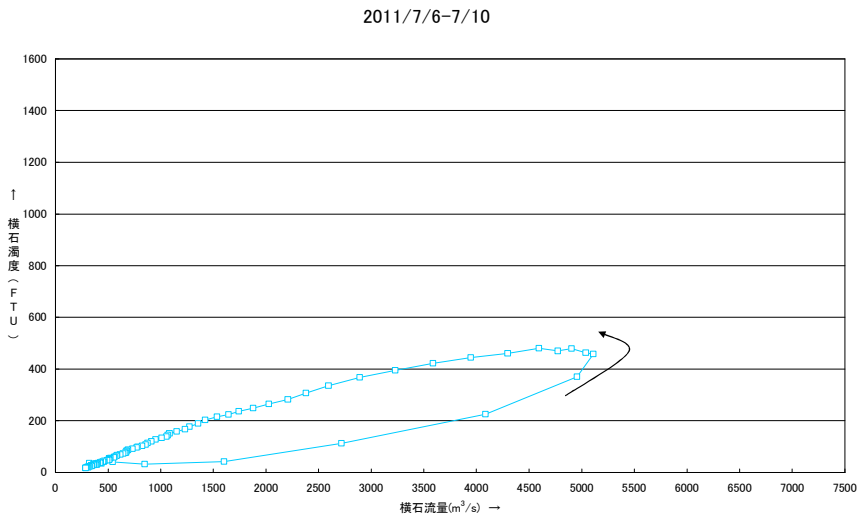
H23②



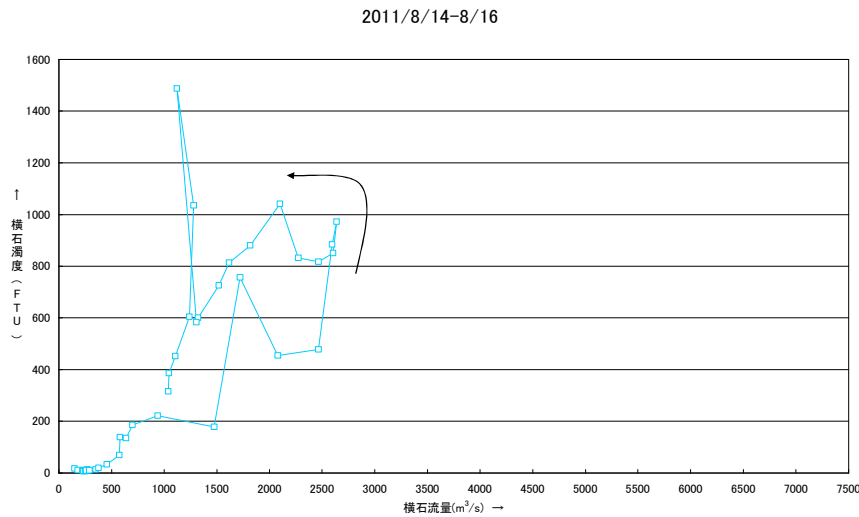
H23③



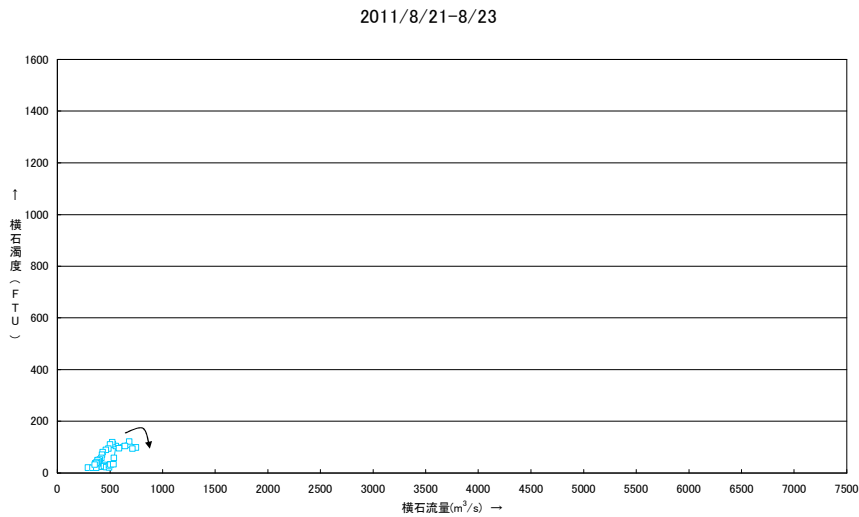
H23④



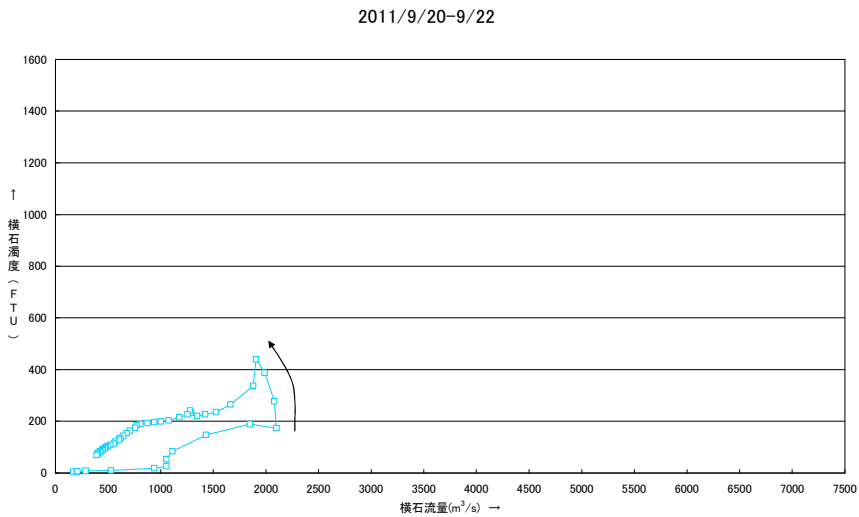
H23⑤



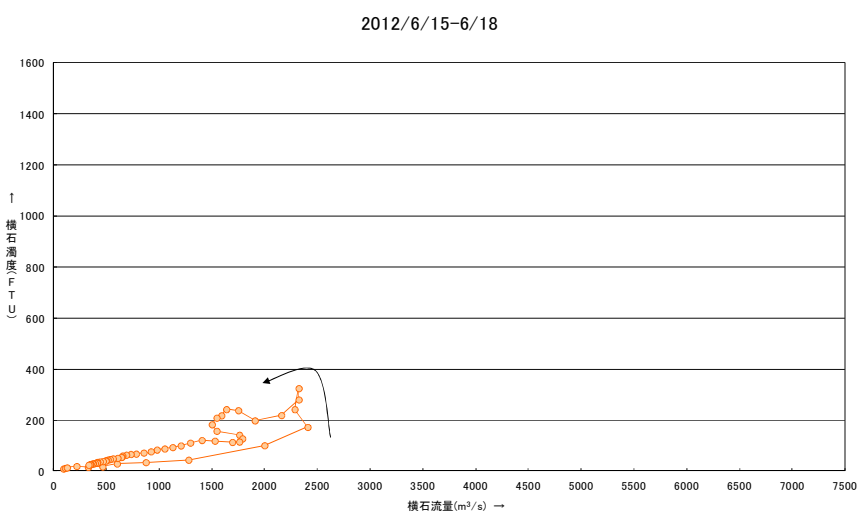
H23⑥



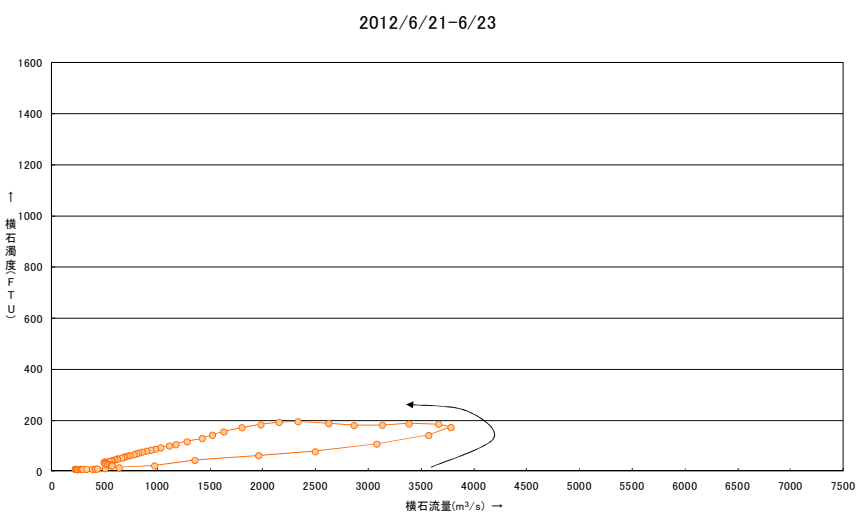
H23⑦



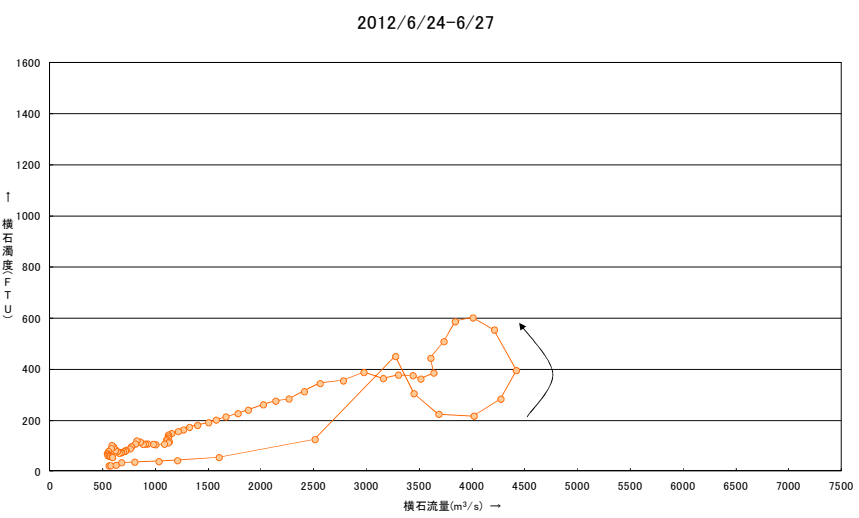
H24①



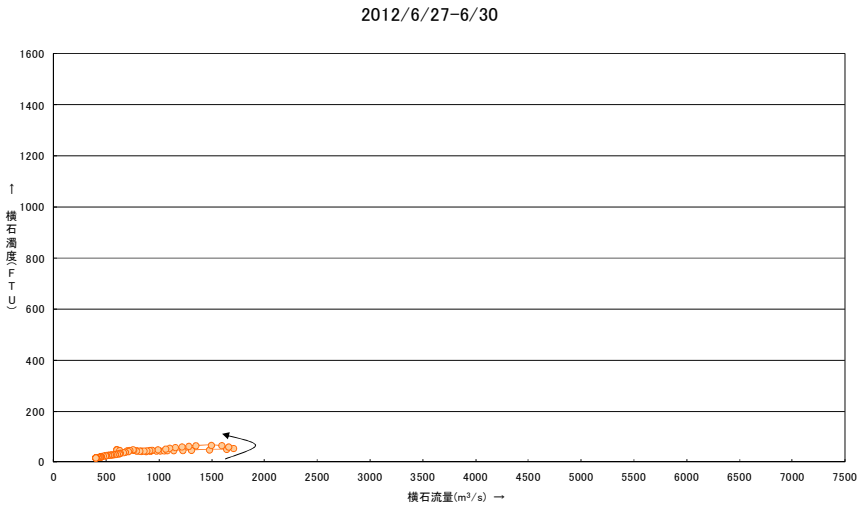
H24②



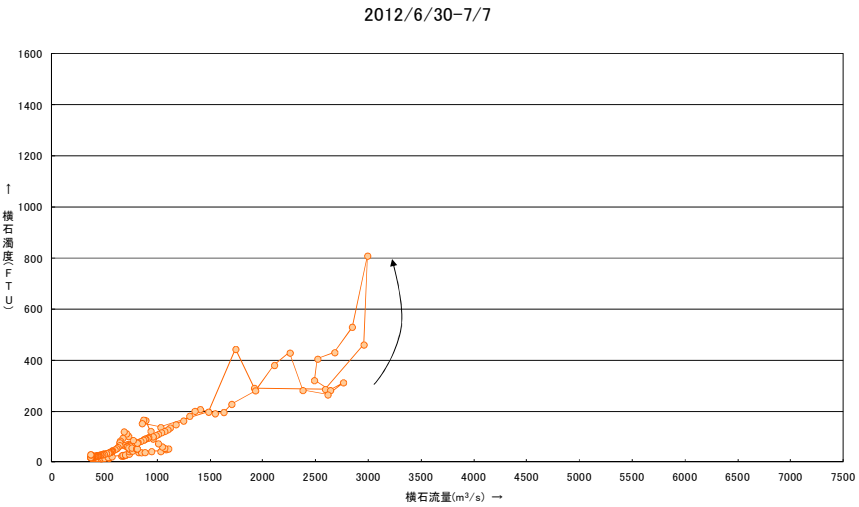
H24③



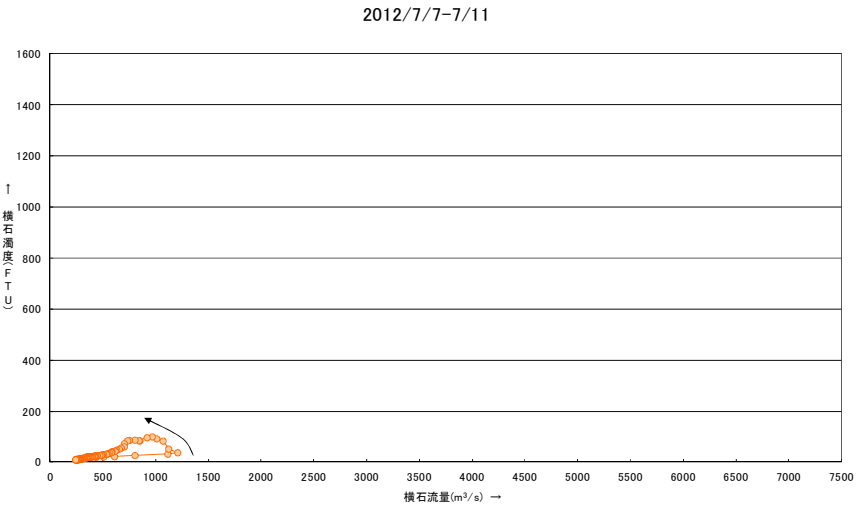
H24④



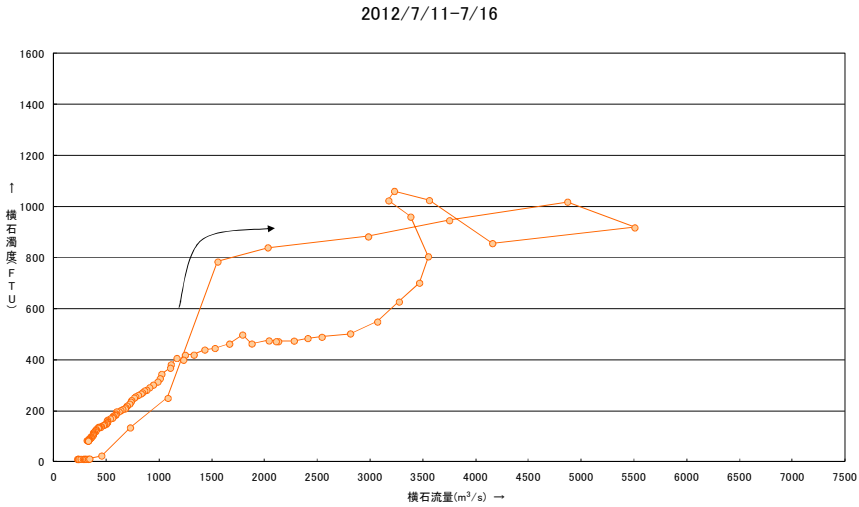
H24⑤



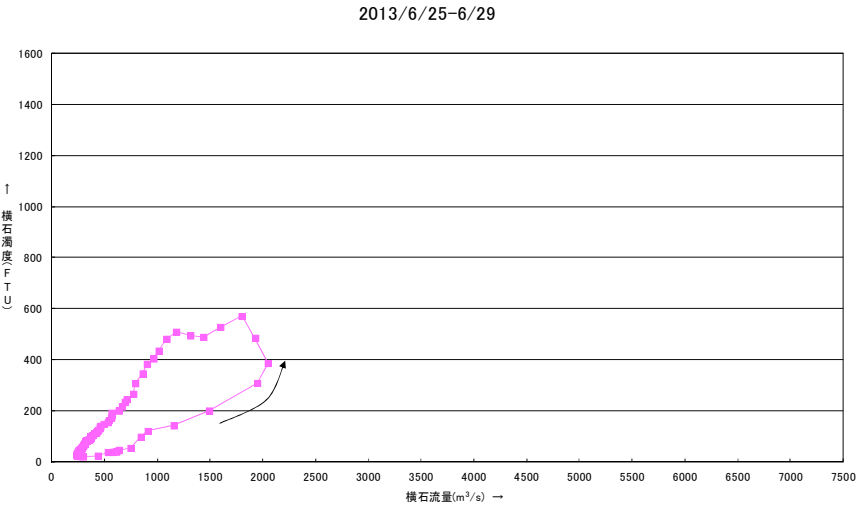
H24⑥



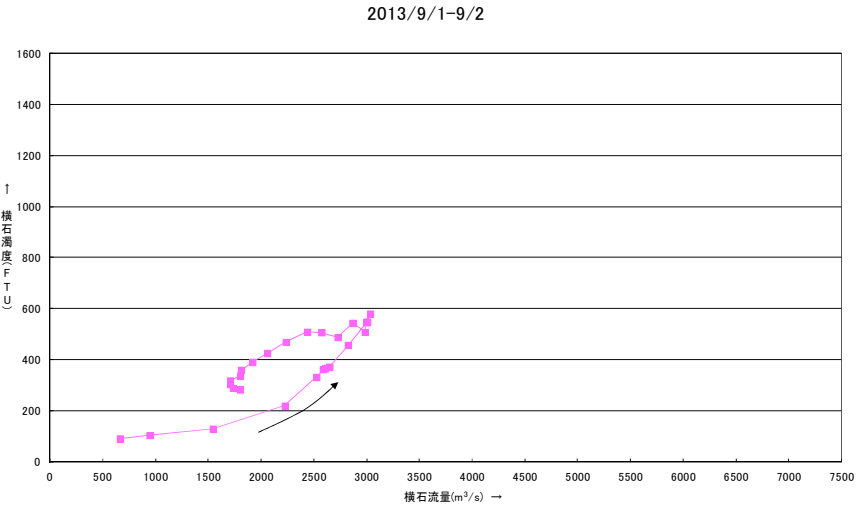
H24⑦



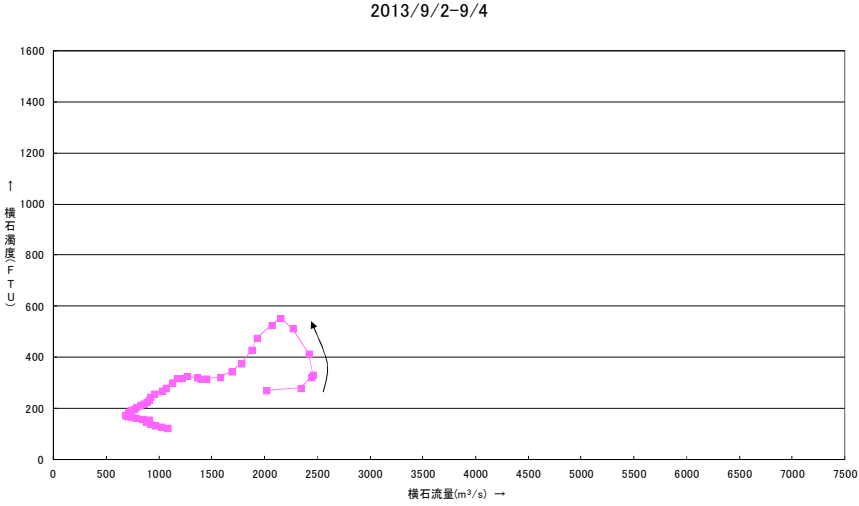
H25①



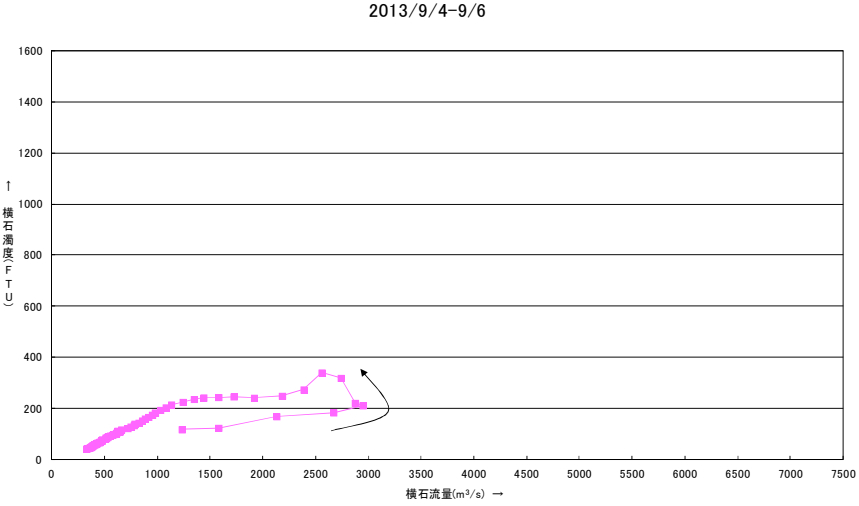
H25②



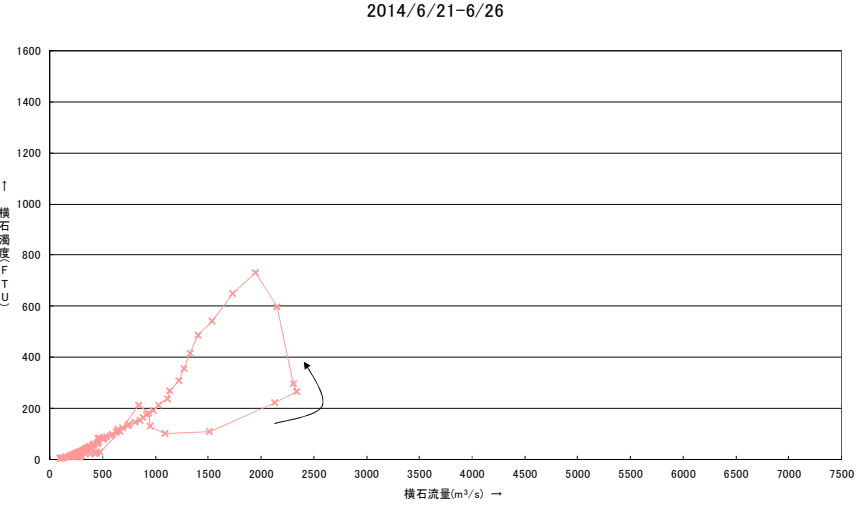
H25③



H25④

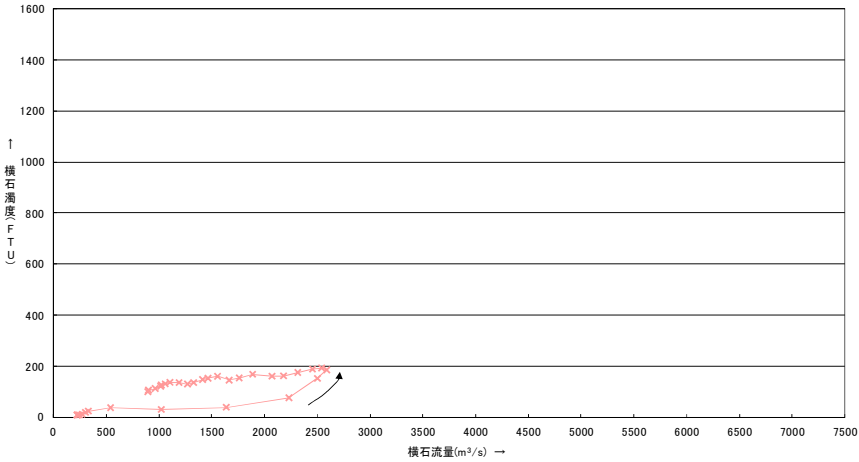


H26①



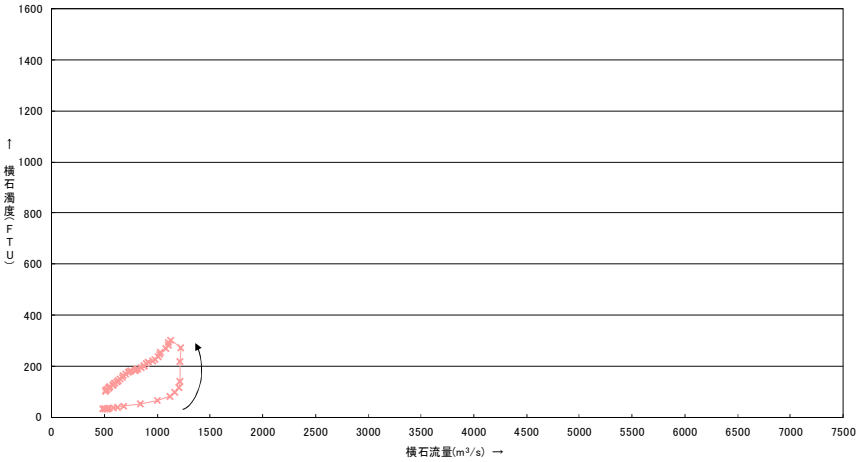
H26②

2014/7/6-7/7



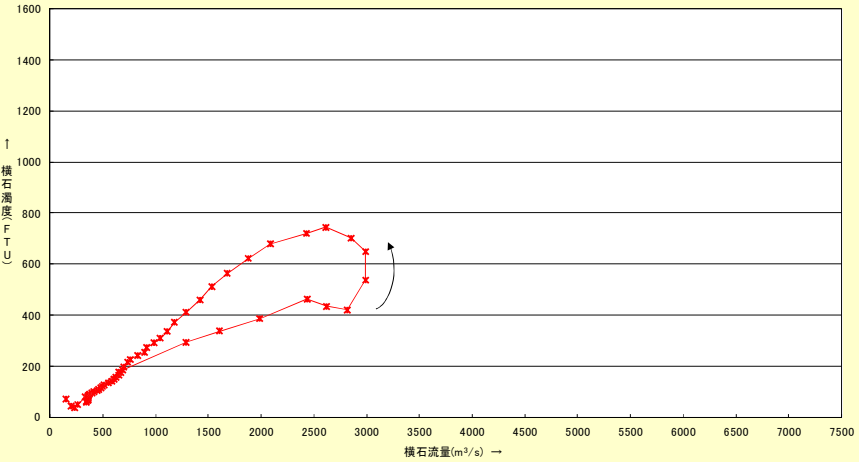
H26③

2014/7/9-7/11



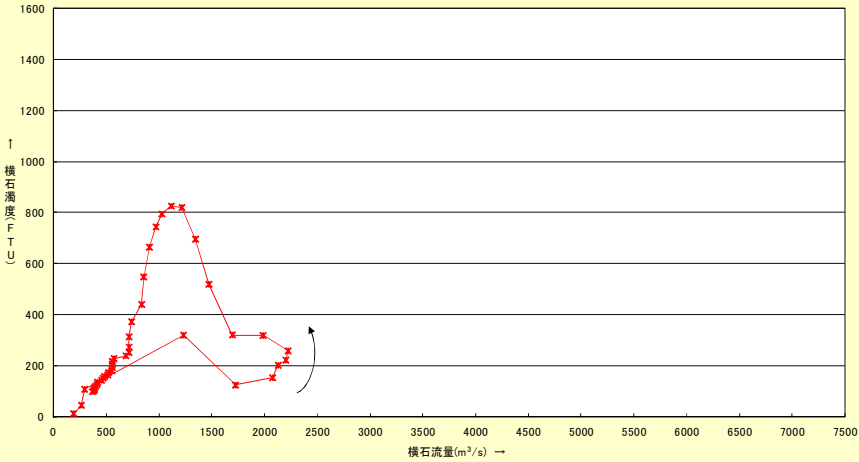
H27①

2015/6/3-6/5



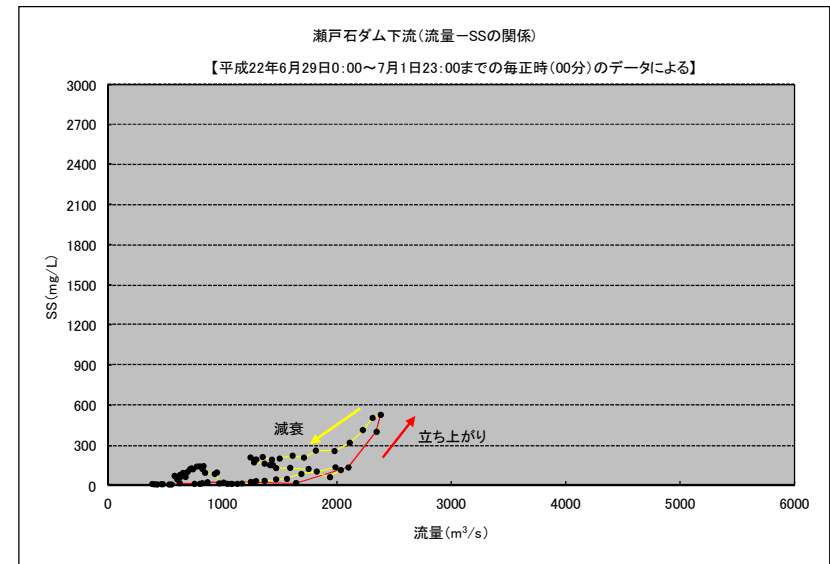
H27②

2015/8/25-8/26

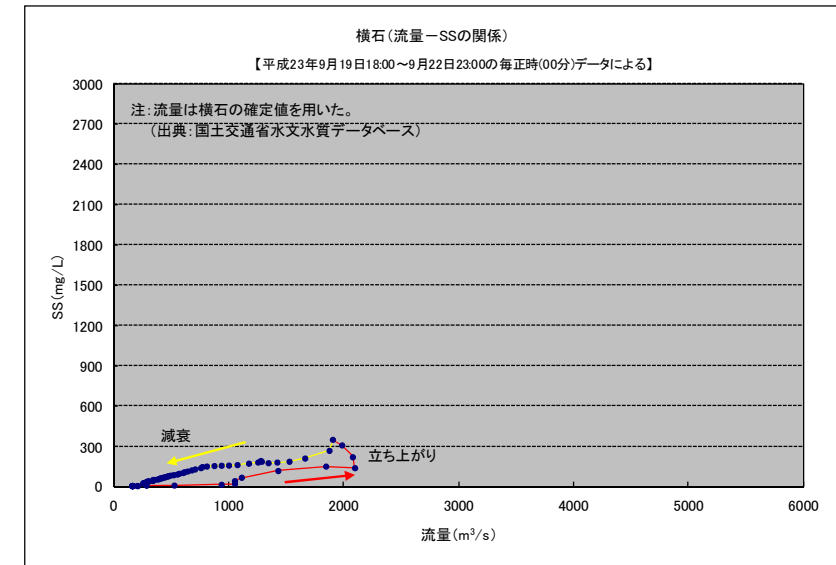
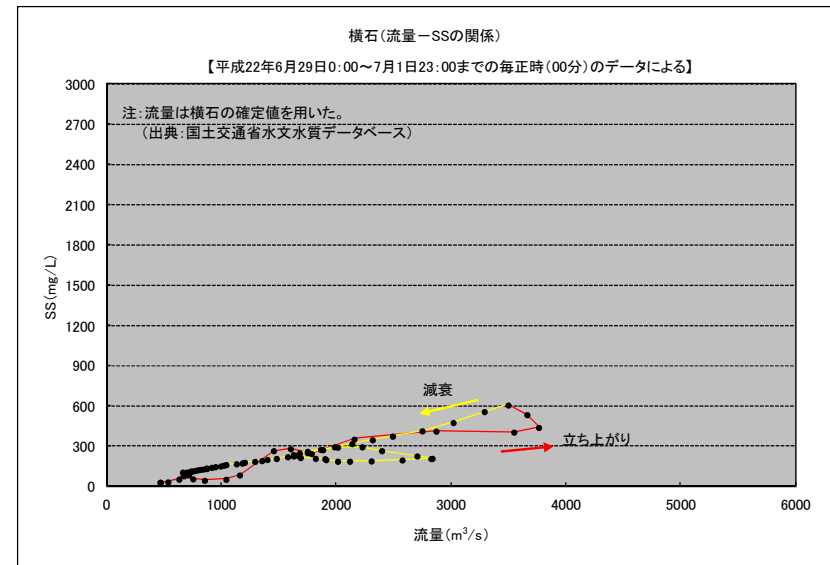
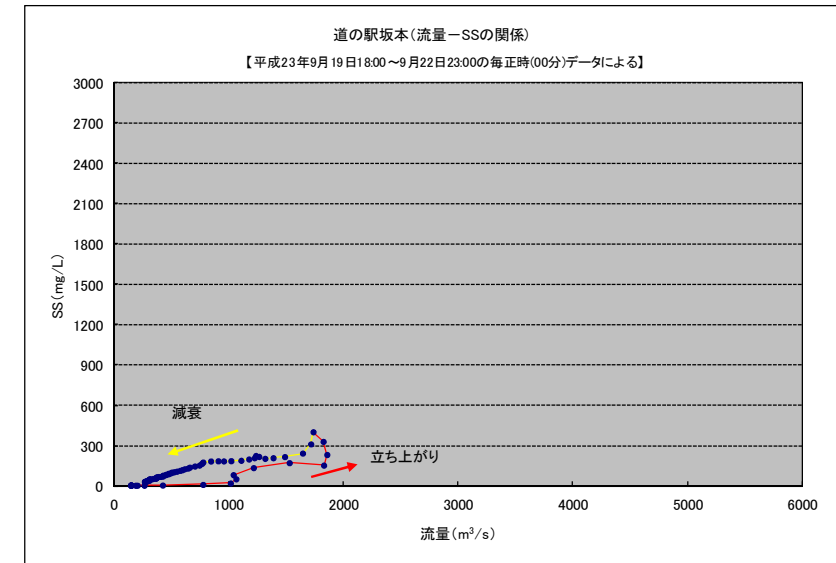
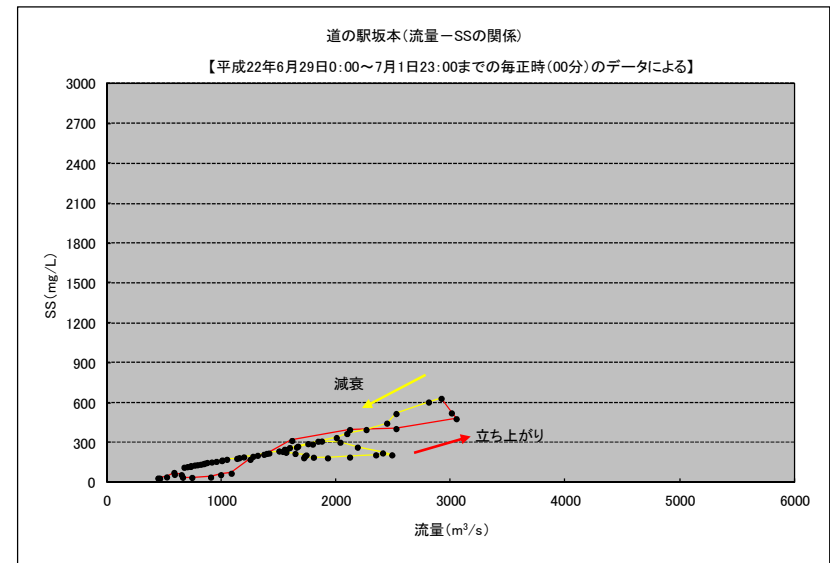
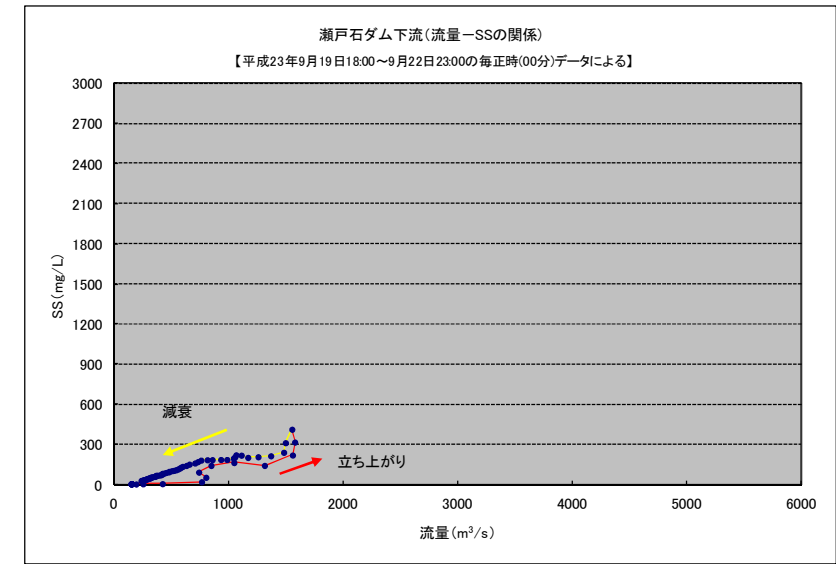


出水時調査時の流量と SS の時間的変化について、平成 22 年度、平成 23 年度、平成 25 年度及び平成 27 年度のデータを整理した図を以下に示す。全て反時計回りである。

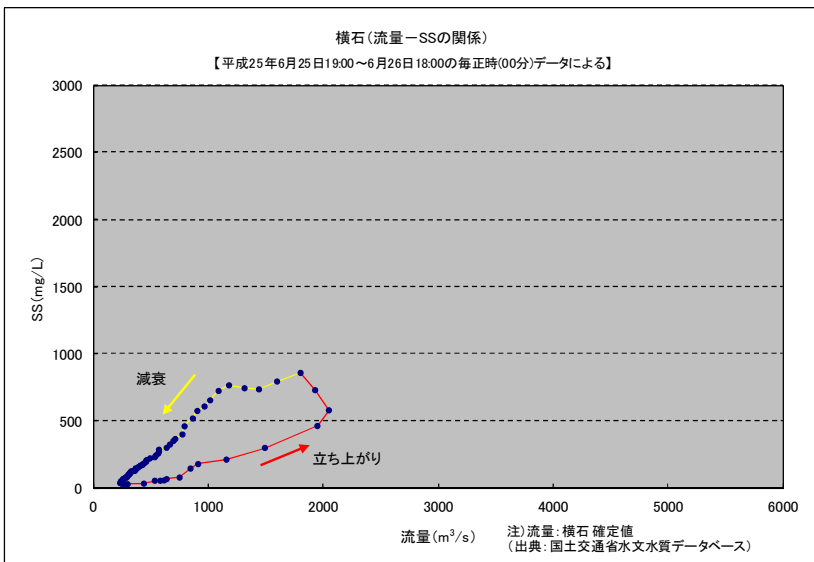
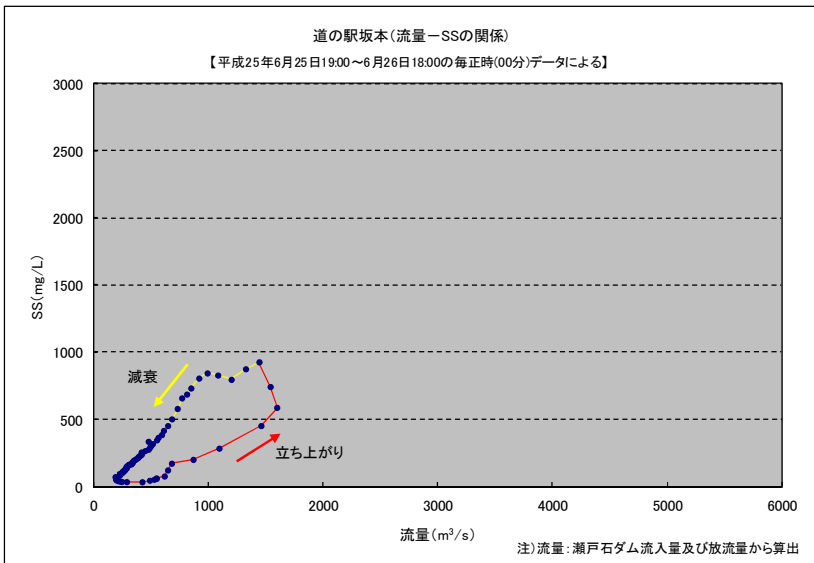
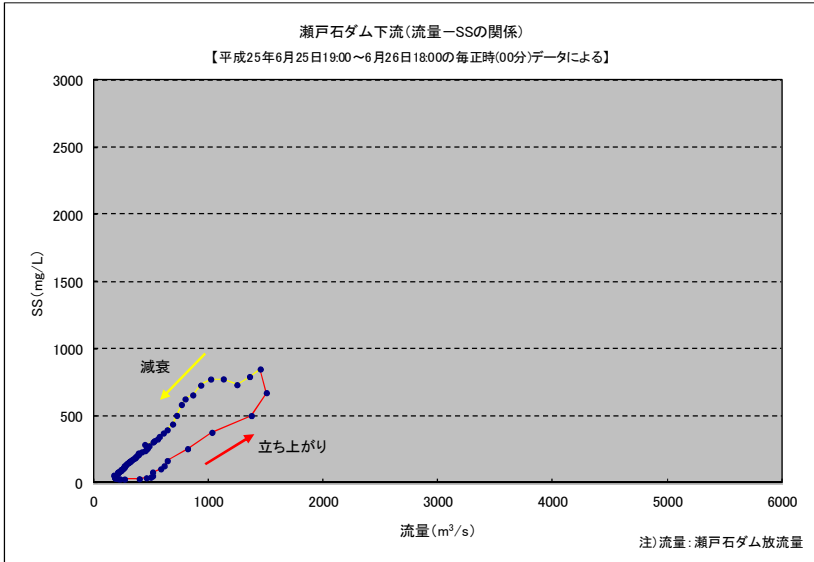
[出水時 1] 平成 22 年度 出水時調査結果（平成 22 年 6 月 29 日～7 月 1 日）



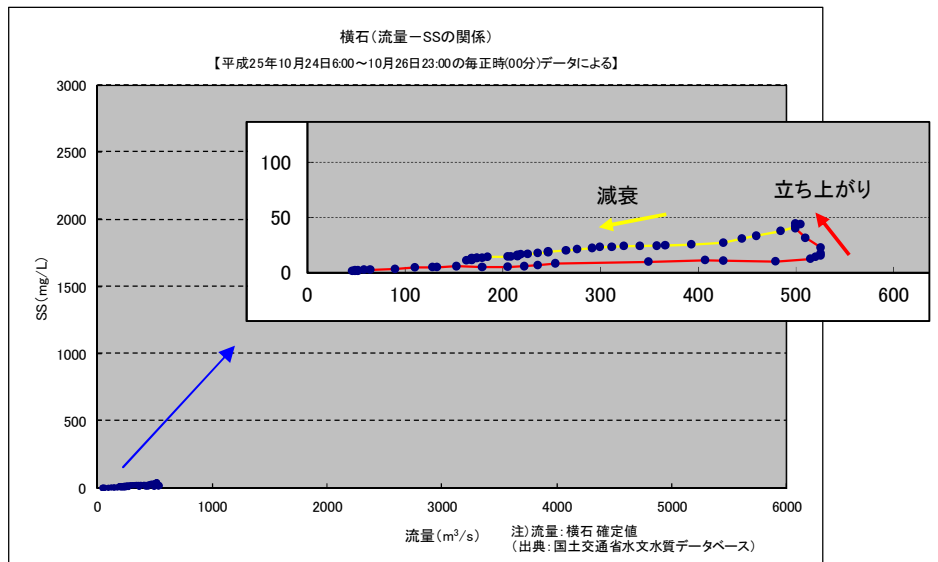
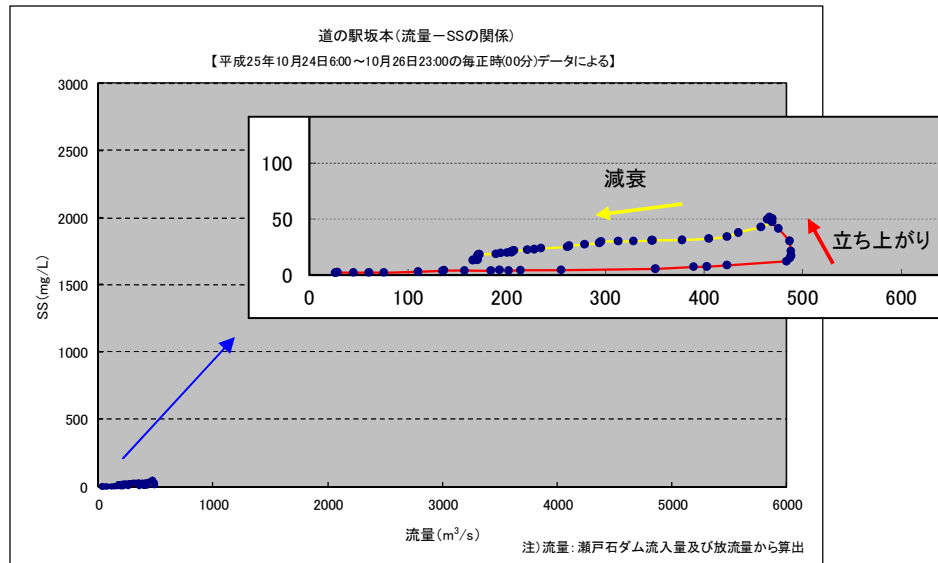
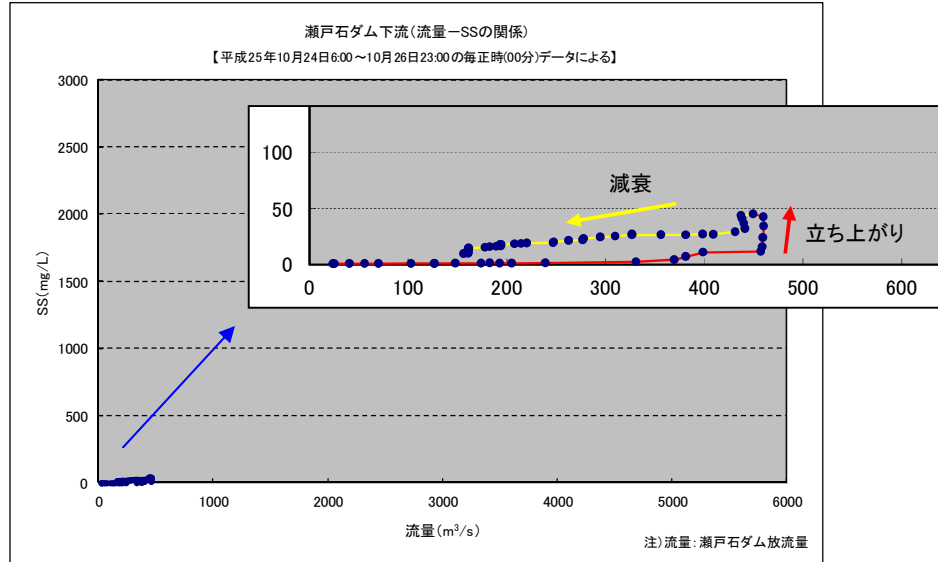
[出水時 2] 平成 23 年度 出水時調査結果（平成 23 年 9 月 19 日～9 月 22 日）



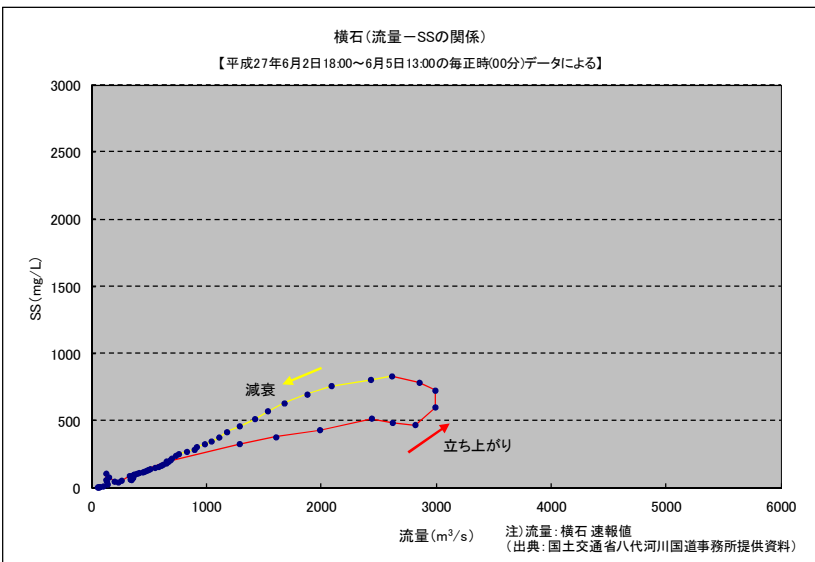
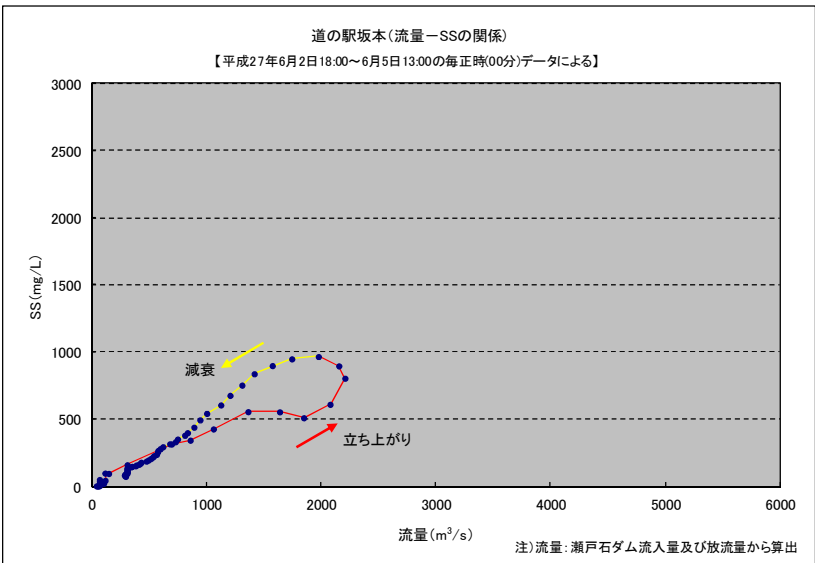
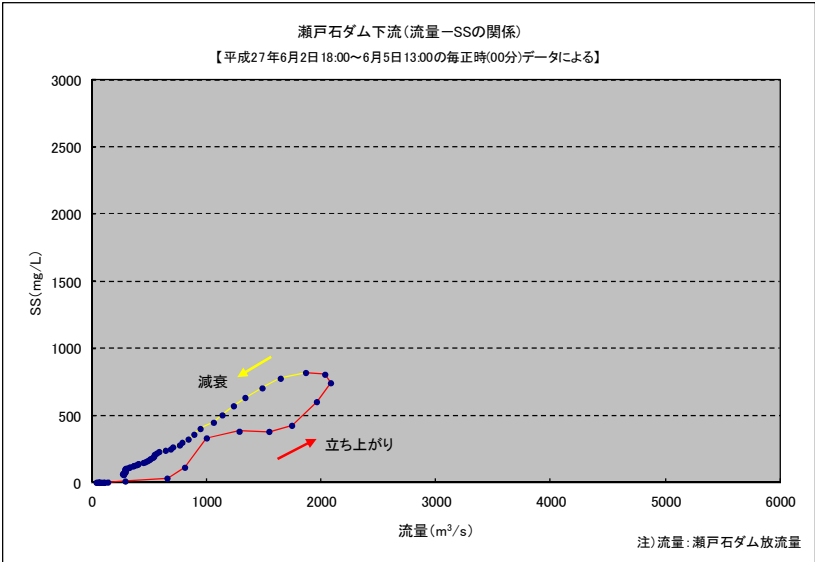
[出水時 3]平成 25 年度 出水時調査結果（平成 25 年 6 月 25 日～26 日）



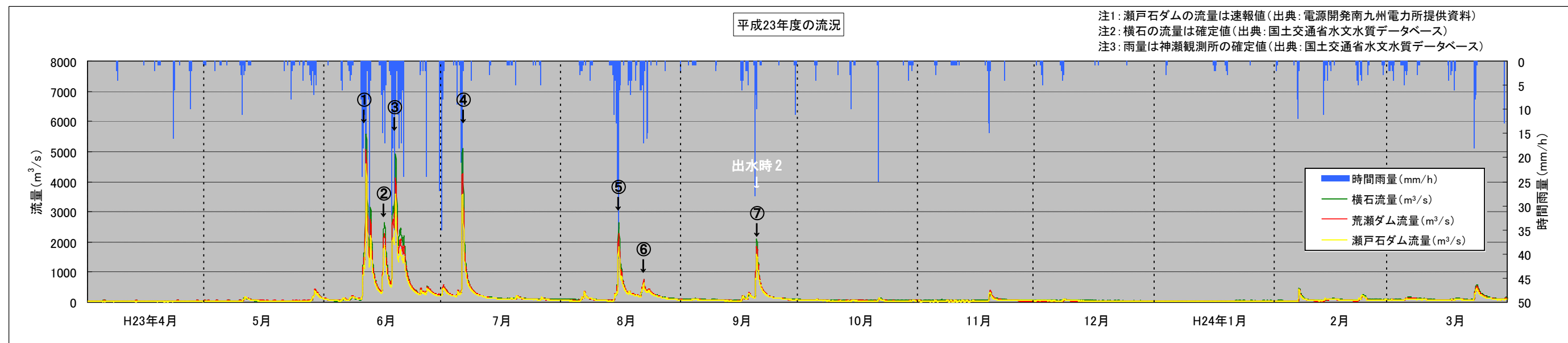
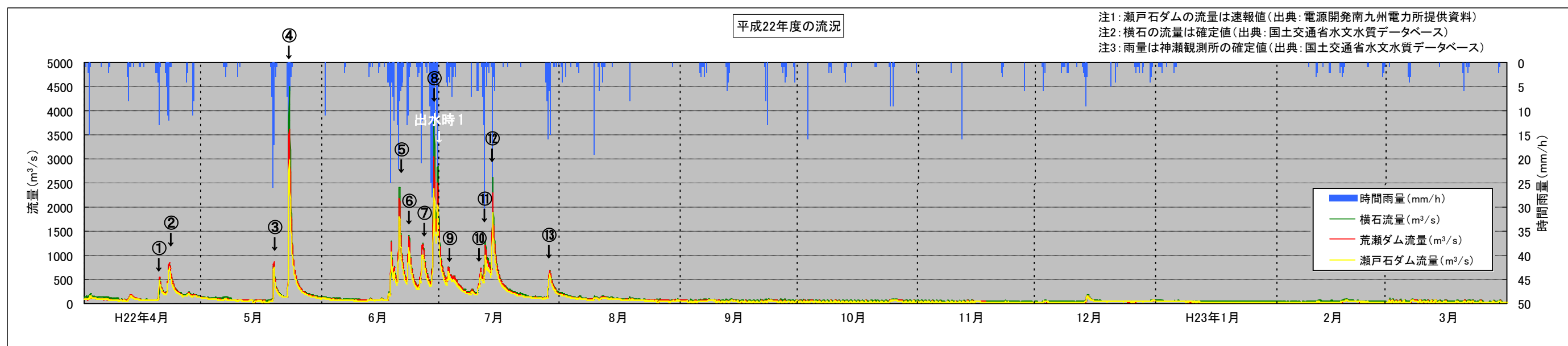
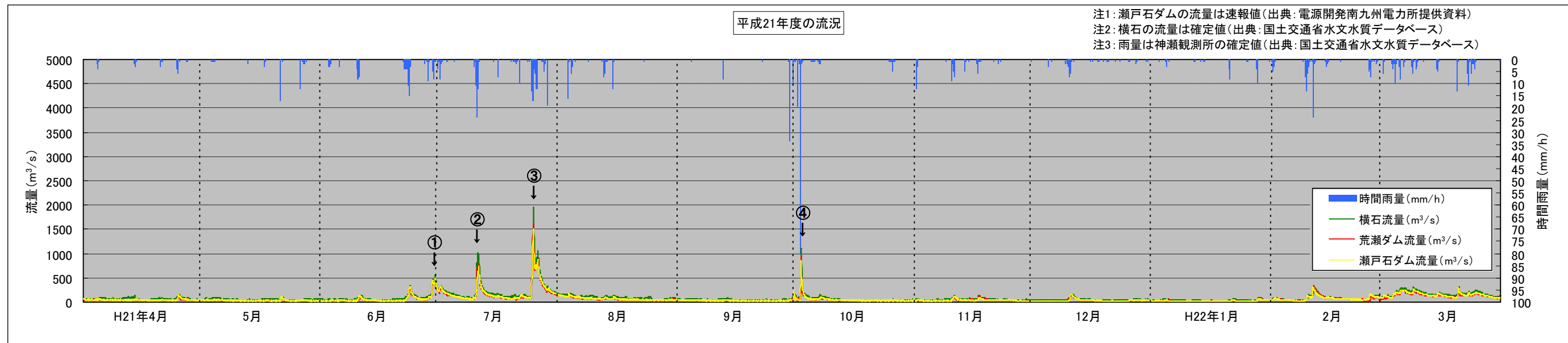
[出水時 4]平成 25 年度 出水時調査結果（平成 25 年 10 月 24 日～26 日）

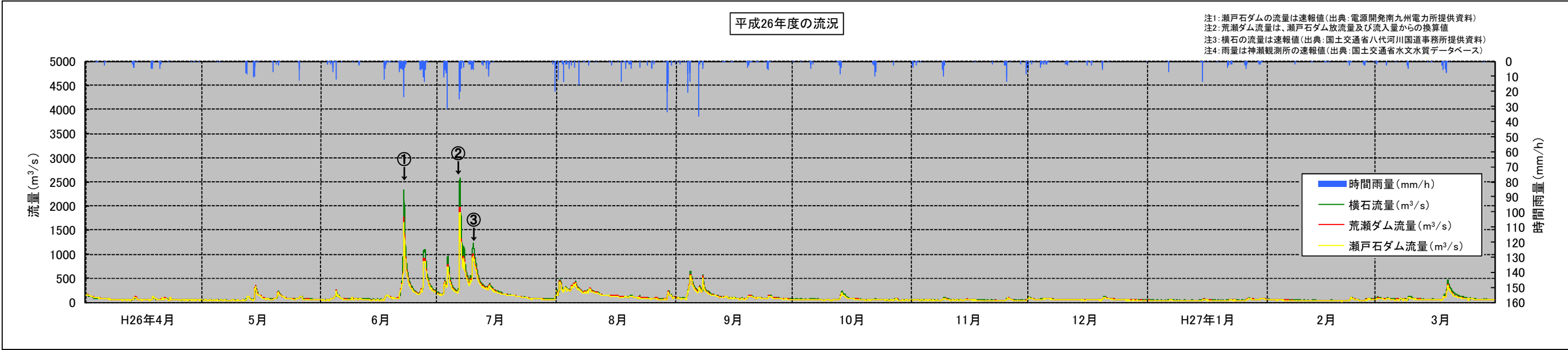
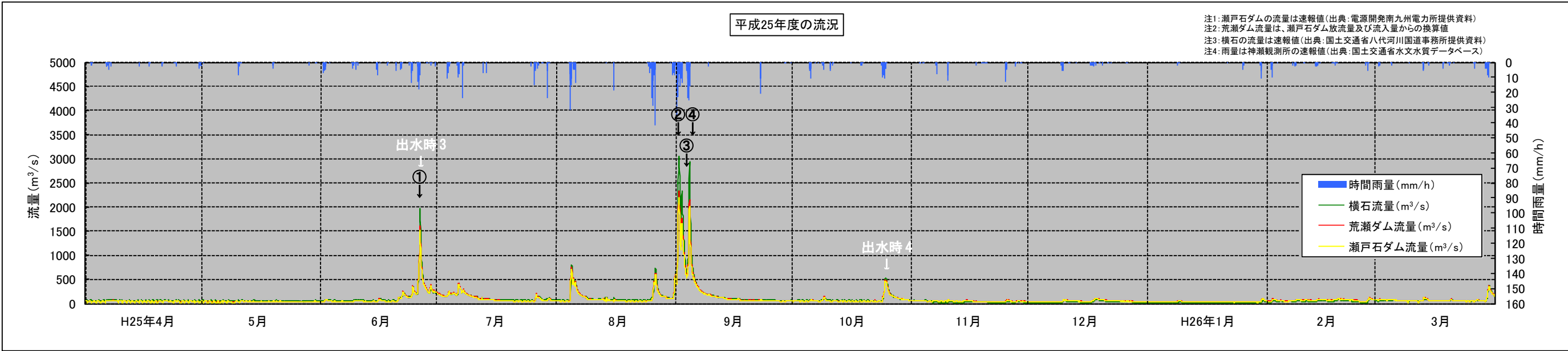
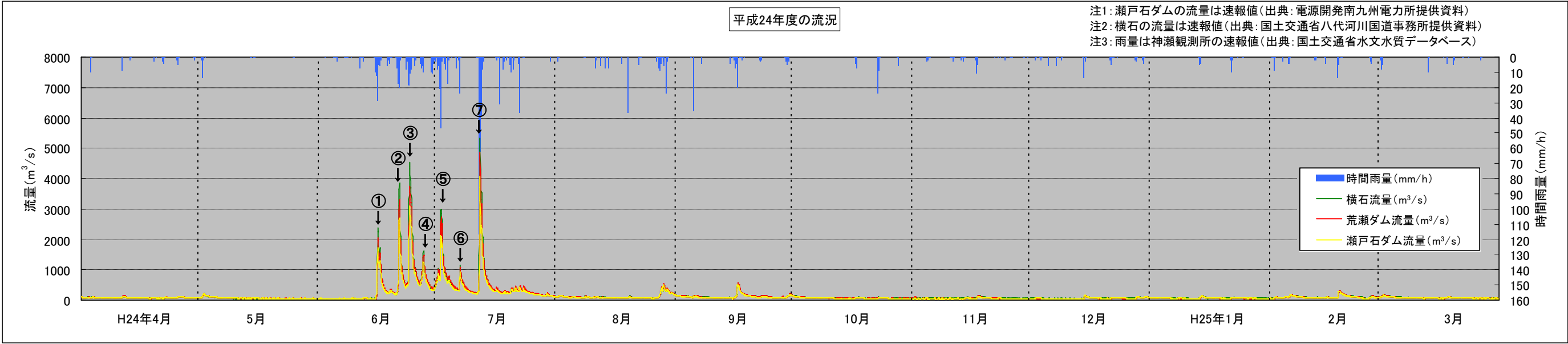


[出水時 5]平成 27 年度 出水時調査結果（平成 27 年 6 月 2 日～5 日）



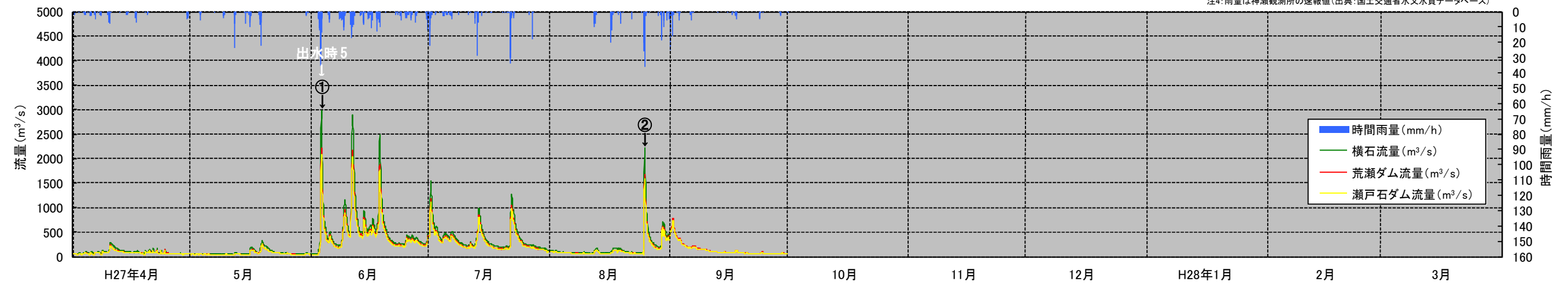
■「7) 出水時の流量と濁度（FTU）の時間的な変化について（H21～27 年）」に掲載したグラフにおいて、各年度で抽出した出水を以下の図に示した。抽出した出水は丸数字で表しており、7) のグラフの丸数字と対応している。





平成27年度の流況

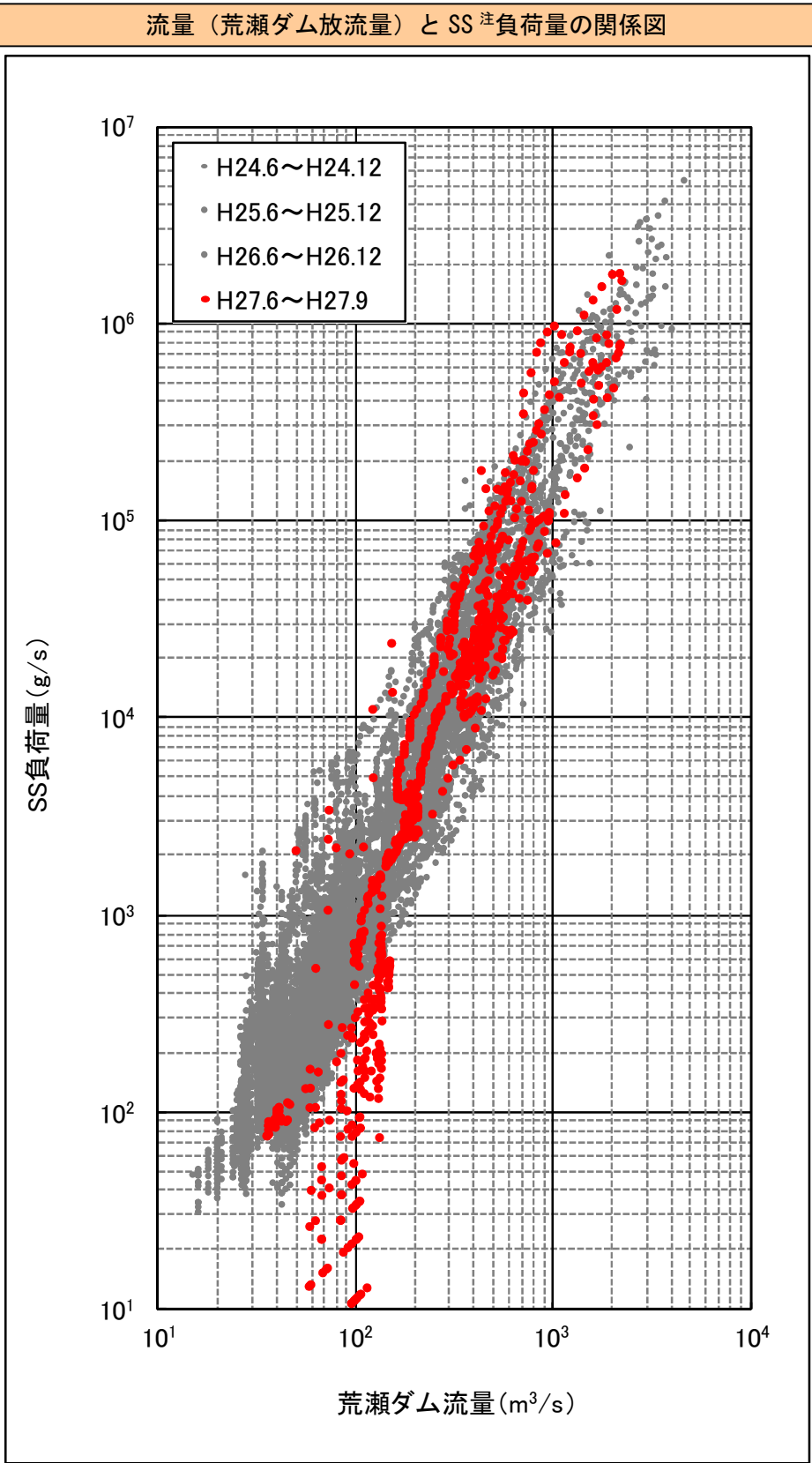
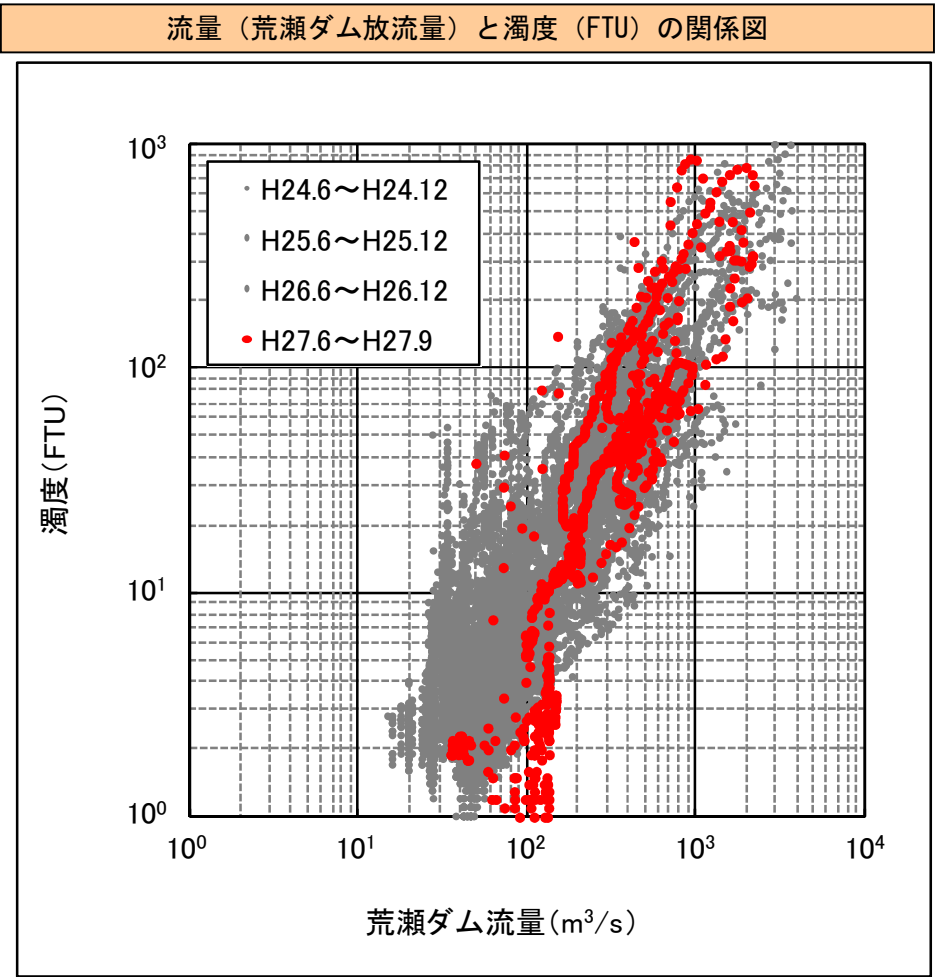
注1: 瀬戸石ダムの流量は速報値(出典: 電源開発南九州電力所提供資料)
 注2: 荒瀬ダム流量は、瀬戸石ダム放流量及び流入量からの換算値
 注3: 横石の流量は速報値(出典: 国土交通省八代河川国道事務所提供資料)
 注4: 雨量は神瀬観測所の速報値(出典: 国土交通省水文水質データベース)



8) 出水時の道の駅坂本の流量（荒瀬ダム流量）と水質（濁度、SS）の関係について（H27 年度観測）

流量と濁度や SS の関係の平均的な挙動を把握するために、平成 24 年 6～12 月、平成 25 年 6～12 月、平成 26 年 6～12 月及び平成 27 年 6～9 月の出水時における「流量と濁度(FTU)」及び「流量と SS 負荷量」のデータをプロットしたものを下図に示す。

注：濁度から SS への換算は、平成 25 年度までのデータから作成した「 $SS=1.1435 \times \text{濁度}$ 」（第 7 回委員会資料と同じもの）を用いている。



注：SS は、回帰式による濁度 (FTU) の換算値