
Appendix 2.2A-10

Open Pit Water Management Plan

**NEW GOLD INC.
BLACKWATER GOLD PROJECT**



OPEN PIT WATER MANAGEMENT PLAN

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VA101-457/6-9
Rev 0
November 29, 2013

Knight Piésold
CONSULTING
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ISO 9001 - FS 64925
ISO 14001 - FMS 550121
OHSAS 18001 - OHS 550122

NEW GOLD INC.
BLACKWATER GOLD PROJECT
OPEN PIT WATER MANAGEMENT PLAN
VA101-457/6-9

Rev	Description	Date	Approved
0	Issued in Final	November 29, 2013	<i>KMB</i>

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EXECUTIVE SUMMARY

New Gold Inc. (New Gold) is conducting engineering studies, economic evaluations, and environmental work on the Blackwater Gold Project. Knight Piésold Ltd. (KP) has assisted New Gold with the development of an open pit water management plan. Key components of the open pit water management plan include:

- Development of a conceptual hydrogeologic model of the open pit area
- Estimates of groundwater inflow rates to the open pit and subsequent pit dewatering rates to achieve slope depressurization for pit slope stability and to maintain dry working conditions
- Assessment of surface water runoff dewatering rates based on a design storm, and
- Providing groundwater level monitoring recommendations.

Conceptual Hydrogeological Model of the Deposit Area

The estimates of the groundwater inflow rates and open pit slope depressurization were based on the understanding of the hydrogeological conditions developed using the following information available for the deposit area:

- Geological model (New Gold, 2013)
- Drilling, in-situ hydraulic testing, and groundwater levels at 12 geomechanical holes (KP, 2013b), four groundwater monitoring wells (KP, 2013c), and 11 observation holes within the deposit area, and
- Installation of two pumping wells within the deposit area and conducting two pumping tests.

Bedrock in the deposit area can be separated into two zones of hydraulic interest based on drilling, water levels, and pumping test results:

- A higher permeability zone with an estimated bulk hydraulic conductivity of 5×10^{-6} m/s. This zone is primarily located within the Fragmentals and Laminated Volcanics geologic units.
- A lower permeability zone with an estimated bulk hydraulic conductivity of 1×10^{-7} m/s. Even though hydraulic conductivity values are typically variable in a fractured rock environment such as the Blackwater project, this zone has a substantially lower hydraulic conductivity value than the higher permeability zone defined above. This zone is primarily located within the Andesite and Sediments geologic unit.

Pumping test results in the deposit area indicate the higher permeability bedrock zone is confined in all directions by the lower permeability bedrock or by other boundaries to groundwater flow.

Groundwater elevations within the higher permeability bedrock zone average 1,520 masl, with generally flat and hydrostatic hydraulic gradients. Groundwater elevations in the lower permeability bedrock zone immediately upslope of the proposed open pit area average 1,620 masl. Groundwater flow in the proposed open pit area is generally in a northerly direction. Groundwater within the lower permeability bedrock is generally expected to recharge the higher permeability bedrock unit over the upper half of the slope. Groundwater would then discharge from the higher permeability unit into the lower permeability unit along the downslope half (northern edge) of the deposit.

Groundwater Inflows and Dewatering Requirements

The current mine plan proposal is to develop the open pit over 15 years to a maximum depth of 535 m below ground level (mbgl). The pit dewatering system will be decommissioned in Year 15 and the pit will begin to fill with water while stockpiled low grade ore is processed through the mill.

Groundwater inflows to the open pit were estimated using an analytical approach and data collected during the two pumping tests. Groundwater inflows were calculated for eight segments equally spaced 45 degrees radially around the pit. Dewatering requirements were calculated for each segment corresponding to mining depths beneath the saturated thickness of the higher permeability bedrock zone of 50 m (Year 1), 100 m (Year 2), 200 m (Year 5), 300 m (Year 10), and 400 m (Year 14). Dewatering requirements were calculated as a combination of water removed from storage in the higher permeability bedrock zone and a steady state groundwater inflow from the surrounding lower permeability bedrock zone supplied by groundwater recharge.

Design of the open pit dewatering system for an economic evaluation consists of the following three sub-systems:

1. Surface water dewatering system: The 1 in 100 year return 24-hour storm was used to size the pit surface water management system and to assess the required duration of dewatering of the pit bottom following a storm. The total volume of surface water runoff was calculated by applying total precipitation depth (rainfall and snowmelt) over the open pit catchment area. The surface water dewatering system was designed for a maximum flow rate of 700 m³/hr sustained over a period of 2 to 14 days.
2. In-pit depressurization system: In-pit dewatering wells will be installed to remove water from storage in the higher permeability zone. The in-pit dewatering system will be adequate to lower and sustain the water table to 15 m below the estimated pit base elevation for each mining year.
3. Perimeter depressurization system: Perimeter dewatering wells will be established along the south high wall to lower and extend the cone of depression beyond the pit walls to the distances specified in the Feasibility Open Pit Slope Design Report (KP, 2013b). Perimeter dewatering wells are proposed where additional drawdown is required above that provided by in-pit dewatering wells.

A schedule for dewatering well installations is provided. Installation of perimeter dewatering wells and observation wells begins in Year -2 with additional perimeter dewatering well installations in Year -1 as required based on drawdowns observed in the field. Installation of backup pumping wells adjacent to all dewatering wells has been included in this design between Years 1 and 3. The capacity of the in-pit dewatering system is expanded in Year 6 with dewatering wells in the northern region of the pit. The proposed staged installation of pumping wells allows the dewatering system to be refined to suit field conditions as additional aquifer data is collected. The maximum groundwater dewatering rate for the depressurization system is estimated to occur in Year 6 at 60 L/s (990 USgpm). The dewatering rate at the Year 15 pit configuration is estimated to be 48 L/s (750 USgpm). These rates will be updated and refined based on hydrogeological and operational conditions encountered once the dewatering systems are operational.

The dewatering design provides a reasonable plan that is suitable for an economic evaluation for the feasibility study. This design includes minimum allowances for the number of perimeter dewatering and observation wells. Ongoing assessment of the dewatering system performance will be an integral part of future open pit water management.

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ABBREVIATIONS

ABX.....	Andesite Breccia
AND.....	Andesite
Blackwater.....	Blackwater Gold Project
cfm.....	cubic feet per minute
FLPT.....	Felsic Lapilli Tuffs
FT.....	Laminated Volcanics
Fragmentals.....	Fragmentals Bedrock
GW.....	Groundwater
hr.....	hour
IPI.....	Inflatable Packers International
KP.....	Knight Piésold Ltd.
m.....	meters
masl.....	meters above sea level
mbgl.....	meters below ground level
New Gold.....	New Gold Inc.
Norwest.....	Norwest Corporation
PAG.....	potentially acid generating
Precision.....	Precision Pumps and Services
PEA.....	Prefeasibility Economic Assessment
PW.....	pumping well
Richfields.....	Richfield Ventures Corp
RST.....	RST Instruments Ltd.
SED.....	Sediments
SWL.....	Static water level
TSF.....	Tailings Storage Facility
VC.....	Volcaniclastics
VWP.....	Vibrating Wire Piezometers
USgpm.....	US gallons per minute

1 – INTRODUCTION

1.1 PROJECT DESCRIPTION

The Blackwater Gold Project is a large gold-silver deposit located approximately 112 km southwest of Vanderhoof in central British Columbia, as shown on Figure 1.1. Key mine infrastructure for the Feasibility Study design includes the following:

- Open pit.
- Tailings Storage Facility (TSF), which consists of three zoned water-retaining earth-rockfill dams referred to as the Site C Dam, Site C West Dam, and Site D Dam.
- Waste rock dumps located adjacent to the open pit. Potentially acid generating (PAG) waste rock will be stored in the TSF.
- Overburden stockpiles.
- Ore processing facility.

The proposed Feasibility Study mine layout at the end of mine operations is shown on Figure 1.2.

1.2 PROJECT HISTORY

The Blackwater claim area was initially evaluated by Richfield Ventures Corp. (Richfield) starting in 2009. New Gold Inc (New Gold) acquired the Blackwater claim area through the acquisition of Richfield in June 2011. New Gold completed an extensive exploration drilling campaign to delineate the deposit area and completed condemnation drilling in proposed infrastructure areas. A preliminary economic assessment (PEA) was completed in 2012. The project was advanced to a Feasibility Study in late 2012 using the PEA layout and further refinement to the mine's general arrangement. Work required to obtain Provincial and Federal approval of an Environmental Assessment/Comprehensive Study has been conducted concurrently with the engineering studies.

1.3 SCOPE OF REPORT

Knightsold Ltd (KP) was retained by New Gold to complete a series of geomechanical, geotechnical, hydrometeorology, and hydrogeological site investigation programs to support the mine development concept and provide data for the engineering studies for the proposed TSF, open pit, waste rock dumps, and mine site infrastructure.

This report presents an evaluation of the hydrogeology in the area of the proposed open pit, and provides an interpretation of the hydrogeological conditions of the open pit area including:

- Hydrostratigraphic units
- Bulk hydraulic conductivity values
- Groundwater levels
- Inferred groundwater flow rates and direction
- Estimated groundwater inflows to the open pit
- Groundwater dewatering system recommendations, and
- Groundwater level monitoring recommendations.

Assessment of groundwater water quality for the Blackwater project is being reported by AMEC. Details and results of a groundwater quality investigation carried out in 2012 are provided in KP's

letter report: Blackwater Gold Project – 2012 Groundwater Quality Data Collection Summary (KP, 2013c).

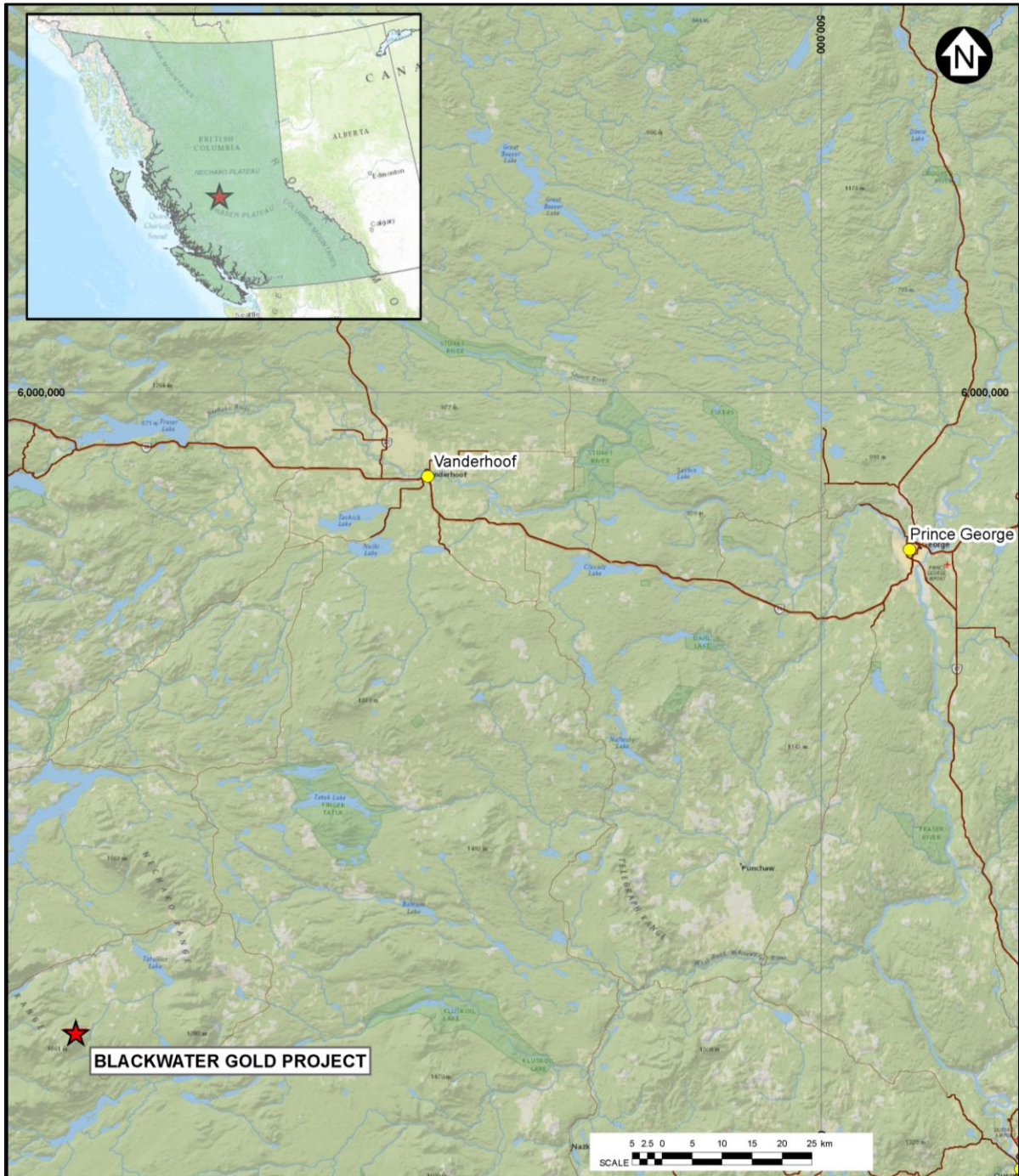


Figure 1.1 Project Location

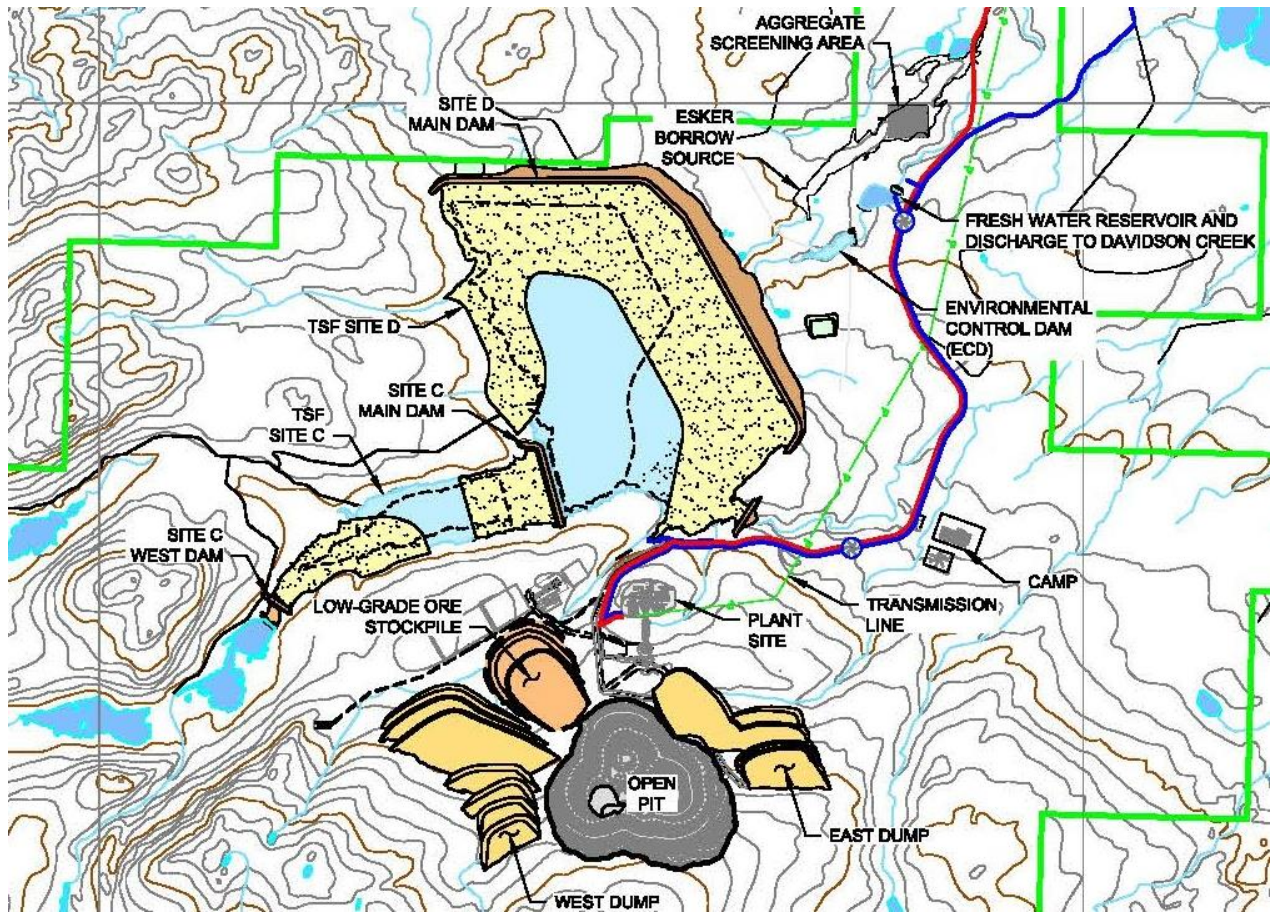


Figure 1.2 Mine Site Feasibility Study General Arrangement

2 – HYDROGEOLOGIC SETTING

2.1 SITE CHARACTERISTICS

The site characteristics in the Blackwater area have been previously described in detail in the hydrometeorology (KP, 2013a) and site investigation reports (KP, 2013f, g). These reports provide detailed information on:

- Climate
- Physiography
- Geomorphology and surficial geology, and
- Regional bedrock geology.

A brief summary of these site characteristics is provided below.

2.1.1 PHYSIOGRAPHY, CLIMATE, AND HYDROMETEROLOGY

The Blackwater Project area is situated on the Nechako Plateau, which is characterized by gently undulating northwest trending hills cut by small to medium sized drainages. The elevation of the Blackwater property ranges from approximately 1,000 m in low-lying areas northeast of the proposed mine site to 1,800 m at the summit of Mt. Davidson on the southwest side of the property. The deposit is located on the northern flanks of Mt. Davidson.

The climate is sub-continental and is characterized by warm summers and cold winters. The climate is influenced by cold arctic air and moisture-laden weather systems moving west along the Kitimat Range. Long-term synthetic precipitation and temperature records were developed for the project site (KP, 2013a). Based on these long-term records, the mean annual temperature is estimated to be 2.0°C, and minimum and maximum mean monthly temperatures are estimated to be -7.7°C in January and 12.5°C in July.

Average annual precipitation is estimated at 636 mm/yr, with mean monthly precipitation ranging from approximately 20 mm in April to 74 mm in November (KP, 2013a). The distribution of precipitation falling as rain and snow is estimated to be approximately equal. Average groundwater recharge across the Blackwater Project site is estimated as 75 mm/yr (KP, 2013d).

2.1.2 GEOLOGY

2.1.2.1 REGIONAL GEOLOGY

The region is underlain by rocks of the Stikine Terrain within the Nechako Uplift. The Nechako Plateau is an area of moderate relief between the Skeena Arch and the Stikine and Cache Creek Terrain contacts. Detailed information on the regional geology is found in the works of Diakow and Webster (1994), Diakow and Levson (1997), and Diakow et. al. (1997), the Open Pit Slope Design Report (KP, 2013b), and the 2013 Site Investigation Report (KP, 2013f).

2.1.2.2 LOCAL GEOLOGY

The description of bedrock geology at the Blackwater project is based on the geological interpretation of drillhole lithology by New Gold (New Gold, 2013). The project area is underlain by a sequence of volcanic and volcanoclastic felsic to intermediate composition rocks that form a local

'wedge' of discontinuous strata. Lithologies in the wedge include felsic tuffs and lapilli tuffs, volcanoclastic and epiclastic heterolithic breccias, and massive to layered andesites. Outcrops of massive, felsic lapilli tuff assigned to the Ootsa Lake Group are encountered on the peak and ridges of Mt. Davidson and bound the northern and western edges of the wedge. Bedded tuffs and sediments of the Jurassic Naglico Formation are observed at lower elevations near the Kluskus Road.

Quaternary glacial overburden covers the majority of the bedrock within the project area. Overburden in the deposit area is comprised of glacial till that generally consists of silty and gravelly sand and some poorly defined sandy silt layers (KP, 2013b). Overburden is nonexistent where bedrock outcrops along the peaks and ridges of Mt. Davidson and is estimated to be up to 110 m thick east of the deposit (KP, 2013b).

2.1.2.3 DEPOSIT GEOLOGY

A geological model of the deposit area has been developed by New Gold based on an extensive exploration drilling database. The current geological model was provided to KP by New Gold in February 2013 (New Gold, 2013) and incorporates the inferred distribution of five main geological units found in the deposit area:

- Overburden
- Andesite (AND)
- Fragmentals Bedrock (Fragmentals), consisting of Felsic Lapilli Tuffs (FLPT), Volcaniclastics (VC), and Andesite Breccia (ABX)
- Laminated Volcanics (FT), and
- Sediments (SED).

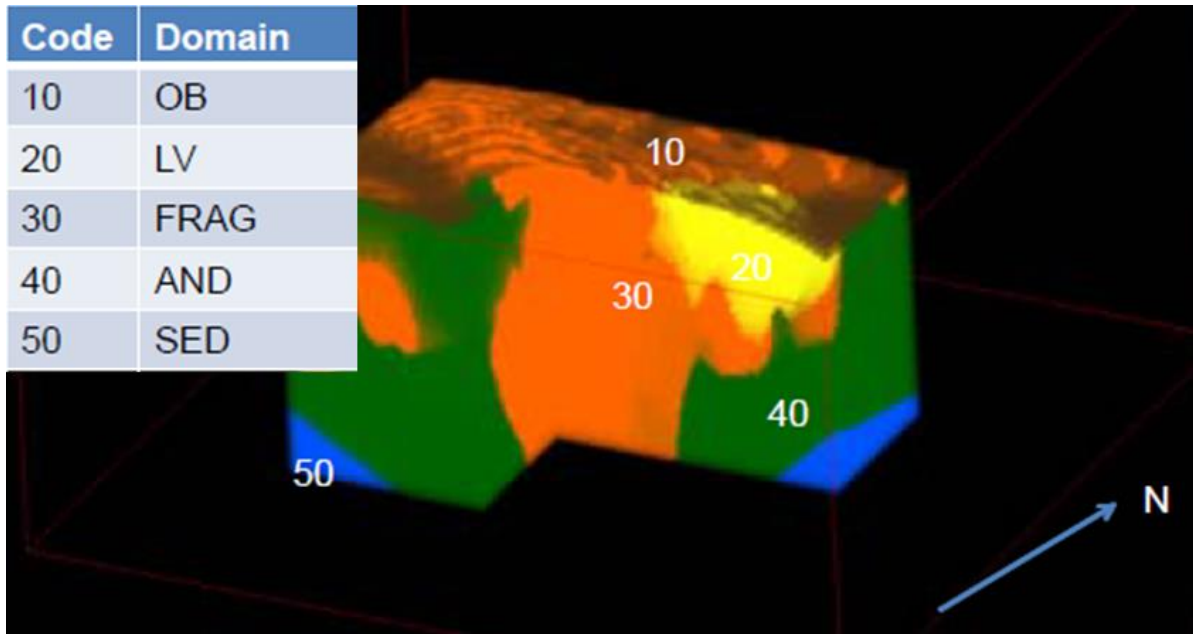
New Gold's geological model is presented on Figure 2.1 and shows zones of broken and altered bedrock (Fragmentals and FT) laterally surrounded by AND and SED. The geological model of the deposit area is discussed further in the Feasibility Open Pit Slope Design Report (KP, 2013b).

Additional description of the deposit geology is presented in the Blackwater Gold Project Technical Report (GeoSim Services Inc., 2012). The bedrock is described as pervasively hydrofractured and silicified. The amount of silica, introduced through hydrofracturing and silicification, may amount to more than 25% of the total volume of the volcanic rocks. Although intensely hydrofractured, the deposit lacks clearly recognizable large-scale faults or shear zones. Extensive zones of broken rock are observed in the deposit, especially within the mineralized region. Broken zones grade laterally into unbroken rock and are generally not bounded by distinct faults.

Bedrock in the deposit area has been classified into two zones designated by rock quality designation based on the results of resource and geomechanical drilling (RQD; KP, 2013b; New Gold, 2013):

- A Broken zone containing intensely fractured rock (RQD < 40), and
- A Competent Rock zone of higher quality rock (RQD > 40).

An estimated spatial distribution of the zones designated by RQD was used in the initial design for the bedrock pumping test program.



Source: Blackwater Geology Model Presentation, New Gold Inc., January 2013

Figure 2.1 Blackwater Deposit Lithology Model

NOTES:

1. NUMBER LABELS CORRESPOND TO FIVE MAIN GEOLOGIC UNITS IN THE DEPOSIT AREA: OVB (OVERBURDEN), LV (LAMINATED VOLCANICS), FRAG (FRAGMENTALS BEDROCK), AND (ANDESITE), AND SED (SEDIMENTS UNIT).

2.1.3 HYDROSTRATIGRAPHIC UNITS

The results of the hydrogeological investigation programs were used to define the hydrostratigraphic units in the deposit area. A hydrostratigraphic unit is a unit of soil or rock that is distinguishable from other stratigraphic units on the basis of lithology and physical properties including grain size, weathering, porosity, and permeability. Hydrostratigraphic units within the deposit area inferred from the results of this investigation include:

- Overburden: Overburden consisting of glacial till, generally comprised of silty and gravelly sand and some poorly defined sandy silt layers. The terrain in the deposit area is generally hummocky with overburden varying from 5 to 20 m in thickness. The overburden unit has not been the primary target of the field investigations conducted for the open pit hydrogeological evaluation as it will not be a major pathway of groundwater flow into the open pit.
- Bedrock: Two bedrock zones have been defined on the basis of hydrogeologic testing, piezometric level monitoring, and geological interpretations:
 - A higher permeability bedrock zone of bedrock with an estimated bulk hydraulic conductivity of 5×10^{-6} m/s. This unit is generally associated within the Fragmentals and Laminated Volcanics (LF) lithological units.
 - A lower permeability bedrock zone with an estimated bulk hydraulic conductivity of 1×10^{-7} m/s. Even though hydraulic conductivity values are typically variable in a fractured rock environment such as the Blackwater project, this zone has a substantially lower hydraulic conductivity value than the higher permeability zone defined above. This unit is generally spatially confined to the SED and AND units.

- **Weathered Bedrock:** Although not characterized by the in-situ hydraulic testing, a near surface layer of elevated hydraulic conductivity bedrock caused by unloading and weathering is expected within the deposit area. Such a layer would appear to be less than 50 m thick in the area of the Blackwater deposit.

The distribution of the higher and lower permeability zone within the proposed open pit is shown in plan view on Figure 2.2 and in four cross sections of the pit shown on Figures 2.3 and 2.4.

The SED unit, noted in the southeast portion of the site is comprised of mudstone, sandstone, and conglomerate rocks of the Bowser Lake Group (KP, 2013b). The AND unit contact with the SED unit was noted in drill holes PW13-3, GM12-02, and GM12-03, all of which are located in the southeastern portion of the Blackwater site. Within these drillholes the contact was noted at depths between 300 and 320 mbgl. The SED unit was not encountered in any other drillholes, which were advanced to maximum depths of 280 to 485 mbgl.

2.2 SITE INVESTIGATIONS

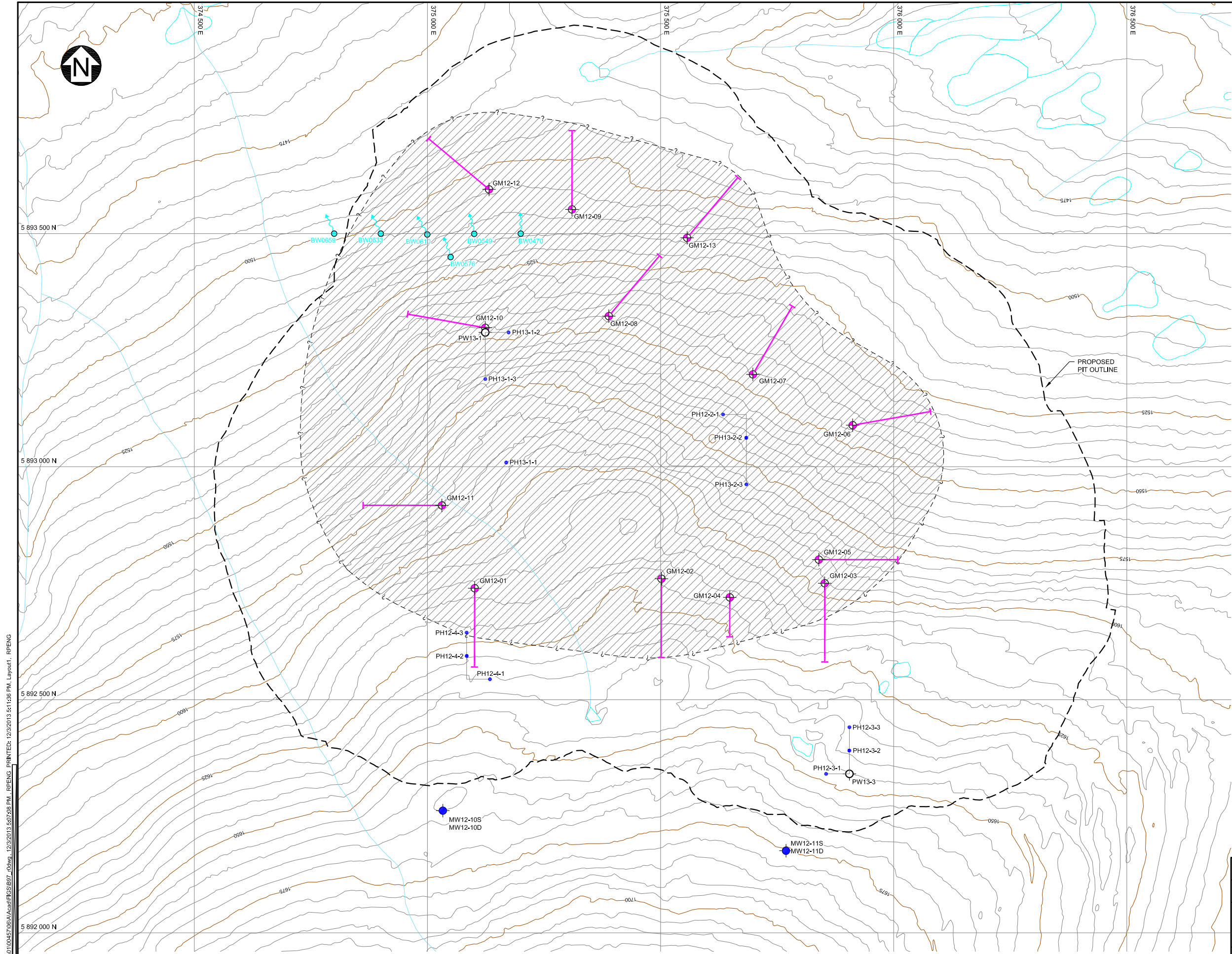
The following drill holes and installations were completed during site investigations in the deposit area:

- Thirteen inclined geomechanical drill holes (GM12-01 to GM12-13)
- Twelve observation wells (2012 to 2013) with multiple vibrating wire piezometer (VWP) strings
- Two pumping wells (PW13-1 and PW13-3), and
- Four groundwater monitoring wells (MW12-10S/D and MW12-11S/D).

Locations of the drill holes are shown on Figure 2.2. Geomechanical drill hole logs are presented in the Feasibility Open Pit Slope Design Report (KP, 2013b). Drill hole and well construction logs for the observation wells and pump wells are included in Appendix A. Drill hole logs and well installation details for monitoring wells are presented in KP (2013c). The results of hydraulic testing from geomechanical drill holes, observation wells, and monitoring wells are summarized in Table B1.1 in Appendix B1.

Data collected during the geomechanical and exploration drilling programs was used to create a preliminary design for the pumping test program. The design of the pumping test program was updated as additional data was collected. The design of the pumping test program followed these general steps:

- Four pumping wells were initially sited for the open pit pumping test program. Two pumping wells were sited within each of the Broken and Competent Rock zones identified based on the earlier geomechanical and exploration drilling programs (KP, 2013b). Three observation wells were installed at each of the four proposed pumping well locations. Observation wells were arranged in an 'L-shape' surrounding each pumping well. Hydraulic testing was conducted in observation well drill holes to identify subsurface zones that produced water. Locations of observation wells were adjusted as required during the field program.
- The design of the pumping test program was refined using results from the observation well drilling and in-situ hydraulic testing.
- Two pumping wells were installed for the pumping test program.
- A four-stage step test (four hours in duration) and a one week constant rate pumping test were conducted at each of the pumping wells. The response to pumping was monitored at the pumping well and at VWPs installed in observation wells.



GEOMECHANICAL DRILLHOLES					
HOLE ID.	EASTING (m)	NORTHING (m)	AZIMUTH (°)	DIP (°)	DEPTH (m)
GM12-06	375,912	5,893,089	080	-65	400
GM12-07	375,698	5,893,198	030	-65	400
GM12-08	375,389	5,893,323	040	-65	400
GM12-09	375,300	5,893,550	-	-65	400
GM12-10	375,124	5,893,298	280	-65	400
GM12-11	375,031	5,892,917	270	-65	400
GM12-12	375,134	5,893,593	310	-65	400
GM12-13	375,554	5,893,488	040	-65	400

OBSERVATION WELLS					
HOLE ID.	EASTING (m)	NORTHING (m)	AZIMUTH (°)	DIP (°)	DEPTH (m)
PH13-1-1	375,169	5,893,009	-	-90	283
PH13-1-2	375,174	5,893,288	-	-90	485
PH13-1-3	375,174	5,893,188	-	-90	485
PH12-2-1	375,632	5,893,112	-	-90	327
PH13-2-2	375,684	5,893,062	-	-90	430
PH13-2-3	375,684	5,893,012	-	-90	433
PH12-3-1	375,853	5,892,341	-	-90	302
PH12-3-2	375,903	5,892,391	-	-90	302
PH12-3-3	375,903	5,892,441	-	-90	299
PH12-4-1	375,136	5,892,544	-	-90	349
PH12-4-2	375,086	5,892,594	-	-90	350
PH12-4-3	375,086	5,892,644	-	-90	351

PUMP WELLS					
HOLE ID.	EASTING (m)	NORTHING (m)	AZIMUTH (°)	DIP (°)	DEPTH (m)
PW13-1	375,124	5,893,288	-	-90	302
PW13-3	375,905	5,892,341	-	-90	302

LEGEND :

- PUMP WELLS WITH OBSERVATION WELLS @ 50 m & 100 m DISTANCE
- GEOMECHANICAL DRILLHOLES (13)
- MONITORING WELLS (4)
- ARTESIAN EXPLORATION DRILLS
- ESTIMATED EXTENT OF HIGHER PERMEABILITY ZONE

- NOTES:**
- CONTOUR INTERVAL IS 5 METRES.
 - OPEN PIT DESIGN BY NORWEST CORPORATION (AUG. 2013).



NEW GOLD INC.

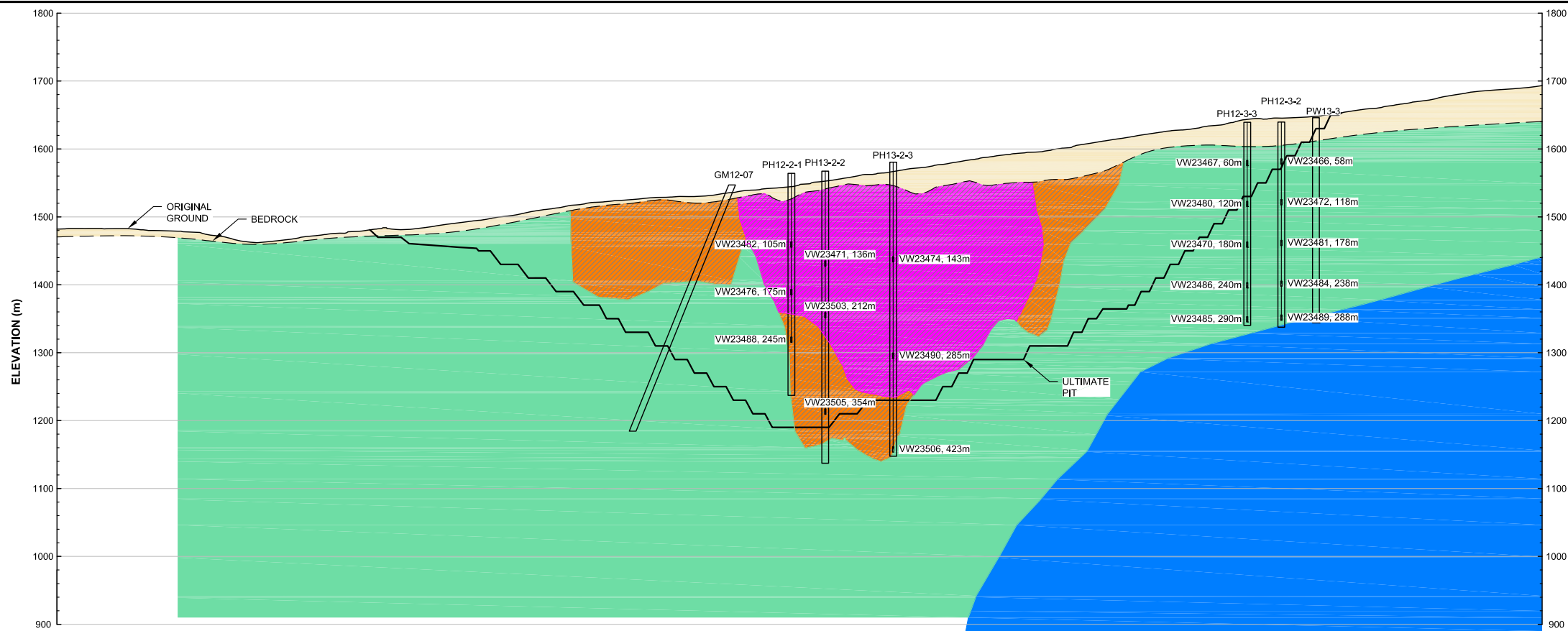
BLACKWATER GOLD PROJECT

**OPEN PIT HYDROGEOLOGICAL DATA AND
INFERRED SPATIAL DISTRIBUTION OF
HIGHER PERMEABILITY BEDROCK ZONE**

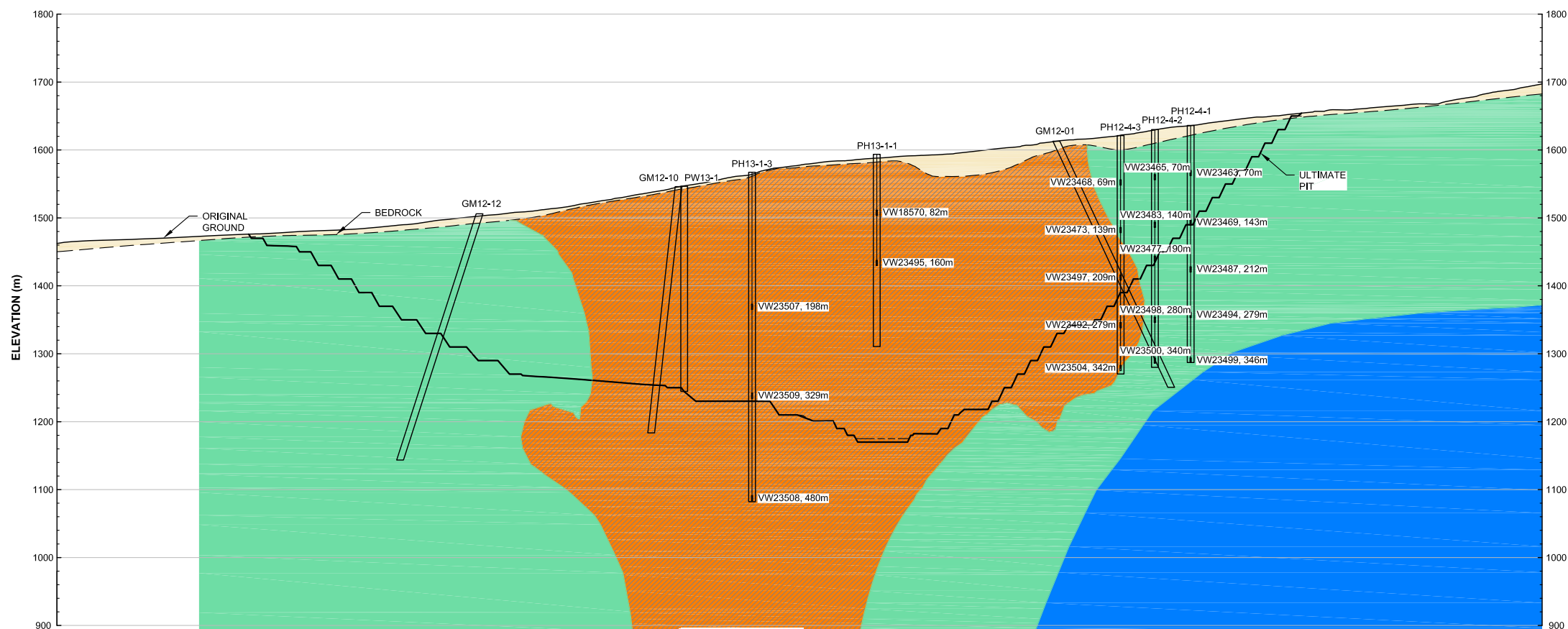
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PIA NO. VA101-457/6	REF NO. 9
FIGURE 2.2	

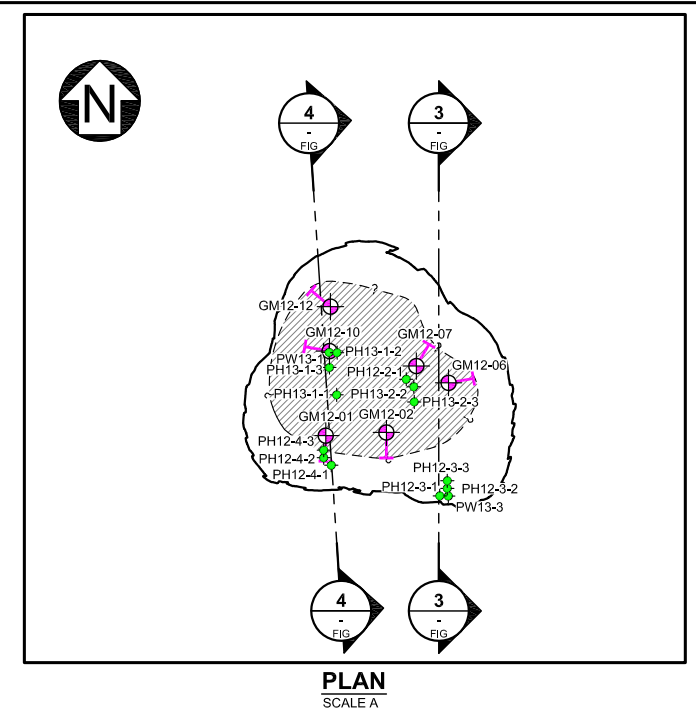
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SCALE B



4 SECTION
- FIG
SCALE B

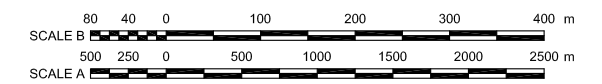


LEGEND:

- OVERBURDEN
- INFERRED HIGHER PERMEABILITY ZONE
- BEDROCK
- ANDESITE
- FRAGMENTAL
- LAMINATED VOLCANICS
- SEDIMENTARY
- GM GEOMECHANICAL DRILLHOLES
- PH12-4-1 MONITORING WELL

NOTES:

1. COORDINATE GRID IS UTM NAD83 ZONE 10 U.
2. PLAN/SECTION BASED ON INFORMATION PROVIDED BY NEW GOLD GEOLOGICAL MODEL, DATED FEBRUARY 2013.
3. OPEN PIT DESIGN PROVIDED BY NORWEST, AUGUST 2013.



NEW GOLD INC.	
BLACKWATER GOLD PROJECT	
OPEN PIT CROSS SECTIONS 3 AND 4	
<i>Knight Piésold</i> CONSULTING	P/A NO. VA101-457/6 REF NO. 9 FIGURE 2.4

SAVED: M:\1010457\06\AA\cad\FIGS\B105_0_12/2/2013 5:08:02 PM . RPENG PRINTED: 12/2/2013 5:13:08 PM Layout1, RPENG

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	CHK'D	APP'D
0	29NOV'13	ISSUED WITH REPORT	FTJ	RP	CAS	KJB

2.2.1 GEOMECHANICAL HOLES

Thirteen geomechanical drillholes were completed within the proposed open pit area in 2012. All geomechanical drillholes were inclined at -65° and passed through the proposed final pit walls. The geomechanical drilling program was completed by Falcon Drilling Ltd. and Hytech Drilling Ltd. under the supervision of KP. Bedrock drilling was accomplished using HQ3 drill rods with a 1.5 m core barrel. Orientation of structural discontinuities was collected using the Reflex ACT II digital core orientation tool. Downhole deviation surveys were carried out at approximately 50 m intervals in all the drillholes with a Reflex borehole survey instrument. Further information on the geomechanical site investigation is provided in the Feasibility Open Pit Slope Design Report (KP, 2013b).

2.2.2 OBSERVATION WELLS

Twelve HQ-size observation wells were drilled at four proposed pumping well locations by Paycore Drilling under the supervision of KP. The drill holes were advanced using a diamond drilling rig between November 2012 and February 2013. Three observation wells were installed at each proposed pumping well location. With the exception of PW13-1, observation wells were located between 50 m and 150 m from each proposed pump well location and were arranged in an 'L-shaped' fashion. The field program was adapted at PW13-1 based on conditions encountered in the field, and the actual location of observation well PH13-1-1 is 185 m from pumping well PW13-1. Geological logging of drill core was completed by KP and New Gold and is provided in Appendix A1.

2.2.3 VIBRATING WIRE PIEZOMETERS

VWPs were installed in all geomechanical drill holes except GM12-12 due to artesian conditions within the drill hole. Details of the VWP installations are provided in the Feasibility Open Pit Slope Design Report (KP, 2013b) and are summarized in Table 2.1.

VWPs were installed in each of the observation wells to obtain hydraulic head measurements within the proposed open pit area. Five VWPs were installed in each observation well along the southern pit wall and three VWPs were installed in each observation well in the remainder of the deposit area. All VWPs and data loggers were supplied by RST Instruments Ltd. (RST). Single node standard VWP's (model VW2100) were installed at shallow depths up to 250 meters below ground level (mbgl) and heavy-duty VWPs (model VW2100-HD) were installed at depths below 250 mbgl. Installations were accomplished by attaching the VWP transducer to 1-inch Schedule 80 PVC pipe and lowering it to the target depth within the drill hole. The annular space within the entire hole was then backfilled with a grout bentonite mixture. Drill holes were filled with water prior to grouting to provide a calibration point of water pressure reference for VWP water level calculations. Observation well details and corresponding VWP installation depths are presented in Appendix A1 and are summarized in Table 2.2.

VWP installation depths were chosen to capture hydrogeological information at various depths in the bedrock, and where possible, spanning interpreted shear or fault zones. All proposed VWPs were successfully installed with the exception of VWP3 (VW23474) in PH13-2-3, where the drill rods could not be removed from the drillhole to allow proper connectivity with the aquifer. Data is unavailable from VWP1 (VW23488) in PH12-2-1 due to sensor malfunction.

Table 2.1 Summary of Vibrating Wire Installations in Geomechanical Drill Holes

Drill Hole	Location	Collar Elevation (m)	Downhole Vertical Depth (m)	Piezometric Head Depth (m)	Piezometric Head Elevation (m)
GM12-01	South Wall	1613.1	10.9	-10	1623
GM12-02	South Wall	1620.9	88.8	29	1592
GM12-03	South & East Walls	1596.5	85.0	11	1586
GM12-04	South Wall	1617.2	81.6	83	1534
GM12-05	East Wall	1592.2	117.8	18	1574
			72.5	37	1555
GM12-06	East Wall	1545.3	251.0	11	1535
			152.3	10	1535
			99.7	11	1535
GM12-07	East Wall	1546.6	286.4	35	1511
			198.5	37	1509
			135.9	18	1529
GM12-08	East & North Walls	1545.1	176.5	VWP is damaged	
GM12-09	North Wall	1509.5	316.6	45	1464
			189.2	-9	1519
			140.2	10	1499
GM12-10	West Wall	1546.4	335.3	VWP is damaged	
			145.0	18	1529
			72.5	17	1530
GM12-11	West Wall	1586.8	293.6	61	1526
			194.9	58	1529
			139.6	53	1534
GM12-12	North Wall	No VWPs installed - drillhole was artesian			
GM12-13	East and North Walls	1515.5	290.0	16	1499
			165.6	18	1497
			87.0	15	1500

NOTES:

1. DATA IS SUMMARIZED FROM FEASIBILITY OPEN PIT SLOPE DESIGN REPORT (KP, 2013b)
2. GM12-08 VIBRATING WIRE PIEZOMETER IS INOPERABLE DUE TO AN INSTALLATION ISSUE.
3. VW DATA WAS DOWNLOADED ON 2 FEB, 2013.

TABLE 2.2

**NEW GOLD INC.
BLACKWATER GOLD PROJECT**

SUMMARY OF OBSERVATION WELL DRILLING AND VIBRATING WIRE PIEZOMETER DATA

Print Dec/05/13 9:42:00

Observation Well ID	Installation Date	Coordinates ¹		Elevation masl	Drillhole Total Depth mbgs	Depth to Bedrock mbgs	Groundwater Depth ² mbgs	Vibrating Wire Piezometers Number	Probe Serial Number	Installation Depth mbgs	VWP Elevation masl	Piezometric Head masl	Vertical Hydraulic Gradient	Notes
		Northing m	Easting m											
		PH13-1-1	Jan. 21, 2013											
PH13-1-2	Feb. 5, 2013	5,893,288	375,174	1,546	485	8	17.3 29.4 28.3	VWP 1 VWP 2 VWP 3	VW23510 VW23501 VW23502	477 212 365	1,072 1,337 1,184	1,532 1,520 1,521	Negligible/ Upward	ERROR IN VWP1 TEMPERATURE READINGS
PH13-1-3	Feb. 5, 2013	5,893,188	375,124	1,564	485	3	47.4 46.9 46.2	VWP 1 VWP 2 VWP 3	VW23508 VW23509 VW23507	480 329 198	1,087 1,238 1,366	1,520 1,520 1,518	Negligible	-
PH12-2-1	Jan. 13, 2013	5,893,112	375,633	1,565	327	10	- 47.3 43.3	VWP 1 VWP 2 VWP 3	VW23488 VW23476 VW23482	245 175 105	- 1,389 1,459	- 1,517 1,521	Downward	VWP1 NOT FUNCTIONING
PH13-2-2	Feb. 26, 2013	5,893,062	375,684	1,568	430	7	45.0 40.9 36.3	VWP 1 VWP 2 VWP 3	VW23505 VW23503 VW23471	354 212 136	1,213 1,355 1,431	1,522 1,526 1,531	Downward	-
PH13-2-3	Feb. 16, 2013	5,893,012	375,684	1,582	433	8	56.4 50.8 37.7	VWP 1 VWP 2 VWP 3	VW23506 VW23490 VW23474	423 285 143	1,158 1,296 1,437	1,525 1,530 1,542	Downward	VWP3 DOES NOT HAVE PROPER CONNECTIVITY WITH THE SURROUNDING FORMATION, RODS ARE STUCK IN THE LOWER PORTION OF THE BOREHOLE.
PH12-3-1	Nov. 15, 2012	5,892,341	375,855	1,649	302	24	-3.4 ³ 16.2 13.7 15.3 13.4	VWP 1 VWP 2 VWP 3 VWP 4 VWP 5	VW23496 VW23493 VW23475 VW23478 VW23464	290 235 175 105 43	1,358 1,413 1,473 1,543 1,605	- 1,632 1,634 1,633 1,635	Alternating	-
PH12-3-2	Dec. 1, 2012	5,892,390	375,905	1,641	302	36	16.5 10.6 6.7 7.0 5.5	VWP 1 VWP 2 VWP 3 VWP 4 VWP 5	VW23489 VW23484 VW23481 VW23472 VW23466	288 238 178 118 58	1,352 1,402 1,462 1,522 1,582	1,624 1,629 1,633 1,633 1,634	Downward	-
PH12-3-3	Nov. 24, 2012	5,892,441	375,905	1,640	299	40	14.3 12.8 9.9 8.8 14.7	VWP 1 VWP 2 VWP 3 VWP 4 VWP 5	VW23485 VW23486 VW23470 VW23480 VW23467	290 240 180 120 60	1,349 1,399 1,459 1,519 1,579	1,625 1,626 1,629 1,630 1,624	Alternating	-
PH12-4-1	Nov. 28, 2012	5,892,543	375,138	1,637	349	6	29.2 28.8 28.0 23.1 29.5	VWP 1 VWP 2 VWP 3 VWP 4 VWP 5	VW23499 VW23494 VW23487 VW23469 VW23463	346 279 212 143 70	1,290 1,357 1,424 1,493 1,566	1,607 1,607 1,608 1,613 1,607	Alternating	-
PH12-4-2	Dec. 5, 2012	5,892,593	375,087	1,631	350	4	19.1 17.8 14.0 12.6 11.3	VWP 1 VWP 2 VWP 3 VWP 4 VWP 5	VW23500 VW23498 VW23477 VW23483 VW23465	340 280 190 140 70	1,290 1,350 1,440 1,490 1,560	1,611 1,612 1,616 1,617 1,619	Downward	-
PH12-4-3	Dec. 12, 2012	5,892,643	375,087	1,622	351	5	95.2 96.0 85.1 22.8 9.9	VWP 1 VWP 2 VWP 3 VWP 4 VWP 5	VW23504 VW23492 VW23497 VW23473 VW23468	342 279 209 139 69	1,280 1,343 1,413 1,483 1,553	1,526 1,525 1,536 1,598 1,611	Downward/ Negligible	-

M:\1101\00457\06\A\Report9 - Open Pit Water Management Plan\Tables\Table 2.2 Summary of Observation well drilling and installation_sjl.xlsx\Table 2.1

NOTES:

- COORDINATE SYSTEM: UTM10 NAD 83, SURVEYING COMPLETED BY ALLNORTH, AUGUST 2013.
- THE PIEZOMETRIC HEAD WAS OBTAINED FROM DATA RECORDED ON MARCH 20, 2013 AT ALL BOREHOLES EXCEPT PH13-1-2 AND PH13-1-3, WHICH WERE OBTAINED FROM DATA RECORDED ON MARCH 18, 2013.
- WATER LEVEL MAY BE IN ERROR. ARTESIAN CONDITIONS WERE NOT OBSERVED IN THE FIELD.
- A DESIGNATION OF ALTERNATING INDICATES THAT THE VERTICAL HYDRAULIC GRADIENT TRANSITIONS BETWEEN UPWARD AND DOWNWARD WITH DEPTH ALONG THE OBSERVATION WELL.

REV	DATE	DESCRIPTION	FTJ	CAS	KJB
0	29NOV13	ISSUED WITH REPORT VA101-4576-9			
			PREPD	CHKD	APPD

2.2.4 PACKER TESTING, AIRLIFT TESTING, AND RESPONSE TESTING

In-situ hydraulic conductivity tests using airlifting and/or packer testing methods were carried out at 20 to 60 m intervals in the geomechanical holes and during drilling of the observation wells. Response testing was carried out in monitoring wells installed south of the deposit area. Analyses of hydraulic testing conducted in geomechanical drill holes are presented in the Feasibility Open Pit Slope Design Report (KP, 2013b), analyses of hydraulic testing conducted in the drill holes of observations wells are presented in Appendix B1, and analyses of tests completed in groundwater monitoring wells are presented in KP Blackwater Gold Project – 2012 Groundwater Quality Data Collection Summary (KP, 2013c). A summary of the packer testing, airlift testing, and response testing results are provided in Table B1.1 in Appendix B1.

2.2.4.1 Geomechanical Drillholes:

In-situ packer hydraulic conductivity testing was undertaken at select depths in geomechanical holes using a water-inflatable (hydraulic) packer system supplied by Inflatable Packers International (IPI). Both Lugeon and response test methods were utilized in order to obtain a hydraulic conductivity estimate approximately every 15 to 30 m. Packer tests were not undertaken on drill hole GM12-12 due to the artesian pressures encountered within the drill hole. All geomechanical drill holes were advanced using polymer-based drill mud (and sometimes bentonite) to stabilize the drill hole. The drill hole was flushed with water prior to each test in an effort to remove any drilling additives or debris that could potentially influence the test results. Even though the hole was flushed until the return water was clean, the use of drilling additives may have impacted the hydraulic conductivity test results.

The packer testing procedure consisted of removing the core tube and pulling enough drill rods from the drill hole to expose the section to be tested. Next, the packer equipment was lowered inside the drill rods and the packer was inflated just below the drill bit to isolate the interval to be tested with a Lugeon test or falling head test. Test lengths varied from 3 to 37 m. Details of the packer testing are provided in the Feasibility Open Pit Slope Design Report (KP, 2013b).

2.2.4.2 Observation Wells

Airlift tests were conducted using 20 cm diameter perforated rods that were specially fabricated for the investigation. The test zone was flushed with water to remove drilling fluids or debris prior to hydraulic testing. Drill holes were flushed with water until the return water was clean. The zone to be tested was exposed by pulling back the drill rods to expose the formation interval. Perforated rods were lowered into the drill rods and a trailer-mounted air compressor, rated at 400 cubic feet per minute (cfm), was used to inject air down the perforated rod to displace water from the drill hole. Water level measurements were recorded using a down-hole pressure transducer suspended below the perforated rods. The volume of water displaced was measured during airlift testing to provide information on the potential yield and hydraulic conditions surrounding the observation wells. The length of the tested interval typically varied between 20 and 75 m.

Falling head packer tests were completed in select observation wells using the same packer testing procedure described above for tests conducted in geomechanical drill holes. Upon inflating the packer, the rods were either filled with water to surface or a volume of water was measured through a flow meter and added inside the rods. The change in water level was measured over time using a

downhole pressure transducer. The length of the packer tested interval typically varied between 20 and 50 m.

2.2.4.3 Groundwater Monitoring Wells

Response tests were completed in two monitoring wells MW12-11S/D located 80 m to the south of the deposit area. Response tests were completed after well development. Monitoring wells MW12-10S/D were not tested; the water level recovery following development of MW12-10D was insufficient to perform a test and MW12-10S was dry. The procedures used for these tests are described in Blackwater Gold Project – 2012 Groundwater Quality Data Collection Summary (KP, 2013c).

2.2.5 PUMPING WELLS

The installation of four pumping wells was initially planned as part of the hydrogeological investigation program. However, only two pumping wells were recommended by KP for installation based on a review and interpretation of the results of the hydraulic testing at the observation wells. These pumping wells (PW13-1 and PW13-3) were installed by Drillwell Enterprises Ltd. (Drillwell) using a dual rotary air rig between June and July 2013. The location of PW13-1 was selected to target the higher permeability bedrock zone within the deposit area and the location of PW13-3 targeted the lower permeability bedrock zone to provide information for slope depressurization along the southern high wall.

The pumping wells were installed using a telescope method of drilling and well installation, which involved reducing the casing diameter with depth below surface. The telescope method of drilling maintains drill hole stability by temporarily casing off unstable sections of the borehole. All pump wells had 16-inch diameter, mild steel casing installed at surface, which was used to case the overburden material and maintain overburden stability during drilling. The open hole diameter and cased drillhole diameter were reduced as drilling conditions became more difficult with depth. Final drill hole diameters were determined by drill hole stability, target well depths, required flow rates, and pump sizes. Geologic formations, discharge water rates, chip characteristics, and fractures were noted during drilling. Information collected during drilling was used to design the well construction and select zones for screen placement, to ensure that major water bearing structures were targeted. No drilling additives were used during the pump well drilling. Both wells were developed after drilling and installation until the discharge water was clear of fines. A summary of pumping well installations is described below and the well completion details are summarized in Table 2.2. Pumping well construction logs are provided in Appendix A2 and photos of the pumping well installations are provided in Appendix A3.

2.2.5.1 Pumping Well PW13-1

Pumping well PW13-1 was advanced to a depth of 302.5 mbgl. The target depth for the well of 485 mbgl was decreased due to unstable ground conditions and high groundwater inflow rates which limited the maximum depth that the drill hole could be advanced while maintaining the specified casing size and schedule requirements. The well screen in PW13-1 extended from 119.1 to 296.4 mbgl and was comprised of Variperms 8-inch, perforated carbon steel pipe with 9.4% open area. A picture of the Variperms 8-inch perforated carbon steel pipe with 9.4% open area used for PW13-1 and PW13-3 is shown in Appendix A3.

Airlift tests were conducted during drilling to estimate the well yield and were conducted in zones producing water. Water production rates from airlift tests conducted during drilling ranged up to 41 L/s (650 USgpm) and are shown on the pumping well construction logs in Appendix A2. Anecdotal drilling comments and water production observations by Drillwell and KP field staff indicated a high productive water zone existed below 100 m, with very poor drill hole stability.

2.2.5.2 Pumping Well PW13-3

Pumping well PW13-3 was advanced to 301.8 mbgl. The well screen in PW13-3 was comprised of 60 m of Variperme 8-inch, perforated carbon steel pipe with 9.4% open area. The 60 m of screen was split into five discrete sections between depths of 125.1 to 292.7 mbgl that targeted high water producing zones noted during drilling. The depths of the screened intervals are listed in Table 2.2 and are shown on the well completion log in Appendix A2. Water production rates from airlift tests conducted during drilling ranged up to 6 L/s (100 USgpm) and are shown on the pumping well construction logs in Appendix A2.

Table 2.3 Pumping Well Installation Summary

Pumping Well	Date Installed	Coordinates ¹		Elevation n	Drillhole		Casing Size Depth mbgl		Total Depth mbgl	Depth to Bedrock mbgl	Screened zone (mbgl) ²	
		Northing	Easting		Size	Depth	Size	Depth			from	to
		m	m		masl	m	mbgl	m				
PW13-1	18-Aug-13	5,893,288	375,124	1,531	0.41 (16")	To 88.4	0.41 (16")	To 5.1	302.5	2.1	119.1	296.4
					0.30 (12")	To 233.2	0.30 (12")	To 105.2 m				
					0.25 (10")	To 302.5	0.20 (8")	From 91.3 m to 302.5 m				
PW13-3	10-Jun-13	5,892,341	375,905	1,655	0.41 (16")	To 91.5	0.41 (16")	To 41.9 m	301.8	37.8	125.1	131.1
					0.30 (12")	To 162.1	0.30 (12")	To 102.8 m			140.2	146.3
					0.25 (10")	To 301.8	0.20 (8")	To 298.5 m			161.6	173.3
											198.2	216.5
										274.4	292.7	

NOTES:

1. LOCATIONS WERE SURVEYED BY ALLNORTH CONSULTANTS LTD. AUGUST 2013, IN UTM10 NAD93.
2. THE WELL SCREEN IN PW13-1 IS DIVIDED INTO FIVE DISCRETE SCREENED ZONES WITH A TOTAL LENGTH OF 60.4m.

2.2.6 PUMPING TESTS

The pumping tests at PW13-1 and PW13-3 were completed by Precision Pumps and Services (Precision) in July and August 2013, with KP providing technical direction and field supervision. Precision used Grundfos submersible pumps with electronic flow control meters for all testing. A four-stage step test was initially conducted to define the constant rate pumping test. Details related to the testing at each well include:

- PW13-1: Step and constant rate pumping tests were conducted with an 8-inch submersible pump lowered to a depth of 90 m. The step test was conducted on July 25, 2013 and the constant rate test was conducted from July 25 to August 2, 2013. Pumping rates for each stage of the step test varied from 125 USgpm to 500 USgpm and each step continued for a 1 hour period. The design pump rate for the 168 hour constant rate test was specified at 500 USgpm based on the results of the step test.
- PW13-3: Step and constant rate pumping tests were conducted with a 6-inch submersible pump lowered to a depth of 92 m. The step test was conducted on July 18, 2013 and the constant rate test was conducted from July 19 to July 22, 2013. Pumping rates for each stage of the step test varied from 25 USgpm to 100 USgpm and each step continued for a 1 hour period. The design pump rate for the 92 hour constant rate test was specified at 50 USgpm based on the results of the step test.

Step test and constant rate pumping test data for PW13-1 and PW13-3 are presented in Appendix B3 and Appendix B4, respectively.

The aquifer response to the pumping tests was monitored using VWPs in the surrounding observation wells. VWP logging rates were set at one minute intervals to collect water level changes during the pumping and recovery periods. Water levels were also monitored in the pumping wells during the testing. Water level recovery within each well was monitored until 95% recovery of the pre-test water level was achieved. Water level recovery was monitored in PW13-1 over a period of 2 weeks, at which time 95% recovery had not been achieved but the rate of recovery had been stable for 1 week.

Discharge water from the pumping test was released a sufficient distance away from the well to minimize the likelihood of artificially recharging the aquifer and affecting drawdown observations. Discharge water quality (pH, redox, electrical conductivity, and temperature) was monitored throughout the constant rate pumping tests. The water quality measurements were consistent throughout the constant rate tests at PW13-1 and PW13-3. Manual water flow rates from the discharge point were measured to check the electronic flow meter readings.

2.3 SITE INVESTIGATION RESULTS

2.3.1 PACKER TESTING, AIRLIFT TESTING, AND RESPONSE TESTING

A summary of hydraulic conductivity results from the packer tests, airlift tests, and response tests is provided in Table B1.1 in Appendix B1. Hydraulic conductivity versus depth plots are shown on Figures B1.1 to B1.3 and a plot of the distribution of hydraulic conductivity values is presented as Figure B1.4.

A total of 12 geomechanical holes were packer tested using either Lugeon or falling head methods. The length weighted average hydraulic conductivity along each geomechanical drill hole ranged from 1×10^{-7} to 9×10^{-6} m/s (Table B1.1 in Appendix B1). The length weighted average hydraulic conductivity within geomechanical drill holes located in the inferred lower permeability bedrock zone (GM12-01 and GM12-03) is 1×10^{-7} m/s and in the inferred higher permeability bedrock zone ranged from 3×10^{-7} to 9×10^{-6} m/s. Geomechanical drill hole GM12-02 is inferred to span both the higher and lower permeability zones and has a length weighted average hydraulic conductivity of 7×10^{-7} m/s.

A total of 11 observation well drill holes were tested using either packer or airlift testing techniques. The length weighted average hydraulic conductivity in each observation well drill hole ranged from 2×10^{-7} to 4×10^{-6} m/s (Table B1.1 in Appendix B1). The length weighted average hydraulic conductivity within observation well drill holes located in the inferred lower permeability bedrock zone ranged from 2×10^{-7} to 2×10^{-6} m/s and in the inferred higher permeability bedrock zone ranged from 5×10^{-7} to 4×10^{-6} m/s. Observation hole PH12-4-3 is inferred to span both the higher and lower permeability bedrock zones and has a length weighted average hydraulic conductivity of 2×10^{-7} m/s. Airlift testing was not conducted in PH13-1-1 since the depth to the water table exceeded the effective depth of the airlift testing equipment. Results of the in-situ hydraulic testing with the airlift method although imprecise are provided in Appendix B2.

Response tests were carried out in two of the four monitoring wells located south of the deposit area. These monitoring wells are located in the inferred zone of lower permeability bedrock. Estimates of hydraulic conductivity at monitoring wells MW12-11D and MW12-11S are 7×10^{-7} and 4×10^{-5} m/s, respectively. Hydraulic conductivity testing was not conducted at monitoring wells MW12-10D/S. A hydraulic conductivity value of $< 1 \times 10^{-8}$ m/s has been estimated at monitoring well MW12-10D based on the very slow rate of water level recovery following well development.

2.3.2 PUMPING TESTS

2.3.2.1 Pumping Test Analysis

Pumping test data were analysed in the following manner for each of the two pumping tests:

1. Select the VWP exhibiting the greatest response to pumping in each observation well: Water level data from all VWPs at each of the observation wells were plotted on a semi-log plot to compare the water level response to pumping with depth. The VWP exhibiting the greatest response to pumping in each observation well was selected for further analysis. This “maximum drawdown” VWP in each observation well was considered to be representative of the dominating horizontal pathway between the pumping well and the observation well.
2. Estimate a transmissivity value at each observation well using the Theis (1935) method and water level drawdown during pumping: The Theis method is based on matching drawdown data collected during a pumping test to the curve of a theoretical solution in order to estimate transmissivity and storativity values. Analyses were conducted by plotting the calculated groundwater drawdown from the maximum drawdown VWP at each observation well verses time. Where required, image wells were used in the numerical analysis of results to simulate flow boundaries, where each image well represented a flow boundary at a specified distance from the pumping well (Kruseman and de Ridder, 2000).

3. Estimate a transmissivity value at each observation well using the recovery water levels: Plot the residual drawdown versus the ratio of the elapsed time since pumping stopped and the time since pumping started (t/t').
4. Estimate a transmissivity value at each pumping well using the recovery water level in the pumping well: Plot the residual drawdown versus the ratio of the elapsed time since pumping stopped and the time since pumping started (t/t').
5. Estimate a bulk transmissivity of the rock mass using distance-drawdown plots: The drawdown at 1,000 minutes for each maximum drawdown VWP was selected for analysis using a distance-drawdown plot and a bulk transmissivity value was estimated from the plot.

Semi-log plots for each observation well, Theis analysis plots, residual drawdown plots, distance-drawdown plots and time series graphs of drawdown in the pumping well are presented in Appendix B3 for PW13-1 and in Appendix B4 for PW13-3. Water levels recorded at each observation well are presented in Appendix C1.

Hydraulic conductivity and specific storage values were estimated for each observation well by assuming a representative saturated thickness of the bedrock unit, which was inferred based on results of the pumping tests. The assumed saturated thickness directly affects the calculated hydraulic conductivity and specific storage values.

2.3.2.2 Pumping Test Results

2.3.2.2.1 Pumping Test PW13-1

Results of the 168 hour pumping test completed at PW13-1 suggest that a higher permeability bedrock zone surrounds PW13-1. Results and interpretation of the PW13-1 pumping test are presented below:

- A drawdown of 20 m was observed in the pumped well.
- Drawdown was noted in observation wells PH13-1-1, PH13-1-2, PH13-1-3, PH12-2-1, PH13-2-2, PH13-2-3, and PH12-4-3. These observation wells are located at distances of 50 m to 650 m from the pumping well.
- Water level drawdown in observation wells exhibiting a response to pumping generally ranged between 12 to 18 m except PH12-2-1, which exhibited a water level drawdown of 3 m.
- Drawdown results indicate a relatively flat water level cone of depression surrounding PW13-1, which is indicative of a higher permeability aquifer. The generally consistent response in water level drawdown with distance and depth from the pumping well suggests that the monitored higher permeability bedrock can be characterized as homogenous and isotropic.
- No drawdown was noted in observation wells PH12-3-1, PH12-3-2, PH12-3-3, PH12-4-1, and PH12-4-2, which are located approximately 1,200 m from PW13-1. The observation wells are interpreted to be located in the lower permeability bedrock zone.
- Artesian water level conditions were noted in exploration drillholes located north of pumping well PW13-1 prior to drilling the well. These artesian conditions were no longer present after drilling the well. As well, static water levels within the open drill hole at PW13-1 changed from approximately 3 mbgl to 15 mbgl. The change in static water level may indicate the volume of water removed from the drillhole during the drilling process modified the static water level within the higher permeability zone.

- Multiple image wells were necessary in order to obtain the best fit between the theoretical Theis solution and the measured drawdown data when analysing transmissivity at all observation wells. The use of multiple image wells suggests the higher permeability bedrock in the vicinity of PW13-1 is surrounded by flow boundaries in all directions. However, the pump test was of insufficient duration to prove the higher permeability bedrock zone was completely surrounded by flow boundaries. The behaviour of the recovery data together with disappearance of the artesian conditions in the nearby exploration drill holes provides adequate evidence that the higher permeability bedrock is constrained by lower permeability material. The spatial extent of the higher permeability bedrock zone in the deposit area estimated using the distance to image wells from the analysis of observation wells was consistent with groundwater level data and rock quality data.
- The pumping test results suggest that the lateral extent of the higher permeability bedrock zone changes with depth. For example, VWPs installed below 200 mbgl at PH12-2-1, PH13-2-2, and PH12-4-3 generally showed hydraulic responses typical of the higher permeability bedrock. VWPs installed above 200 mbgl within these same observation wells displayed hydraulic responses indicative of lower permeability bedrock. The higher permeability zone is inferred to have the shape of an upside down cone, with an increased area of higher permeability rock mass below 200 mbgl.

Transmissivity and storativity values calculated based on the 168 hours of pumping at PW13-1 are presented in Table 2.3. The results are consistent within the zone believed to be of higher permeability. Hydraulic conductivities were calculated based on an expected, but not well defined, thickness of the tested zone (500 m). Specific storage was calculated by dividing storage by an assumed effective thickness. The range of calculated specific storage values is within the expected range for fractured rock of 6×10^{-7} to 8×10^{-6} per m.

Table 2.4 Summary of PW13-1 Pumping Test Results

Observation Well	VWP Depth	Transmissivity	Storativity	Test Thickness	Hydraulic Conductivity
	(m)	(m ² /s)	-	(m)	(m/s)
PH13-1-1 (Theis)	160	2x10 ⁻³	1x10 ⁻³	500	5x10 ⁻⁶
PH13-1-1 (recovery)		2x10 ⁻³	1x10 ⁻³		3x10 ⁻⁶
PH13-1-2 (Theis)	211	2x10 ⁻³	8x10 ⁻⁴	500	4x10 ⁻⁶
PH13-1-2 (recovery)		2x10 ⁻³	1x10 ⁻³		4x10 ⁻⁶
PH13-1-3 (Theis)	198	2x10 ⁻³	3x10 ⁻⁴	500	4x10 ⁻⁶
PH13-1-3 (recovery)		2x10 ⁻³	8x10 ⁻⁴		3x10 ⁻⁶
PH13-2-2 (Theis)	353	2x10 ⁻³	4x10 ⁻³	500	4x10 ⁻⁶
PH13-2-2 (recovery)		1x10 ⁻³	6x10 ⁻⁴		2x10 ⁻⁶
PH13-2-3 (Theis)	423	2x10 ⁻³	4x10 ⁻³	500	4x10 ⁻⁶
PH13-2-3 (recovery)		1x10 ⁻³	4x10 ⁻⁴		2x10 ⁻⁶
PH12-4-3 (Theis)	342	3x10 ⁻³	2x10 ⁻³	500	6x10 ⁻⁶
PH12-4-3 (recovery)		1x10 ⁻³	4x10 ⁻⁴		6x10 ⁻⁶
PW13-1 (recovery)	-	2x10 ⁻³	1x10 ⁻³	180	1x10 ⁻⁵
Distance-Drawdown	-	3x10 ⁻³	-	-	-

NOTES:

1. HYDRAULIC CONDUCTIVITY TESTING RESULTS AND THEIS ANALYSES ARE PRESENTED IN APPENDIX B3.
2. VWP RESULTS PRESENTED ARE THE VWPs THAT EXHIBITED THE GREATEST DRAWDOWN IN THE OBSERVATION WELL.
3. TEST THICKNESS WAS INFERRED BASED ON THE RESULTS OF THE PUMPING TEST AND REPRESENTS AN ASSUMED THICKNESS OF THE HIGHER PERMEABILITY BEDROCK ZONE. THE WELL SCREEN LENGTH WAS USED AS THE TEST THICKNESS TO ANALYZE DRAWDOWN RECOVERY IN THE PUMPED WELL.

2.3.2.2.2 Pumping Test PW13-3

Results of the 92 hour pumping test completed at PW13-3 suggest a lower permeability bedrock zone is present in the vicinity of PW13-3. Results and interpretation of the PW13-3 pumping test are presented below:

- A drawdown of 63 m was observed in the well.
- Water level drawdown at the well was dominated by removal of water from wellbore storage.
- Water level drawdown was noted in observation wells PH12-3-1, PH12-3-2, and PH12-3-3, located 55 m to 101 m from pumping well PW13-3. No drawdown was noted at any other observation well.
- Water level drawdown in observation wells exhibiting a response to pumping generally ranged between 15 m to 40 m.
- The greatest water level drawdown in each observation well was recorded at VWPs installed at 105 mbgl in PH12-3-1, at 118 mbgl in PH12-3-2, and at 120 mbgl in PH12-3-3. The greatest drawdown was assumed to be within or adjacent to the primary groundwater pathway to the pumped well.
- Near-parallel responses of VWPs in each observation well indicate a substantial vertical component of flow over the remainder of the pumped horizon. The aquifer response for evaluation of the bulk hydraulic conductivity was calculated over the total length of the pumped interval (177 m).

- Image wells were attempted to represent potential flow boundaries in the analyses of hydraulic properties for all observation well VWP. There was indication a higher permeability boundary may be present at a distance of about 300 m based on the interpretation of data for the VWP at 118 mbgl in PH12-3-2.
- Analysis of recovery data and distance drawdown data provided a consistent estimate of aquifer transmissivity.

Transmissivity and storativity values calculated based on the 92 hours of pumping at PW13-3 are presented on Table 2.4. Results are consistent within the bedrock zone believed to be of lower permeability. Hydraulic conductivities were calculated based on the expected, but not well defined, thickness of the tested zone (177 m). Specific storage was calculated by dividing storage by the effective thickness. The range of calculated specific storage values is within the expected range for fractured rock of 6×10^{-7} to 2×10^{-6} per m.

Table 2.5 Summary of PW13-3 Pumping Test Results

Observation Well	VWP Depth	Transmissivity	Storativity	Test Thickness	Hydraulic Conductivity
	(m)	(m ² /s)	-	(m)	(m/s)
Pump test result from PW13-3					
PH12-3-1 (Theis)	105	3x10 ⁻⁵	2x10 ⁻⁴	177	1x10 ⁻⁷
PH12-3-1 (recovery)		2x10 ⁻⁵	4x10 ⁻⁴		1x10 ⁻⁷
PH12-3-2 (Theis)	118	2x10 ⁻⁵	3x10 ⁻⁴	177	1x10 ⁻⁷
PH12-3-2 (recovery)		2x10 ⁻⁵	3x10 ⁻⁴		8x10 ⁻⁸
PH12-3-3 (Theis)	120	3x10 ⁻⁵	5x10 ⁻⁴	177	1x10 ⁻⁷
PH12-3-3 (recovery)		2x10 ⁻⁵	2x10 ⁻⁴		1x10 ⁻⁷
PW13-3 (recovery)	-	4x10 ⁻⁵	1x10 ⁻⁴	177	2x10 ⁻⁷
Distance Drawdown	-	2x10 ⁻⁵	-	-	-

NOTES:

1. HYDRAULIC CONDUCTIVITY TESTING RESULTS AND THEIS ANALYSES ARE PRESENTED IN APPENDIX B4.
2. VWP RESULTS PRESENTED ARE THE VWPs THAT EXHIBITED THE GREATEST DRAWDOWN IN THE OBSERVATION WELL.
3. TEST THICKNESS WAS INFERRED BASED ON THE RESULTS OF THE PUMPING TEST AND REPRESENTS AN ASSUMED THICKNESS OF THE LOWER PERMEABILITY BEDROCK ZONE.

2.3.3 SUMMARY OF HYDROGEOLOGIC TESTING

Results of the packer tests, airlift tests, and pumping test performed within the higher permeability bedrock in the deposit area indicate the following:

- From the PW13-1 pumping test, calculated transmissivities at observation wells ranged from 1x10⁻³ to 3x10⁻³ m²/s. Using an effective aquifer thickness of 500 m, the calculated range of estimated hydraulic conductivity values is 2x10⁻⁶ to 6x10⁻⁶ m/s.
- The calculated storativity ranged from 3x10⁻⁴ to 4x10⁻³. Using an assumed aquifer thickness of 500 m results in a specific storage of 6x10⁻⁷ to 8x10⁻⁶ per m, which is appropriate for a highly fractured bedrock aquifer.
- Airlift testing while drilling the two nearest observation wells yielded length weighted average hydraulic conductivities of 4x10⁻⁶ m/s (PH13-1-2 and PH13-1-3). The measured hydraulic conductivities ranged from 2x10⁻⁶ to 2x10⁻⁵ m/s.
- Airlift testing while drilling the four other observation wells that responded to the pumping test yielded a length weighted average hydraulic conductivity values ranging from 2x10⁻⁷ to 1x10⁻⁶ m/s.
- Packer testing while drilling geomechanical drill holes yielded length weighted average hydraulic conductivities of 3x10⁻⁷ to 9x10⁻⁶ m/s.
- The packer test, airlift test, and pumping test, results together with the geomechanical logging data and groundwater levels define the boundaries of the higher permeability bedrock zone contained by the lower permeability bedrock zone or by other boundaries to groundwater flow.

Results of the packer tests, airlift tests, and pumping test performed within the lower permeability bedrock in the deposit area indicate the following:

- From the PW13-3 pumping test, the calculated transmissivity ranged from 2×10^{-5} to 4×10^{-5} m²/s. Using an aquifer thickness of 177 m, the estimated range of hydraulic conductivity values is 8×10^{-8} to 2×10^{-7} m/s.
- The calculated storativity ranged from 1×10^{-4} to 5×10^{-4} . Using an assumed aquifer thickness of 177 m results in a specific storage of 6×10^{-7} to 3×10^{-6} per m, which is appropriate for a fractured bedrock aquifer.
- Airlift and packer testing in the three observation wells nearest to PW13-3 yielded length weighted average hydraulic conductivities of 2×10^{-7} to 6×10^{-7} m/s. The measured hydraulic conductivities ranged from 5×10^{-8} to 1×10^{-6} m/s.
- Airlift testing in the three observation wells located approximately 800 m west of PW13-3 yielded length weighted average hydraulic conductivities of 2×10^{-7} to 2×10^{-6} m/s.

2.3.4 GROUNDWATER LEVELS

Time-series plots of groundwater levels at VWP sensors installed in observation holes are presented in Appendix C1. Groundwater levels were recorded at 12 hr intervals. Groundwater elevations calculated from VWP data obtained from geomechanical drill holes in early February are provided on Table 2.1. Groundwater elevations calculated from VWP readings obtained from observation wells on March 18 and 20, 2013 are provided on Table 2.2.

Groundwater levels in the lower permeability bedrock zone vary between 10 to 30 mbgl and range in elevation between 1,610 to 1,630 masl. Groundwater levels within the higher permeability bedrock zone vary between 30 to 70 mbgl and range in elevation between 1,515 to 1,540 masl.

Available water level data indicates the groundwater system within the proposed open pit area is seasonally variable. Groundwater levels generally increased between 8 m to 10 m during the spring freshet in April and May. The relatively fast response of the bedrock aquifer to the freshet indicates a fast recharge rate and that the overburden material is not a confining layer.

2.3.5 GROUNDWATER FLOW

A groundwater contour map created using groundwater levels recorded between March 18 and 20, 2013 is shown on Figure C2.1. Mid-March water level records were selected in order to allow the maximum amount of time for the VWP measurements to recover from the effects of installation prior to water level changes associated with spring freshet.

Groundwater level contours indicate groundwater flow within the deposit area is in a northerly direction. The hydraulic gradient within the zone of inferred higher permeability bedrock is relatively flat (approximately 0.02 m/m) and increases to approximately 0.2 m/m within the inferred zone of lower permeability rock. The higher permeability bedrock zone likely behaves as a permeable conduit, with flow attracted to the zone on the uphill side and flow diverted away from the zone on the downhill side. The groundwater level data at and response to pumping at PH12-4-3 clearly indicates a highly variable boundary.

Vertical hydraulic gradients assessed amongst VWPs installed in the same observation well indicate that the vertical component of groundwater flow is often downward in both the higher permeability and lower permeability bedrock zones (Appendix C1). The interpreted vertical groundwater flow direction at each observation well using mid-March water levels is summarized in Table 2.1 and includes:

- Nearly hydrostatic conditions in the cluster of observation wells located adjacent to PW13-1 within the higher permeability bedrock zone (PH13-1-1, PH13-1-2, and PH13-1-3). An exception is the lowest VWP in PH13-1-2 (477 mbgl), which may indicate this VWP is located outside the higher permeability zone.
- A downward gradient in the cluster of observation wells east of PW13-1 located at the edge of the inferred higher permeability bedrock zone (PH12-2-1, PH13-2-2, and PH13-2-3). This downward gradient is consistent with what is expected near the edge of the higher permeability bedrock unit.
- A slight downward gradient in the majority of observation well PH12-3-1, with a strong upward gradient from the lowest zone (290 mbgl). The lowest zone did not strongly respond to pumping from PW13-3. Observation well PH12-3-2 exhibits a weak downward gradient. Recorded piezometric elevations in PH12-3-3 were highest at the VWP installed at 120 mbgl, with weak upward and downward hydraulic gradients from that VWP.
- Observation well PH12-4-1 has a piezometric high at 143 mbgl with upward and downward vertical components of flow from that VWP. Observation well PH12-4-2 has a moderate downward vertical hydraulic gradient.
- The vertical component of groundwater flow is strongly downward at the uppermost VWPs at PH12-4-3 (69 and 139 mbgl). VWPs at depth report piezometric levels lower in elevation and a negligible vertical hydraulic gradient, which are characteristics indicative of the higher permeability bedrock zone.

The average groundwater flow velocity within the lower permeability bedrock zone is estimated to be 3 m/d based on an estimated hydraulic gradient of 0.2 m/m, a bulk hydraulic conductivity value of 1×10^{-7} m/s and an assumed porosity of 0.05% (Snow, 1968; Freeze and Cherry, 1979). The average groundwater flow velocity within the higher permeability bedrock zone is estimated to be 4 m/d based on an estimated hydraulic gradient of 0.02 m/m, a bulk hydraulic conductivity value of 5×10^{-6} m/s, and an assumed porosity of 0.2% (Snow, 1968; Freeze and Cherry, 1979).

2.4 BASELINE HYDROGEOLOGIC CONCEPTUAL MODEL SUMMARY

The mean annual precipitation at the site is estimated to be 636 mm (KP, 2013a). Average groundwater recharge across the Blackwater Project is estimated to be 75 mm/yr, and possibly as high as 120 mm/yr on a sub-catchment basis (KP, 2013d).

Geology in the vicinity of the Blackwater deposit consists of overburden, Fragmentals, and SED rock. Bedrock can be separated into two zones of hydraulic interest based on the results of in-situ hydraulic conductivity testing, piezometric level monitoring, and geological interpretation (Figure 2.2):

- A higher permeability zone with an estimated bulk hydraulic conductivity of 5×10^{-6} m/s and
- A lower permeability zone with an estimated bulk hydraulic conductivity of 1×10^{-7} m/s.

Available data suggests some intervals may have a somewhat lower hydraulic conductivity. Pump test results in the deposit area indicate the higher permeability bedrock zone is confined in all directions by the lower permeability bedrock or by other boundaries to groundwater flow.

Groundwater elevations within the higher permeability bedrock zone average 1,520 masl, with generally flat and hydrostatic hydraulic gradients. Groundwater elevations in the lower permeability bedrock zone immediately upslope of the proposed open pit area average 1,620 masl. The groundwater system exhibits seasonal variability, with groundwater levels rising by up to 10 m during spring freshet.

Groundwater flow in the proposed open pit area is generally in a northerly direction. Groundwater within the lower permeability bedrock is generally expected to recharge the higher permeability bedrock unit over the upper half of the slope. Groundwater would then discharge from the higher permeability unit into the lower permeability unit along the downslope half (northern edge) of the deposit.

3 – MINE PLAN

The current mine plan incorporates open pit development over fifteen years. The pit dewatering system will be decommissioned in Year 15 and the pit will begin to fill with water from Year 15 to 17 as the low grade ore is processed through the mill. Pit bottom elevations and average pit depths for each proposed mine year were calculated using estimates of annual pit advancement provided to KP by Norwest Corporation (Norwest) in August 2013 (Norwest, 2013). These pit bottom elevations and depths are summarized in Table 3.1.

Table 3.1 Annual Pit Advancement

Year	Maximum Pit Bottom Elevation (masl)	Average Pit Depth (m)	Rate of Vertical Mining per Year (m/yr)
-2	1,620	35	35
-1	1,600	55	20
1	1,550	100	50
2	1,495	160	60
3	1,405	250	90
4	1,395	260	10
5	1,370	285	25
6	1,345	315	25
7	1,300	355	40
8	1,300	355	0
9	1,300	355	0
10	1,260	395	40
11	1,260	395	0
12	1,180	475	80
13	1,120	535	60
14	1,120	535	0

NOTES:

1. CHANGE IN ELEVATION CALCULATED FROM AN INITIAL PIT ELEVATION OF 1,655 m.
2. VALUES BASED ON PIT ADANCEMENT PROVIDED BY NORWEST CORPORATION IN AUGUST 2013.

The proposed vertical rate of open pit mining varies throughout the mine life and the horizontal growth of the pit is planned to occur in several years (Years 8, 9, 11, and 14). The fastest vertical rate of mining is proposed in Year 3, when 90 m of vertical mining is proposed.

4 – GROUNDWATER INFLOWS AND DEWATERING REQUIREMENTS

4.1 GENERAL

A key component of open pit water management is determining groundwater inflows and dewatering system requirements. The conceptual baseline groundwater model presented in Section 2 of this report is a key component in estimating groundwater inflow and dewatering requirements.

4.2 INFLOW ASSESSMENTS

Groundwater inflow to an open pit is dependent on many variables, including: pit geometry, pit depth, rock mass permeability, overburden material type, meteorological conditions, topography, depth to the groundwater table, groundwater recharge rates, and storage characteristics. There are three basic approaches for predicting mine groundwater inflows: 1) the water balance approach, 2) analytical approach, and 3) numerical approach.

Groundwater inflow estimates and requirements for additional dewatering wells at select stages of the proposed pit advancement were estimated using an analytical approach. The analytical approach used radial flow equations adapted to calculate inflows to the large excavation (i.e., the proposed open pit) by assessing groundwater flow towards the open pit as akin to flow to a large well. Pit phases, surrounding landscape geometry, and bulk hydraulic property information were used to constrain segment specific groundwater flows.

Results of the analytical approach were checked with a numerical model. Further detail of the groundwater numerical modelling for the Blackwater Project is provided in the Numerical Groundwater Modelling Report (KP, 2013e).

4.3 CALCULATION OF DEWATERING REQUIREMENTS

Groundwater inflows were assessed for five phases of the proposed 15 year open pit progression. These phases correspond with mining depth into the saturated thickness of the higher permeability bedrock zone of 50 m (Year 1), 100 m (Year 2), 200 m (Year 5), 300 m (Year 10), and 400 m (Year 14). The saturated thickness of the bedrock within the proposed pit is interpreted to be about 400 m based on average static groundwater levels (1520 masl) recorded using VWP's in the higher permeability zone.

The proposed open pit is located on the flank of Mt. Davidson where the existing topography differs by 1,000 m between the proposed southern and northern pit edge. This sloped topography is expected to control the groundwater flow direction and to cause groundwater inflows and the radius of influence to vary radially around the open pit.

Groundwater inflows were estimated along eight segments spaced at 45 degree intervals originating from the centre of the inferred higher permeability zone. These segments were named according to their cardinal direction; North, Northeast, East, Southeast, South, Southwest, West, and Northwest Segments. A representative cross-section was prepared for each Segment.

Total dewatering requirements were calculated on an annual basis by summing the following contributions:

- Removal of a constant rate of groundwater from the higher permeability zone

- Removal of groundwater from perimeter dewatering wells to achieve pit wall stability requirements, and
- Removal of groundwater from storage in the higher permeability bedrock zone.

Further detail on the analytical groundwater inflow calculations conducted for each of the five phases of pit progression are outlined below:

- Calculate groundwater inflow to the higher permeability zone in the open pit under the influence of a depressed water table: A groundwater drawdown curve was calculated along each Segment under the influence of a depressed water table within the higher permeability bedrock zone. The calculation assumed a groundwater recharge rate of 120 mm/yr. The calculated inflow under the influence of a depressed water table provided the constant rate for groundwater removal from the higher permeability zone (Todd, 1959).
- Evaluate each calculated groundwater drawdown curve for slope stability requirements: An acceptable background water level and slope depressurization was determined by requirements outlined in the Feasibility Open Pit Slope Design Report (KP, 2013b). Calculated groundwater drawdown curves were evaluated within the lower permeability bedrock zone within each segment by comparing the estimated groundwater levels against topography and slope depressurization requirements. Additional perimeter dewatering wells were added to segments where the calculated water table elevation exceeded the topography and/or slope depressurization requirements to design adequate slope depressurization in the lower permeability bedrock zone. Details of the perimeter dewatering well design are outlined in Section 4.4.
- Reassess the steady state inflow rates into the higher permeability bedrock zone within the open pit using groundwater levels lowered by the operation of perimeter dewatering wells.
- Estimate the total groundwater inflows to the open pit higher permeability bedrock zone by summing the inflow contribution from each of the Segments.
- Estimate the volume of groundwater in storage in the higher permeability bedrock zone: The volume of water to be removed from storage in the higher permeability bedrock zone was calculated using an estimated radius of the higher permeability bedrock zone of 400 m, an assumed porosity of 0.2% (Snow, 1968), and the proposed annual change in pit depth (Table 3.1).

Groundwater inflows calculated for each phase assumed steady state groundwater conditions and a groundwater level that is lowered to 15 m below the pit base elevation. This water level was chosen to include consideration for keeping blast holes dry during mine advancement.

Cross sections showing the estimated steady state drawdown curve along with existing topography and proposed pit wall elevation for the South and Southeast segments are presented on Figures D.1 and D.2.

4.4 PERIMETER DEWATERING WELLS

4.4.1 PERIMETER DEWATERING WELL DESIGN

Perimeter dewatering wells along the south high wall to lower and extend the cone of depression beyond the pit walls provide the required depressurization identified in the pit wall stability analyses (KP, 2013b). Perimeter dewatering wells were designed by assessing the following:

- Groundwater drawdown required to achieve slope depressurization
- Aquifer thickness
- Available well sizes, and
- Achievable depths of installation.

The groundwater drawdown required from perimeter dewatering wells for segments needing additional slope depressurization is summarized in Table 4.1. The values in Table 4.1 were determined by comparing the baseline groundwater level against the artificial groundwater level required to achieve adequate slope stability.

The calculated cone of depression surrounding each dewatering well was evaluated. In order to provide a cost effective design, the spacing and number of perimeter dewatering wells was refined so that the cumulative drawdown required between each perimeter dewatering well was met. Actual cumulative drawdown will be monitored in the field with observation wells to ensure the design drawdowns are achieved. An example of the dewatering well spacing calculation is shown on Figure D.3.

Table 4.1 Perimeter Dewatering Well Drawdown Requirements

Segment	Baseline Groundwater Level masl	Required Minimum Drawdown by Perimeter Dewatering Wells				
		Year 1	Year 2	Year 5	Year 10	Year 14
		m	m	m	m	m
East	1,530	0	0	20	25	0
Southeast	1,600	40	40	50	60	0
South	1,630	20	0	0	0	0
Southwest	1,640	70	95	95	95	0

4.4.2 PERIMETER DEWATERING WELL INSTALLATION SCHEDULE

The installation schedule for perimeter dewatering wells includes consideration of time for the dewatering well to reach steady state conditions and to achieve slope depressurization. Based on calculations conducted for this assessment, which assume steady state flow conditions and drawdowns ranging from 30 to 95 mbgl, approximately 90% of the drawdown is estimated to occur during the first 180 to 250 days. As such, installation of perimeter pit dewatering wells is recommended approximately 200 days prior to the date the groundwater drawdown is required. This installation schedule will allow time for pumping rates to be optimized to field conditions.

The estimated time required to reach steady state drawdown conditions at perimeter dewatering wells, which will be installed in the lower permeability rock, is shown on Figures D.4 and D.5.

5 – SURFACE WATER INFLOWS

Surface water dewatering systems have been designed to manage surface water inflows from rainfall events and the associated snowmelt within the open pit catchment area. The open pit catchment area includes the open pit itself and any associated catchment basins draining into it.

The calculation of surface water inflows used long-term meteorological estimates developed for the Blackwater project area by combining site specific data with data from the Meteorological Services of Canada (MSC) branch of Environment Canada and the BC Forest Service. The KP Hydrometeorology Report for Blackwater (KP, 2013a) provides estimates of the long-term values for various hydrometric parameters used to evaluate the design storm events, including wind speed and temperature values.

Specific hydrometric information and assumptions relevant to pit water management design is as follows:

- 1 in 100 year 24-hour storm event = 66 mm of rainfall.
- Snowmelt (1 in 100 year 24-hour storm event) = 32 mm (snow water equivalent). This value was calculated based on average temperature and wind speed estimates.
- Runoff coefficient of open pit area = 100%.
- Maximum footprint of open pit excavation = 240 ha (2.4 km²).
- All surface drainage from the land adjacent to the pit is diverted around the open pit excavation.
- The snowmelt associated with the 1 in 100 year 24-hour storm event is distributed using the same 'pattern' as the rainfall distribution.

Design of the surface water dewatering system is discussed in Section 6.3.

6 – MINE DEWATERING REQUIREMENTS

6.1 GENERAL

Managing groundwater and surface water inflow and slope depressurization in the proposed open pit mine can be undertaken through numerous management methods. The mine dewatering system outlined in this section is based on the hydrogeological setting of the mine, required inflow rates, and cost-benefit of achieving the estimated dewatering requirement.

6.2 PIT DEWATERING SYSTEM

The open pit dewatering system is comprised of a combination of the following three sub-systems:

1. Surface water dewatering system
2. In-pit depressurization system, and
3. Perimeter depressurization system.

Surface water dewatering systems have been designed to manage the surface water inflows from rain storm events and the associated snowmelt. A combination of in-pit and perimeter pumping wells will be implemented to achieve acceptable slope depressurization and pit dewatering. The pit dewatering design is based on lowering the groundwater table within the higher permeability zone to approximately 15 meters below the pit base elevation. In-pit groundwater wells will remove water from storage in the higher permeability zone. Additional drawdown will result in the surrounding rock mass as groundwater flows towards the higher permeability zone. Perimeter dewatering wells will be established along the south high wall to lower and extend the cone of depression beyond the pit walls to provide the depressurization required from the open pit wall stability analyses (KP, 2013b).

6.3 SURFACE WATER DEWATERING SYSTEM

The open pit development sequencing throughout the mine life was divided into five stages to evaluate the surface water dewatering requirements. The 1 in 100 year return 24-hour period storm was used to size the pit surface water management system and to assess the required duration of dewatering of the pit bottom following a storm.

The total volume of surface water runoff from the design storm event was calculated by applying the total precipitation depth (rainfall and snowmelt) and runoff coefficient over the open pit catchment area, which includes the open pit itself and any associated catchment basins draining into it. The calculated water runoff volume for sizing of the dewatering system is summarized in Table 6.1.

The surface water management system was designed for a maximum pumping flow rate of 700 m³/hr. The maximum pumping flow rate was selected as the optimal flow rate of a 16" diameter DR11 HDPE pipe. The optimal flow rate was determined for a flow velocity between 2.0 m/s and 2.5 m/s.

Table 6.1 Open Pit Storm Inflow Volumes

STAGE		Catchment Area (m ²)	Runoff Volume (m ³)	Pumping Rate (m ³ /h)	Time to Dewater (Days)
Stage 1 (Year 1)	Pit Bottom (El. 1550m)	751,300	73,627	700	4
	Secondary (El. 1585m)	395,937	38,802	700	2
Stage 2 (Year 5)	East Catchment (El. 1370m)	1,389,324	136,154	700	8
	West Catchment (El. 1405m)	823,555	216,862	700	13
Stage 3 (Year 6)	Pit Bottom (El. 1345m)	2,264,753	221,946	700	13
Stage 4 (Year 9)	Pit Bottom (El. 1300m)	2,370,863	232,345	700	14
Stage 5 (Year 13)	North (El. 1120m)	591,153	57,933	700	3
	East (El. 1165m)	1,124,161	110,168	700	7
	West (El. 1180m)	654,687	232,260	700	14

The surface water management pipelines will be installed adjacent to the open pit haul roads. A pump unit will be placed adjacent to sump areas in the base of the pit after a storm, and the water will be pumped to the crest of the pit wall using a series of booster pumps positioned along the pipeline. The pump system will consist of a series of Godwin HL250M Dri-Prime skid-mounted diesel drive pumps. The number of pumps will increase as the pit depth increases. The total dynamic head for the initial intake and between subsequent booster pump units must not exceed 100 m in order to maintain the pumping flow rate of 700 m³/h. The pumps will be converted to the HL250M pumps from the Godwin HL160M pumps that were purchased for use during pre-production and early operations at the TSF.

The water from the surface water management system will flow by gravity in the pipeline approximately 200 m to the dewatering system junction after exiting the pit. Water from the surface water management system will be combined with groundwater from the depressurization systems at the dewatering junction header.

6.4 GROUNDWATER DEPRESSURIZATION SYSTEM

The purpose of in-pit dewatering wells will be to remove water from storage in the higher permeability bedrock zone. Operation of these wells will result in additional drawdown in the surrounding rock mass. Perimeter dewatering wells will be established along the south high wall to lower and extend the cone of depression beyond the pit walls to the distances specified in the slope

stability assessment (KP, 2013b). Details of the well locations and depths are summarized in Table 6.2. A proposed schedule for dewatering well installations is provided in Table 6.3.

Pre-Production Year -2:

- Re-develop existing pumping wells PW13-1 and PW13-3 for inclusion in dewatering system.
- Install five perimeter pumping wells (PW15-1 to PW15-5) along the south wall.
- Install eleven observation wells to measure groundwater levels around the open pit perimeter (OW1 to OW11).
- Commission dewatering wells PW15-1 to PW15-5 and PW13-3 in the last quarter of Year -2.

Pre-Production Year -1:

- Install four perimeter pumping wells (PW16-1 to PW16-4) along the south wall, as required based on drawdown observations.
- Commission in-pit well PW13-1.

Operations Years 1 through 3:

- Install backup pumping wells at all existing perimeter dewatering wells.
- Install remaining observation wells (OW12 to OW18) around the northern edge of the ultimate extent of the open pit.

Operations Year 6:

- Install secondary in-pit dewatering well PW22-17 and decommission PW13-1.

Table 6.2 Open Pit Dewatering Well Details

Well ID	Easting	Northing	Well Collar Elevation	Well Bottom Elevation
			masl	masl
PW13-1	375,124	5,893,288	1,546	1,246
PW13-3	375,905	5,892,341	1,646	1,346
PW15-1	376,350	5,892,521	1,600	1,250
PW15-2	375,660	5,892,348	1,635	1,285
PW15-3	375,186	5,892,347	1,655	1,305
PW15-4	374,727	5,892,428	1,620	1,270
PW15-5	374,582	5,892,727	1,570	1,220
PW16-1	376,137	5,892,394	1,605	1,255
PW16-2	375,531	5,892,333	1,660	1,310
PW16-3	374,955	5,892,381	1,635	1,285
PW16-4	374,618	5,892,611	1,590	1,240
PW22-17	375,705	5,893,361	1,350	1,000

NOTES:

1. PLANNED INSTALLATION DATES AND LOCATIONS OF PUMPING WELLS PW16-1, PW16-2, PW16-3, AND PW16-4 WILL BE REASSESSED BASED ON OBSERVATIONS DURING WELL INSTALLATION IN YEAR -2.
2. ALL WELLS ASSUMED TO BE 350 m DEEP FOR PLANNING PURPOSES. WELLS WILL BE INSTALLED AS DEEP AS ACHIEVABLE TO A MAXIMUM DEPTH OF 450 m.

Table 6.3 Open Pit Groundwater Dewatering Plan

Year			-2	-1	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Pit Base Elevation (masl)			1620	1600	1555	1495	1405	1395	1370	1340	1300	1300	1300	1260	1260	1180	1120	1120
Well ID	Easting	Northing	Estimated Pumping Rate															
In-Pit																		
PW13-1	375,124	5,893,288	0	2.8	6.3	10	5.7	5.7	16	16	0	0	0	0	0	0	0	0
PW22-17	375,705	5,893,361	0	0	0	0	0	0	0	0	15	15	16	26	30	52	49	48
South and Southeast Segments																		
PW13-3	375,905	5,892,341	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	0	0	0	0
PW15-1	376,350	5,892,521	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	0	0	0	0
PW16-1	376,137	5,892,394	0	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	0	0
PW15-2	375,660	5,892,348	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	0	0	0	0
PW16-2	375,531	5,892,333	0	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	0	0
PW15-3	375,186	5,892,347	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	0	0	0	0
PW16-3	374,955	5,892,381	0	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	0	0
Southwest and West Segments																		
PW15-4	374,727	5,892,428	4.7	4.7	4.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	0	0
PW16-4	374,618	5,892,611	0	4.7	4.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	0	0	0	0
PW15-5	374,582	5,892,727	4.7	4.7	4.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	0	0
Total flow (L/s)			25	43	47	54	49	49	59	60	59	59	60	49	53	52	49	48

NOTES:

1. ACTUAL INSTALLATION DATES AND LOCATIONS OF PUMPING WELLS PW1, PW2, PW3, AND PW4 WILL BE REASSESSED BASED ON THE FIELD DRAWDOWN OBSERVATIONS.
2. PUMPING RATES FOR PW13-1 AND PW22-17 ARE THE ESTIMATED DEWATERING REQUIREMENTS TO REMOVE WATER FROM STORAGE FROM WITHIN THE HIGHER PERMEABILITY BEDROCK ZONE IN ADDITION TO THE STEADY STATE GROUNDWATER INFLOWS.
3. ALL WELLS ASSUMED TO BE 350M DEEP FOR PLANNING PURPOSES. WELLS WILL BE INSTALLED TO MAXIMUM DEPTHS AVAILABLE OR LIMITED TO 450M.

The dewatering wells will be installed using an air rotary drill rig to a nominal depth of 350 m and maximum depth of 450 m depending on drilling conditions encountered. Steel well screens will be installed upon completion with a minimum diameter of 8" for the perimeter wells and 10" for the in-pit wells. If ground conditions limit the well size or achievable depth of installation, adjustments to the dewatering system will be required to achieve the design objectives.

The perimeter wells will have installed 6" submersible turbine pumps individually rated for a flow rate of either 14 or 20 m³/hour (60 or 90 USgpm), depending on the installed well location. The perimeter wells will be interconnected by a pipeline around the perimeter of the open pit. The pipeline will be 4" to 6" diameter DR17 HDPE pipe. The perimeter wells will initially be spaced at 400 m intervals around the south wall of the pit during Year -2 with the installation of wells PW15-1 to PW15-5. The spacing will be reduced to approximately 200 m in the following year by installation of wells PW16-1 to PW16-4. The final locations of PW16-1 to PW16-4 will be based on observations during the installation of the dewatering wells in the year prior and response of the wells during initial pumping. Staged installation of pumping wells will provide additional data on aquifer characteristics and will enable a more efficient dewatering system design.

The in-pit wells will have 10" diameter well screens and 8" diameter submersible turbine pumps. The in-pit well pumps will be rated for a flow rate of 80 m³/hour (350 USgpm), and will be connected to the overall pit water management system by a 6" diameter DR17 HDPE pipeline. The flow from both depressurization systems will be combined with flow from the surface water system at a junction header near the rim of the open pit before discharging by gravity in a 20" diameter DR17 HDPE pipeline to Sediment Control Pond 1 and subsequently to TSF Site D. Initial calculations indicate that pumping rates of 50 to 55 L/s will be required at location PW22-17. A specialised pump will be needed to achieve this pumping rate or additional wells will be required using standard pumps. The required pumping rate at PW22-17 will be refined based on observed drawdowns from PW13-3 prior to the time of well installation in Year 6.

The maximum dewatering rate for the depressurization system was estimated to be in Year 6 at 60 L/s (950 USgpm). The final dewatering rate at ultimate pit expansion was estimated to be 48 L/s (760 USgpm). The groundwater depressurization system will include flow measurement devices, water level meters, and adjacent observation wells (OW1 to OW18) with installed vibrating wire piezometers to verify the effectiveness of the system.

The open pit depressurization system has been designed for the "best estimate" of required pumping. The well installations will be required to intersect productive fracture systems and be functional. The drilling and development of successful and useful dewatering wells can be highly variable in bedrock and wells with insufficient yield will need to be replaced. The pit dewatering strategy has included allowances for additional wells.

Pump and well failures can lead to a rise in piezometric levels, which may affect slope stability. Pump replacement can be easily completed and the time required is not critical to the success of the system. The lag time for repairing a well failure can be a concern. The time required for drilling, installing and commissioning a new well could be more than several months. The installation time can be affected by site accessibility, rig availability, installation time, and the time it takes to re-establish steady-state pumping conditions.

The pit depressurization system has included backup pumping wells at each of the perimeter well locations for the economic evaluation. The pumping wells will be outfitted with submersible pumps and connected to the dewatering system in the event of a well failure. The backup wells will be installed during the first three years of operations.

The final extent of the pit dewatering systems are shown on Figure 6.1 and includes the perimeter dewatering wells and pipelines (green), in-pit dewatering well and pipeline (red), and in-pit surface water management system (blue).

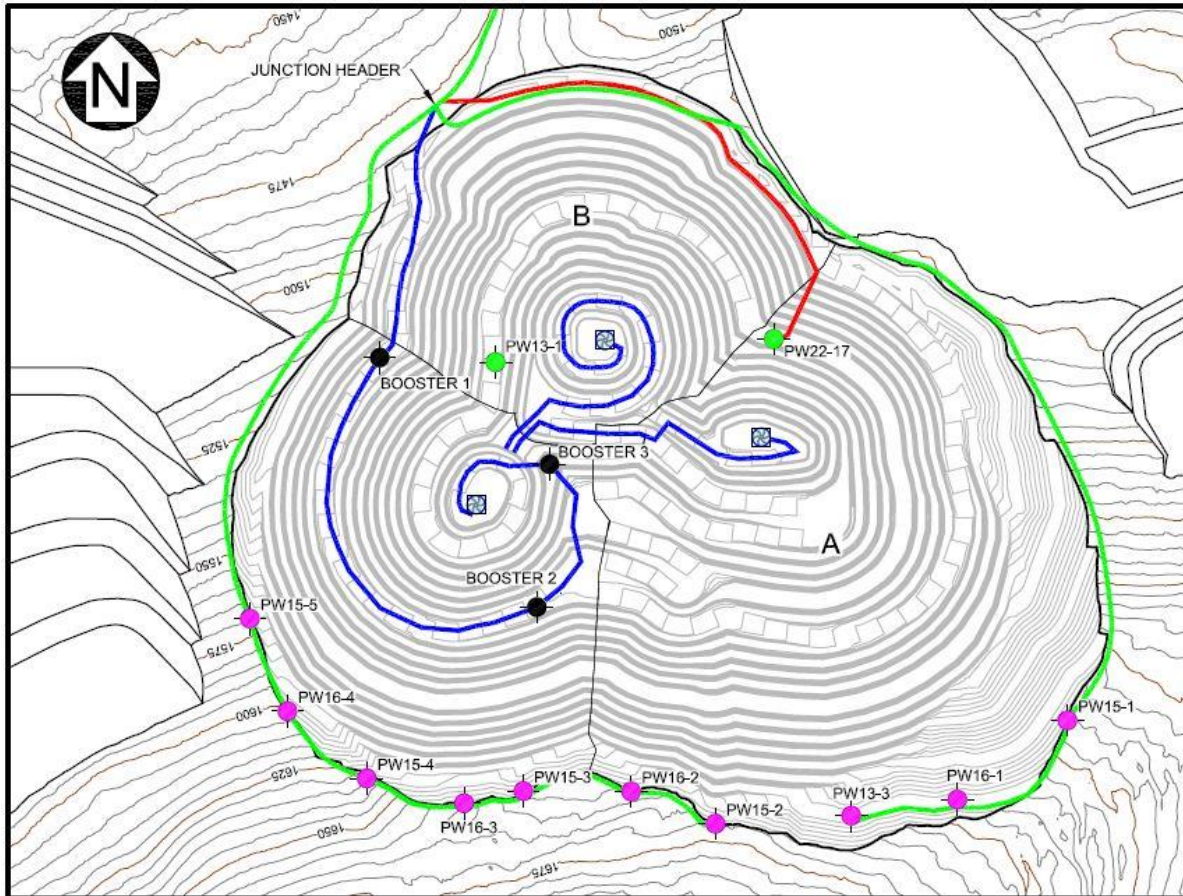


Figure 6.1 Final Pit Dewatering System Configuration

6.5 DEPRESSURIZATION SYSTEM LAYOUT DESIGN CONSIDERATIONS

The following factors were taken into consideration in the selection for the in-pit and perimeter depressurization well locations:

In-pit dewatering wells:

- **Bench Locations:** In-pit dewatering well locations are proposed on major wall benches. Locations were selected in order to minimize requirements well and dewatering system modifications as the pit advances. For in-pit dewatering location PW22-17, a bench was selected which would not be moved or have its height altered over the operational life of the dewatering well, thereby limiting well damage due to blasting and minimising the need to alter access to the well as the bench decreased in elevation.
- **Distance from the pit perimeter:** In-pit dewatering well locations were placed within the higher permeability bedrock zone as close to the ultimate pit extents as possible in order to minimize pipe requirements.

Perimeter dewatering wells:

- **Perimeter depressurization wells** are proposed outside the perimeter of the ultimate pit expansion in order to limit the impact of the dewatering wells and associated pumps and pipes on mining operations. Situating the dewatering wells outside the ultimate perimeter of the mine allows better access for service trucks, reduces the amount of in-pit traffic, and minimizes potential well damage from mine blasting and operations.

The proposed depressurization system has been optimized for the current open pit mine plan. Changes to the pit configuration require the depressurization system be reviewed to assess the changes in context of the design and to identify any required design layout changes.

7 – SUMMARY AND CONCLUSIONS

The open pit water management plan for the Blackwater Gold Project proposed open pit was developed based on the hydrogeological characterization of the proposed open pit area. The characterization incorporates results from in-situ hydraulic conductivity testing, recorded groundwater levels, and inferred groundwater flow directions to create a conceptual hydrogeological model including major hydrostratigraphic units for the proposed open pit area. Hydraulic conductivity tests included packer testing, airlift testing, and pumping tests conducted at two wells within the proposed open pit zone.

The conceptual hydrogeological model consists of a higher permeability bedrock zone at the core of the proposed open pit that is surrounded by a lower permeability bedrock zone.

The open pit dewatering system design is comprised of a combination of the following three sub-systems:

1. Surface water dewatering system
2. In-pit depressurization system, and
3. Perimeter depressurization system.

Surface water dewatering systems have been designed to manage the surface water inflows from rain storm events and the associated snowmelt. Assessment of hydrogeological conditions has indicated the proposed open pit requires in-pit and perimeter wells to achieve acceptable pit dewatering and slope depressurization targets. The pit dewatering design is based on lowering the groundwater table within the higher permeability zone to approximately 15 meters below the pit base elevation. In-pit groundwater wells will remove water from storage in the higher permeability zone. Perimeter dewatering wells will be established along the south high wall to lower and extend the cone of depression beyond the pit walls to provide the depressurization required from the open pit wall stability analyses. The design includes a schedule for installation of dewatering wells and includes backup dewatering wells and observation wells.

The dewatering design presents a reasonable plan which is considered suitable for the economic evaluation in the feasibility study. The design includes a minimum number of perimeter dewatering and observation wells. This design will be reassessed and updated using monitoring data collected during depressurization of the higher permeability bedrock zone. Dewatering rates and the hydrogeological behaviour of the bedrock will be continually assessed and updated to assist with ongoing open pit dewatering system management. This ongoing assessment will provide an efficient and cost effective open pit dewatering system.

8 – REFERENCES

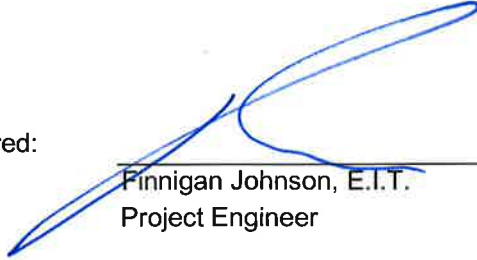
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9 – CERTIFICATION

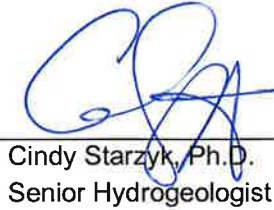
This report was prepared, reviewed and approved by the undersigned.

Prepared:

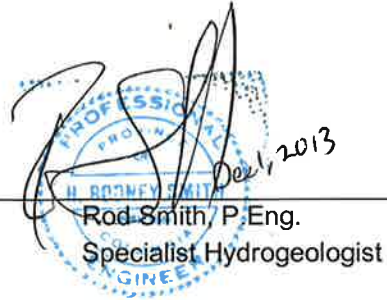


Finnigan Johnson, E.I.T.
Project Engineer

Reviewed:



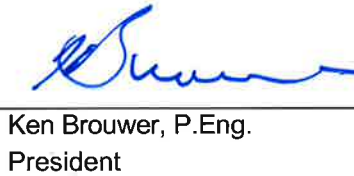
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Dec 1, 2013

Approved:



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President

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APPENDIX A

DRILLHOLE AND WELL CONSTRUCTION RECORDS

- Appendix A1 Observation Well Construction Logs
- Appendix A2 Pumping Well Construction Logs
- Appendix A3 Photos of Pumping Well Installation

APPENDIX A1
OBSERVATION WELL CONSTRUCTION LOGS
(Pages A1-1 to A1-12)

Project: BLACKWATER GOLD PROJECT

Drill Hole No. **PH13-1-1**

PAGE 1 of 1

Contractor: **Paycore Drilling**

Sample Type: **core**

Drilling Started: **13/01/2013**

Location: **Proposed open pit**

Total Depth: **283 m**

Date Installation: **21/01/2013**

Coordinates: **5,893,009 N, 375,169 E (UTM NAD83)**

Elevation: **1,594 m**

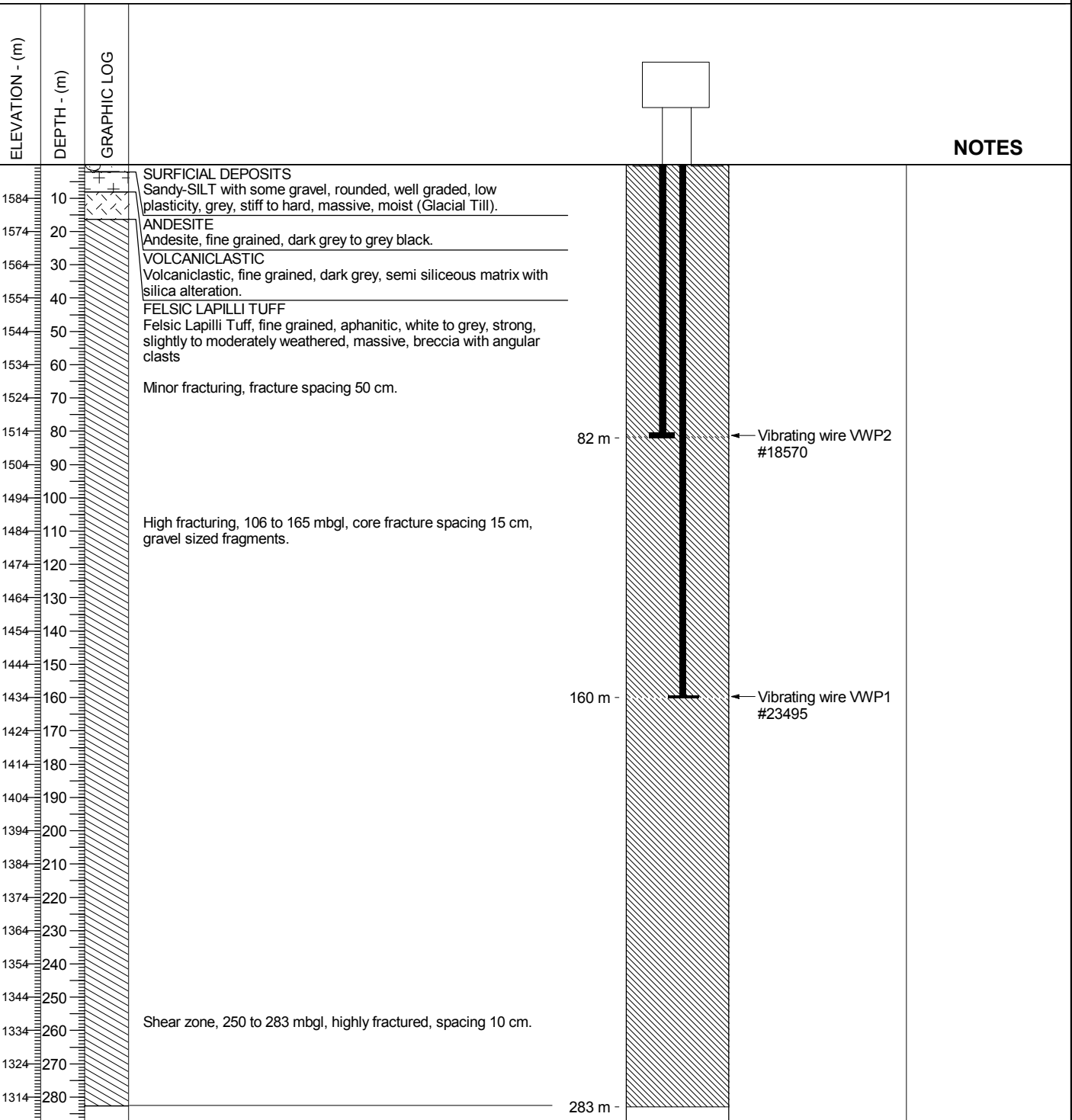
Supervised by: **MAS/LEP**

Drilling Method: **HQ Diamond Drilling**

Hole Diameter: **96mm (HQ)**

Reviewed by: **CAS**

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GENERAL REMARKS:

Geological logging and fault interpretation provided by KPL and New Gold field staff.

REV. 0 - Issued for Report

NEW GOLD INC.
BLACKWATER GOLD PROJECT
MONITORING WELL DETAILS FOR PH13-1-1

Knight Piésold
CONSULTING

PROJECT/ASSIGNMENT NO.
101-457/6

REF. NO.
9

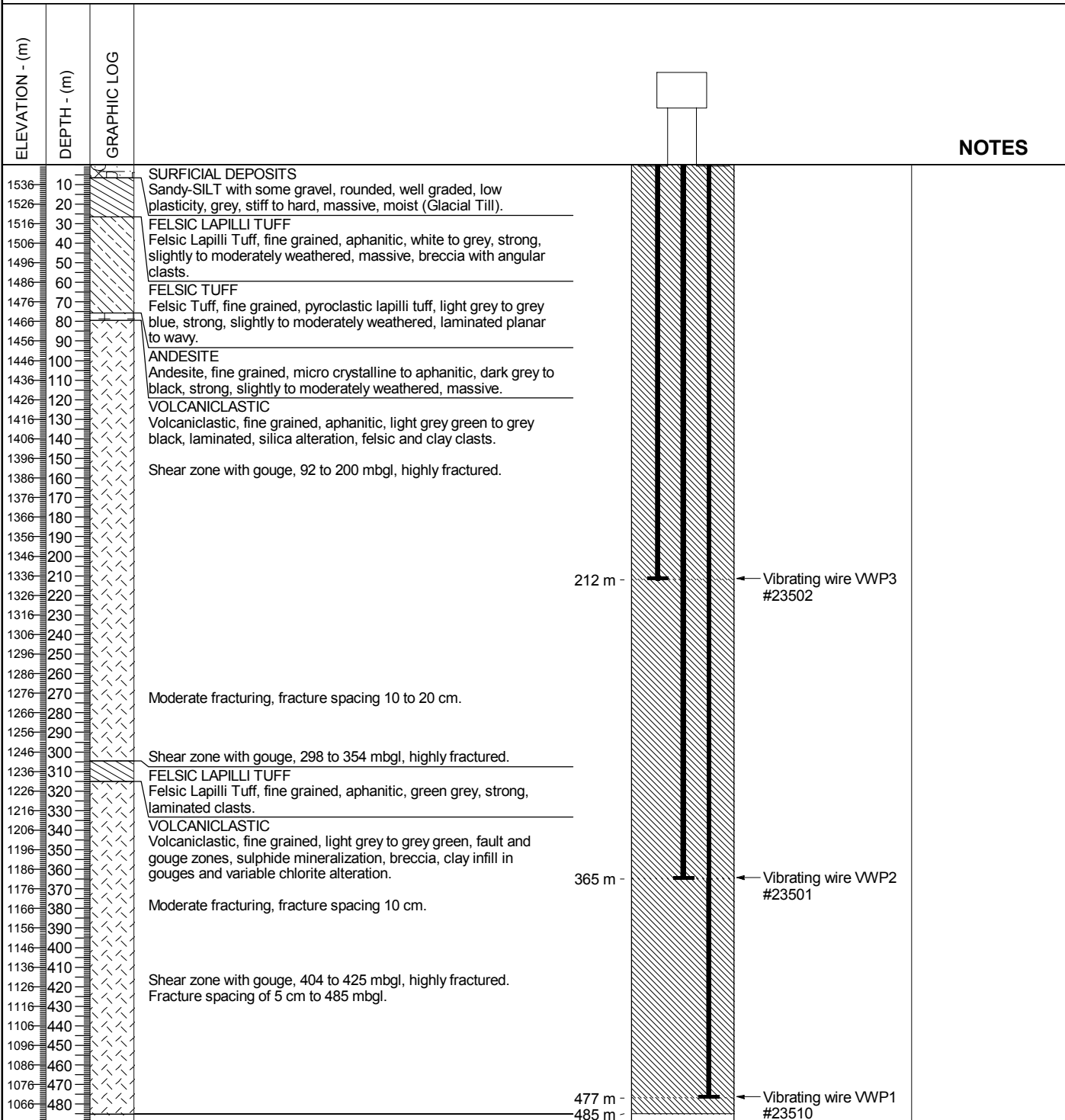
FIGURE: **Figure A.1**

REV.
0

Logging conducted according to the Canadian Foundation Engineering Manual, 4th Edition, 2006.

Project: BLACKWATER GOLD PROJECT	Drill Hole No. PH13-1-2	PAGE 1 of 1
Contractor: Paycore Drilling	Sample Type: core	Drilling Started: 16/01/2013
Location: Proposed open pit	Total Depth: 485 m	Date Installation: 05/02/2013
Coordinates: 5,893,288 N, 375,174 E (UTM NAD83)	Elevation: 1,546 m	Supervised by: MAS/LEP
Drilling Method: HQ Diamond Drilling	Hole Diameter: 96mm (HQ)	Reviewed by: CAS

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GENERAL REMARKS:
 Geological logging and fault interpretation provided by KPL and New Gold field staff.

NEW GOLD INC.
BLACKWATER GOLD PROJECT
MONITORING WELL DETAILS FOR PH13-1-2

PROJECT/ASSIGNMENT NO. 101-457/6	REF. NO. 9
FIGURE Figure A.2	REV. 0

REV. 0 - Issued for Report
 Logging conducted according to the Canadian Foundation Engineering Manual, 4th Edition, 2006.

Project: BLACKWATER GOLD PROJECT

Drill Hole No. **PH13-1-3**

PAGE 1 of 1

Contractor: **Paycore Drilling**

Sample Type: **core**

Drilling Started: **26/01/2013**

Location: **Proposed open pit**

Total Depth: **485 m**

Date Installation: **05/02/2013**

Coordinates: **5,893,188 N, 375,124 E (UTM NAD83)**

Elevation: **1,564 m**

Supervised by: **MAS/LEP**

Drilling Method: **HQ Diamond Drilling**

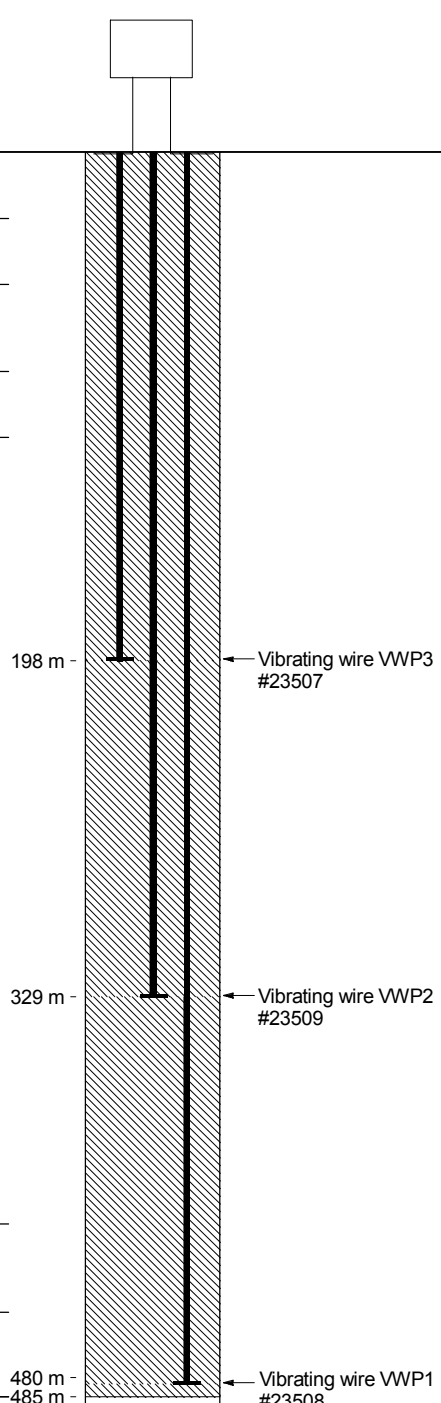
Hole Diameter: **96mm (HQ)**

Reviewed by: **CAS**

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ELEVATION - (m)
DEPTH - (m)
GRAPHIC LOG

1554	10	SURFICIAL DEPOSITS
1544	20	Sandy-SILT with some gravel, rounded, well graded, low plasticity, grey, stiff to hard, massive, moist (Glacial Till).
1534	30	FELSIC LAPILLI TUFF
1524	40	Felsic Lapilli Tuff, light grey, laminated felsic clasts with olive grey matrix.
1514	50	VOLCANICLASTIC
1504	60	Volcaniclastic, fine grained, aphanitic, light grey green, strong, slightly to moderately weathered, massive breccia with angular clasts
1494	70	
1484	80	
1474	90	FELSIC LAPILLI TUFF
1464	100	Felsic Lapilli Tuff, yellowish orange to dark orange oxidation prevalent through interval, clast-dominant.
1454	110	VOLCANICLASTIC
1444	120	Volcaniclastic, fine grained, aphanitic, grey green to green grey, clasts of chlorite and sericite, weakly banded texture, subrounded silica, mafic and felsic clasts.
1434	130	
1424	140	
1414	150	Moderate to Low amount of fracturing, fracture spacing of 10 to 50 cm.
1404	160	
1394	170	
1384	180	Shear zone, 130 to 200 mbgl, highly fractured, fracture spacing 5 cm.
1374	190	
1364	200	
1354	210	
1344	220	
1334	230	
1324	240	
1314	250	
1304	260	
1294	270	
1284	280	
1274	290	
1264	300	
1254	310	Moderate to Low amount of fracturing, fracture spacing of 10 to 50 cm.
1244	320	
1234	330	
1224	340	
1214	350	Shear zone, 346 to 352 mbgl, highly fractured, gravel to pebble sized fragments.
1204	360	
1194	370	
1184	380	
1174	390	
1164	400	
1154	410	Low amount of fracturing, spacing of +50 cm.
1144	420	FELSIC TUFF
1134	430	Felsic Tuff, light to mottled grey, laminated with sections of fault and rubble rock.
1124	440	
1114	450	
1104	460	VOLCANICLASTIC
1094	470	Volcaniclastic, fine grained, grey, clastic rock, minor laminated sections, polymictic clasts.
1084	480	



NOTES

GENERAL REMARKS:

Geological logging and fault interpretation provided by KPL and New Gold field staff.

REV. 0 - Issued for Report

Logging conducted according to the Canadian Foundation Engineering Manual, 4th Edition, 2006.

NEW GOLD INC.
BLACKWATER GOLD PROJECT
MONITORING WELL DETAILS FOR PH13-1-3

Knight Piésold
CONSULTING

PROJECT/ASSIGNMENT NO. 101-457/6	REF. NO. 9
FIGURE Figure A.3	REV. 0

Project: BLACKWATER GOLD PROJECT

Drill Hole No. **PH12-2-1**

PAGE 1 of 1

Contractor: **Paycore Drilling**

Sample Type: **core**

Drilling Started: **01/12/2012**

Location: **Proposed open pit**

Total Depth: **327 m**

Date Installation: **13/01/2013**

Coordinates: **5,893,112 N, 375,633 E (UTM NAD83)**

Elevation: **1,565 m**

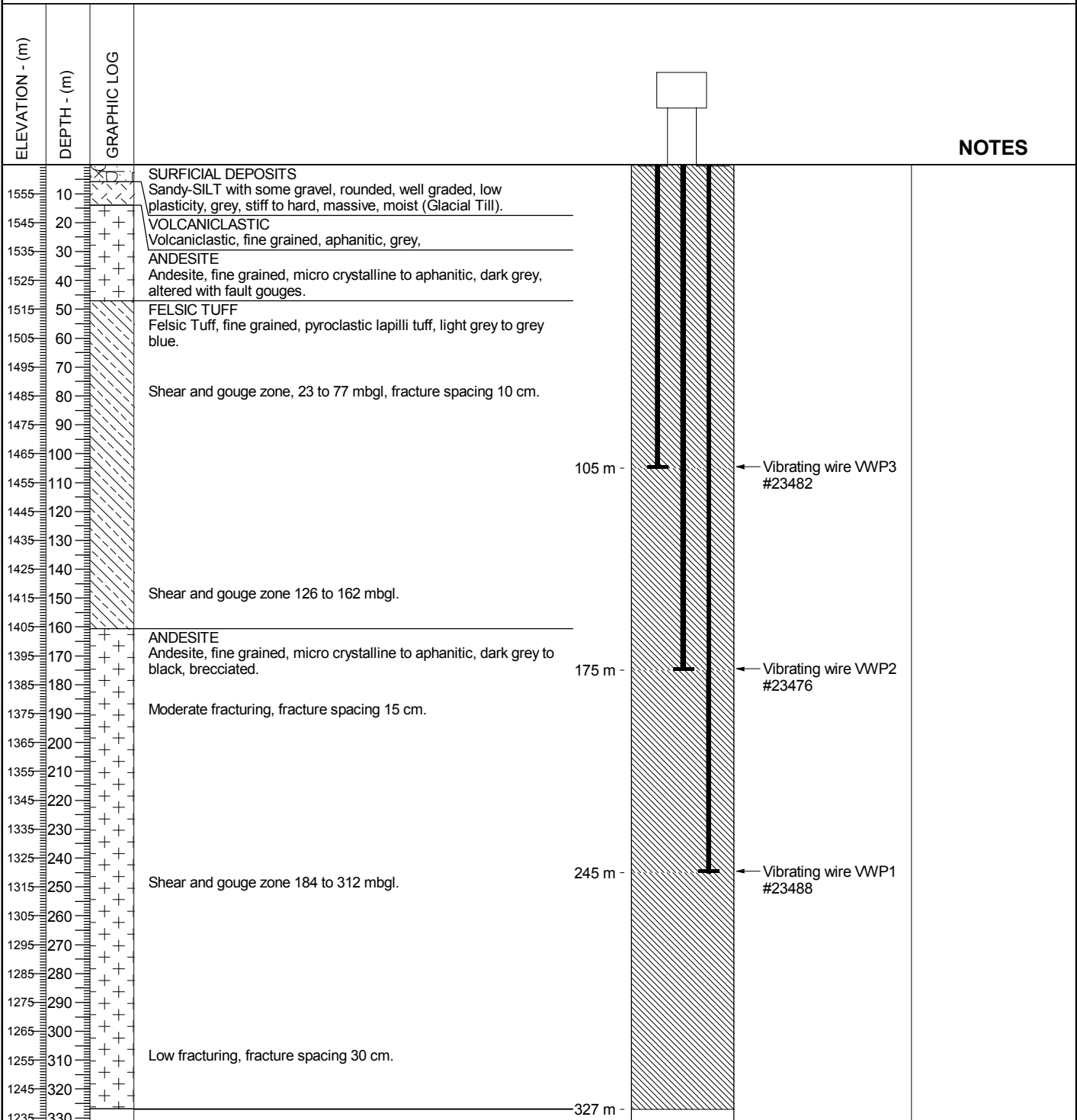
Supervised by: **MAS/LEP**

Drilling Method: **HQ Diamond Drilling**

Hole Diameter: **96mm (HQ)**

Reviewed by: **CAS**

File: M:\11010045706\A\DATA\TASK 206 - PHASE 5 - OPEN HYDROGEOLOGICAL SITE INVESTIGATION\GINT\BLACKWATER 2013_OPEN PIT_HYDROGEO.GPJ
Library: M:\11010045706\A\DATA\TASK 206 - PHASE 5 - OPEN HYDROGEOLOGICAL SITE INVESTIGATION\GINT\BLACKWATER LIBRARY V2.GLB - WELL COMPLETION DETAILS REVISED. DATA TEMPLATE MAY22.GDT. 21 Nov 13



NOTES

GENERAL REMARKS:
Geological logging and fault interpretation provided by KPL and New Gold field staff.

NEW GOLD INC.
BLACKWATER GOLD PROJECT
MONITORING WELL DETAILS FOR PH12-2-1

Knight Piésold CONSULTING	PROJECT/ASSIGNMENT NO. 101-457/6	REF. NO. 9
	FIGURE Figure A.4	REV. 0

REV. 0 - Issued for Report

Logging conducted according to the Canadian Foundation Engineering Manual, 4th Edition, 2006.

Project: BLACKWATER GOLD PROJECT

Drill Hole No. **PH13-2-2**

PAGE 1 of 1

Contractor: **Paycore Drilling**

Sample Type: **core**

Drilling Started: **16/01/2013**

Location: **Proposed open pit**

Total Depth: **430 m**

Date Installation: **26/02/2013**

Coordinates: **5,893,062 N , 375,684 E (UTM NAD83)**

Elevation: **1,568 m**

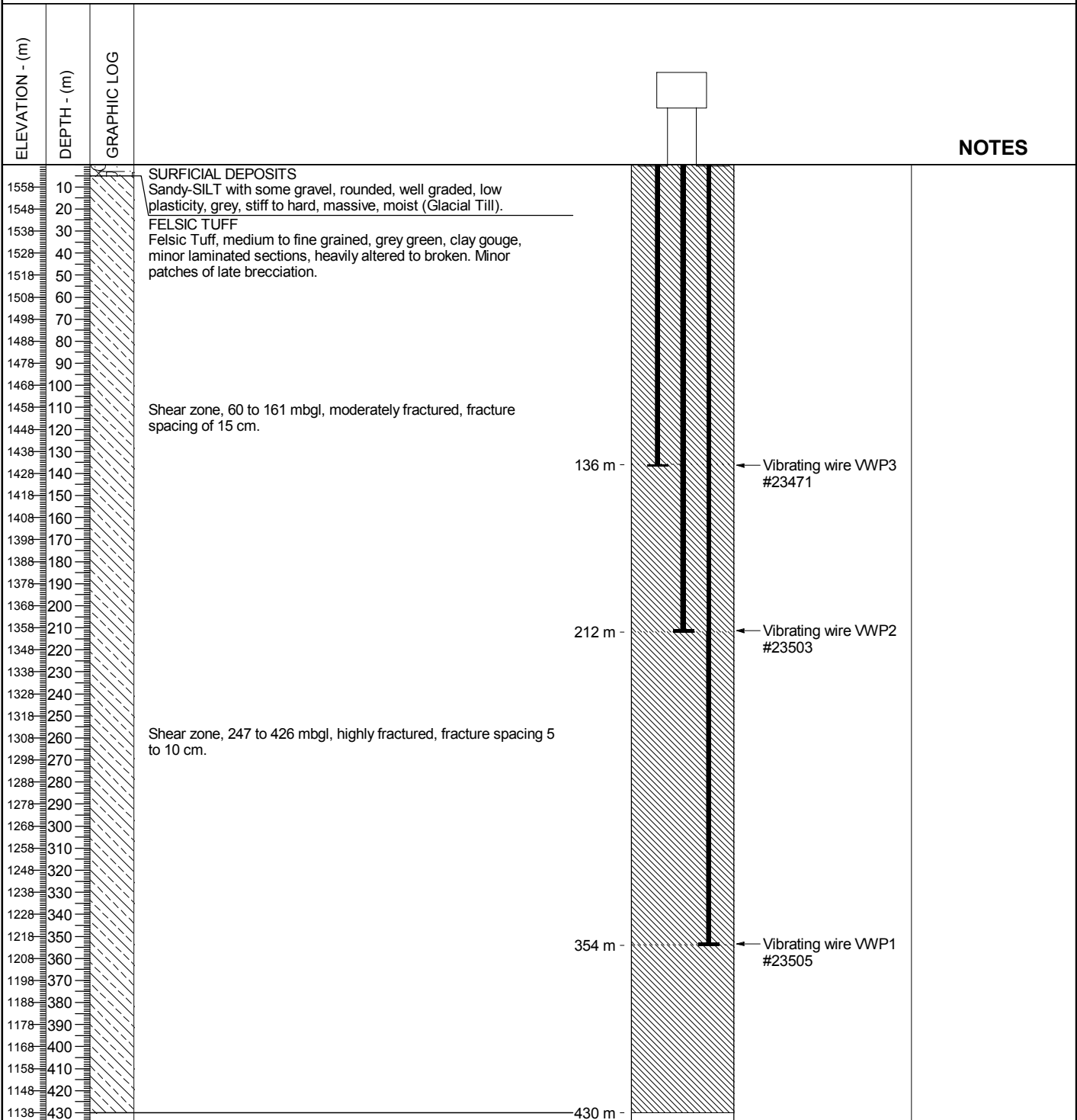
Supervised by: **MAS/LEP**

Drilling Method: **HQ Diamond Drilling**

Hole Diameter: **96mm (HQ)**

Reviewed by: **CAS**

File: M:\1101\0045706\A\DATA\TASK 206 - PHASE 5 - OPEN HYDROGEOLOGICAL SITE INVESTIGATION\GINT\BLACKWATER 2013_OPEN PIT_HYDROGEO.GPJ
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GENERAL REMARKS:
Geological logging and fault interpretation provided by KPL and New Gold field staff.

NEW GOLD INC. BLACKWATER GOLD PROJECT MONITORING WELL DETAILS FOR PH13-2-2	
	PROJECT/ASSIGNMENT NO. 101-457/6
FIGURE: Figure A.5	REF. NO. 9 REV. 0

REV. 0 - Issued for Report

Logging conducted according to the Canadian Foundation Engineering Manual, 4th Edition, 2006.

Project: BLACKWATER GOLD PROJECT

Drill Hole No. **PH13-2-3**

PAGE 1 of 1

Contractor: **Paycore Drilling**

Sample Type: **core**

Drilling Started: **07/01/2013**

Location: **Proposed open pit**

Total Depth: **433 m**

Date Installation: **16/02/2013**

Coordinates: **5,893,012 N , 375,684 E (UTM NAD83)**

Elevation: **1,582 m**

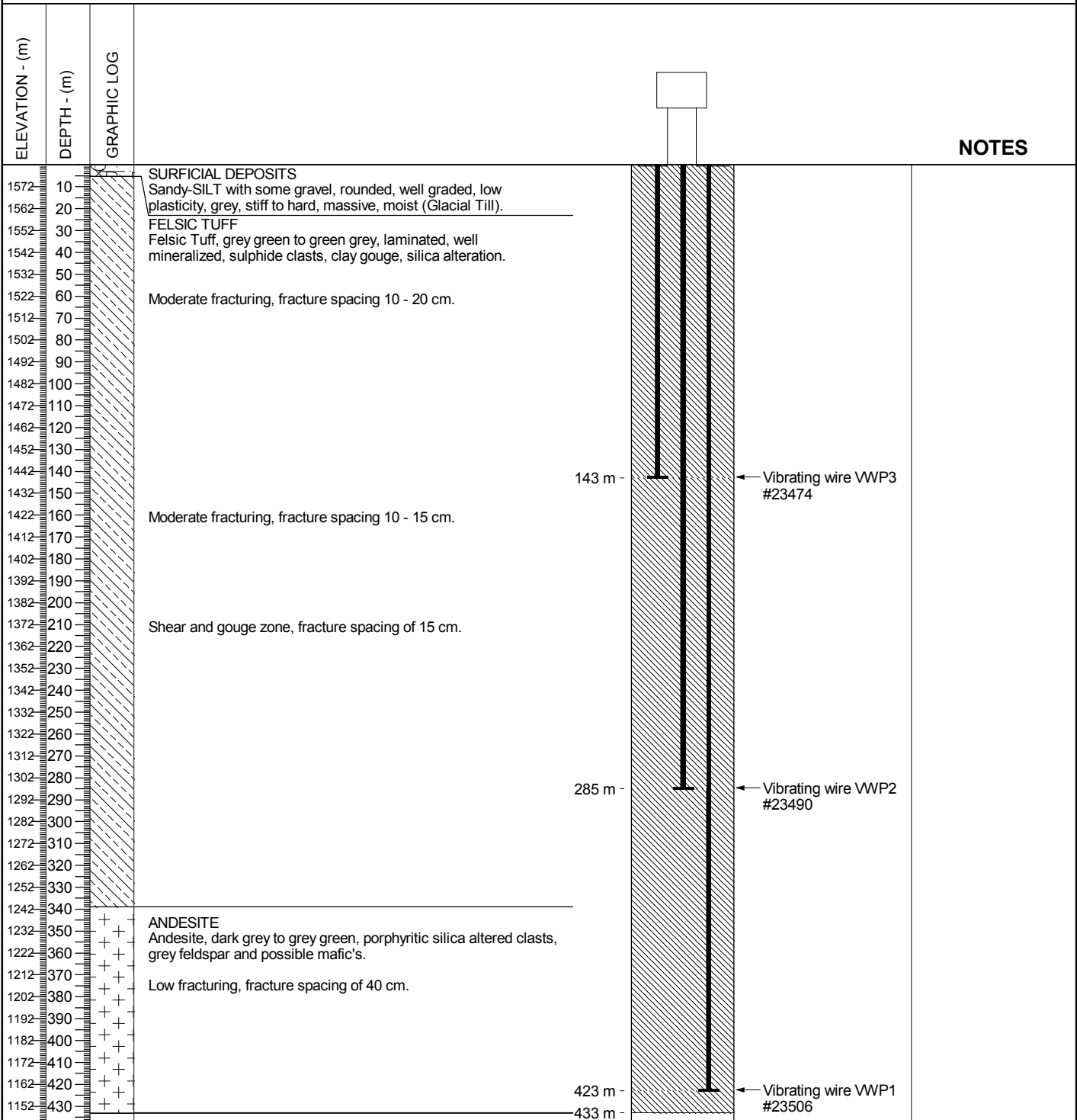
Supervised by: **MAS/LEP**

Drilling Method: **HQ Diamond Drilling**

Hole Diameter: **96mm (HQ)**

Reviewed by: **CAS**

File: M:\1101\0045706\A\DATA\TASK 206 - PHASE 5 - OPEN HYDROGEOLOGICAL SITE INVESTIGATION\GINT\BLACKWATER 2013_OPEN PIT_HYDROGEO.GPJ
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GENERAL REMARKS:
Geological logging and fault interpretation provided by KPL and New Gold field staff.

NEW GOLD INC.
BLACKWATER GOLD PROJECT
MONITORING WELL DETAILS FOR PH13-2-3

Knight Piésold
CONSULTING

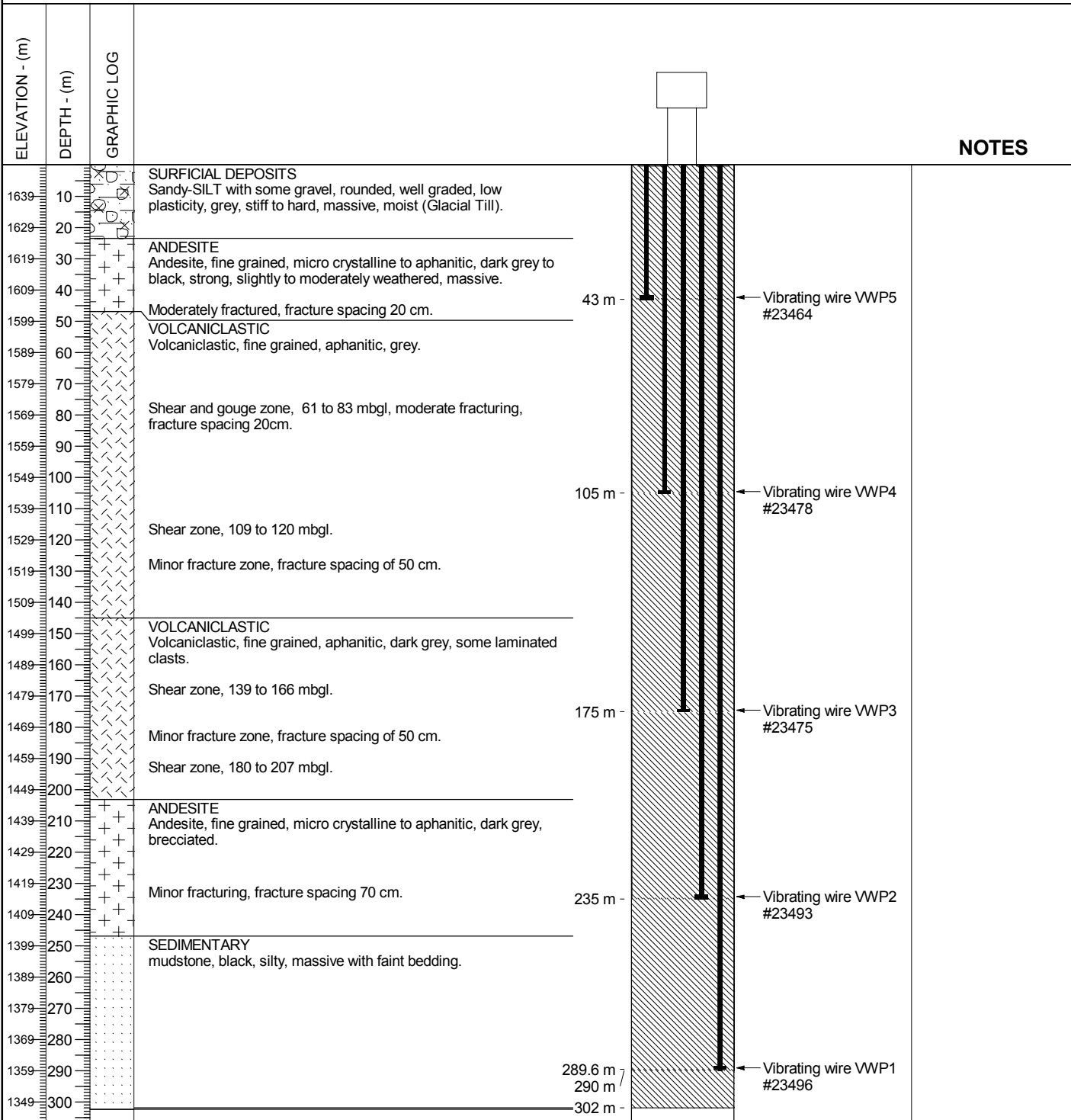
PROJECT/ASSIGNMENT NO. 101-457/6	REF. NO. 9
FIGURE Figure A.6	REV. 0

REV. 0 - Issued for Report

Logging conducted according to the Canadian Foundation Engineering Manual, 4th Edition, 2006.

Project: BLACKWATER GOLD PROJECT	Drill Hole No. PH12-3-1	PAGE 1 of 1
Contractor: Paycore Drilling	Sample Type: core	Drilling Started: 08/11/2012
Location: Southeast of proposed open pit	Total Depth: 302 m	Date Installation: 15/11/2012
Coordinates: 5,892,341 N, 375,855 E (UTM NAD83)	Elevation: 1,649 m	Supervised by: MAS/LEP
Drilling Method: HQ Diamond Drilling	Hole Diameter: 96mm (HQ)	Reviewed by: CAS

File: M:\11010045706\A\DATA\TASK 206 - PHASE 5 - OPEN HYDROGEOLOGICAL SITE INVESTIGATION\GINT\BLACKWATER 2013_OPEN PIT_HYDROGEO.GPJ
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GENERAL REMARKS:
 Geological logging and fault interpretation provided by KPL and New Gold field staff.

NEW GOLD INC. BLACKWATER GOLD PROJECT MONITORING WELL DETAILS FOR PH12-3-1		
		PROJECT/ASSIGNMENT NO. 101-457/6
REV. 0 - Issued for Report		REF. NO. 9
Logging conducted according to the Canadian Foundation Engineering Manual, 4th Edition, 2006.		FIGURE: Figure A.7
		REV. 0

Project: BLACKWATER GOLD PROJECT

Drill Hole No. **PH12-3-2**

PAGE 1 of 1

Contractor: **Paycore Drilling**

Sample Type: **core**

Drilling Started: **24/11/2012**

Location: **Southeast of proposed open pit**

Total Depth: **302 m**

Date Installation: **01/12/2012**

Coordinates: **5,892,390 N, 375,905 E (UTM NAD83)**

Elevation: **1,641 m**

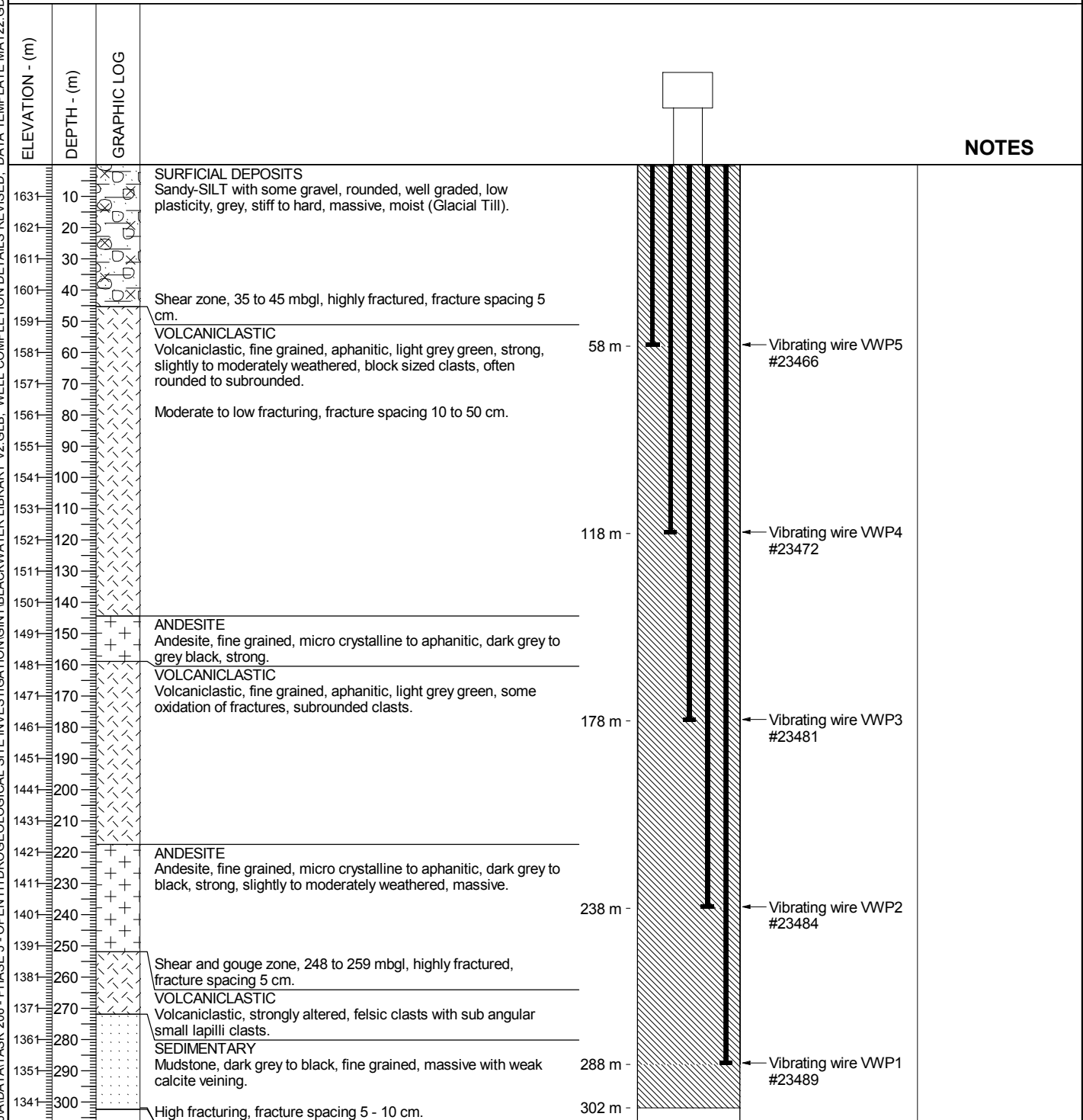
Supervised by: **MAS/LEP**

Drilling Method: **HQ Diamond Drilling**

Hole Diameter: **96mm (HQ)**

Reviewed by: **CAS**

File: M:\1101\0045706\A\DATA\TASK 206 - PHASE 5 - OPEN HYDROGEOLOGICAL SITE INVESTIGATION\GINT\BLACKWATER 2013_OPEN PIT_HYDROGEO.GPJ
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GENERAL REMARKS:

Geological logging and fault interpretation provided by KPL and New Gold field staff.

REV. 0 - Issued for Report

Logging conducted according to the Canadian Foundation Engineering Manual, 4th Edition, 2006.

NEW GOLD INC.
BLACKWATER GOLD PROJECT
MONITORING WELL DETAILS FOR PH12-3-2

Knight Piésold
CONSULTING

PROJECT/ASSIGNMENT NO.
101-457/6

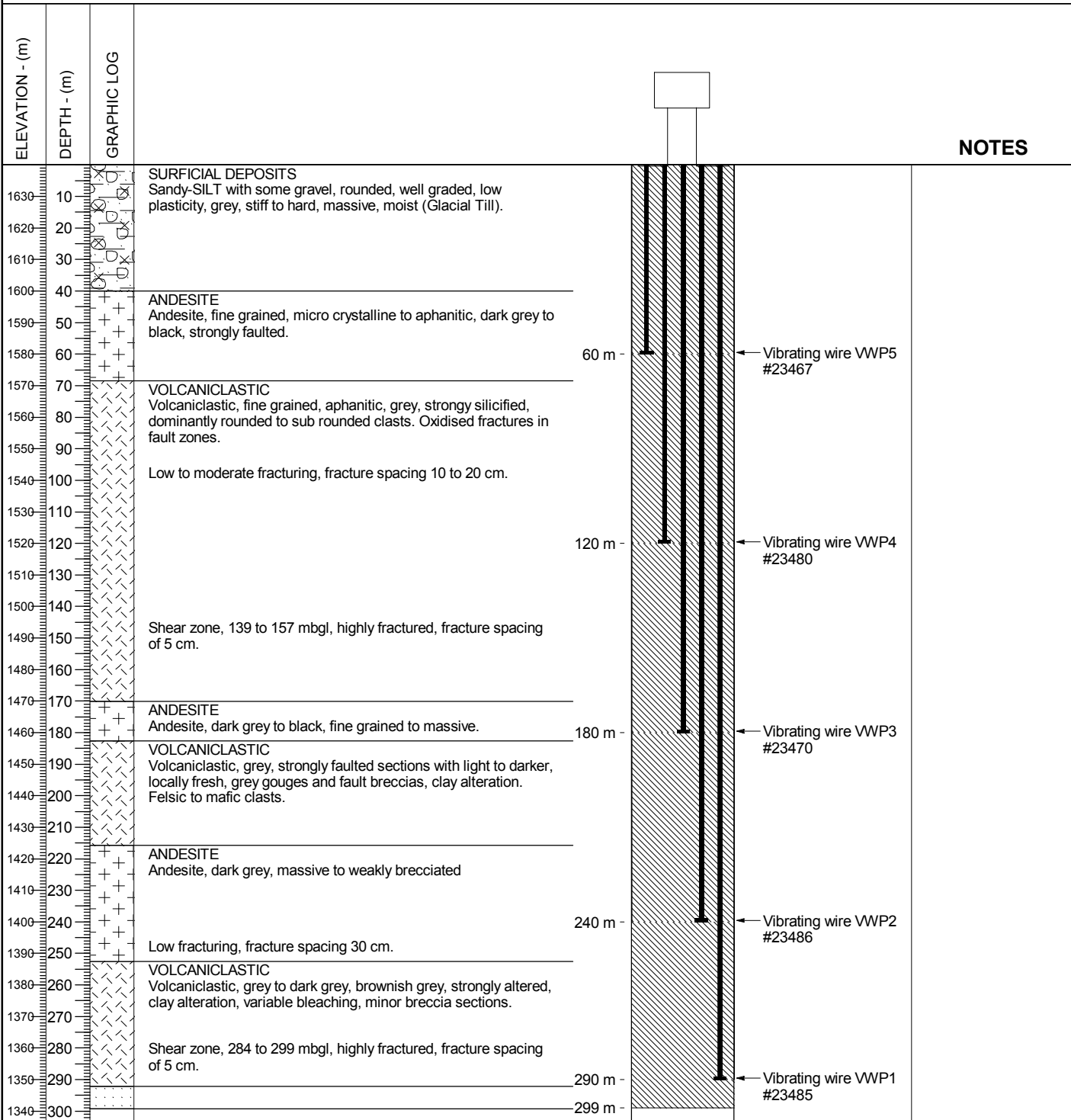
REF. NO.
9

FIGURE: **Figure A.8**

REV.
0

Project: BLACKWATER GOLD PROJECT	Drill Hole No. PH12-3-3	PAGE 1 of 1
Contractor: Paycore Drilling	Sample Type: core	Drilling Started: 13/11/2012
Location: Southeast of proposed open pit	Total Depth: 299 m	Date Installation: 24/11/2012
Coordinates: 5,892,441 N, 375,905 E (UTM NAD83)	Elevation: 1,640 m	Supervised by: MAS/LEP
Drilling Method: HQ Diamond Drilling	Hole Diameter: 96mm (HQ)	Reviewed by: CAS

File: M:\1101\0045706\A\DATA\TASK 206 - PHASE 5 - OPEN HYDROGEOLOGICAL SITE INVESTIGATION\GINT\BLACKWATER 2013_OPEN PIT_HYDROGEO.GPJ
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GENERAL REMARKS:
 Geological logging and fault interpretation provided by KPL and New Gold field staff.

NEW GOLD INC.
BLACKWATER GOLD PROJECT
MONITORING WELL DETAILS FOR PH12-3-3

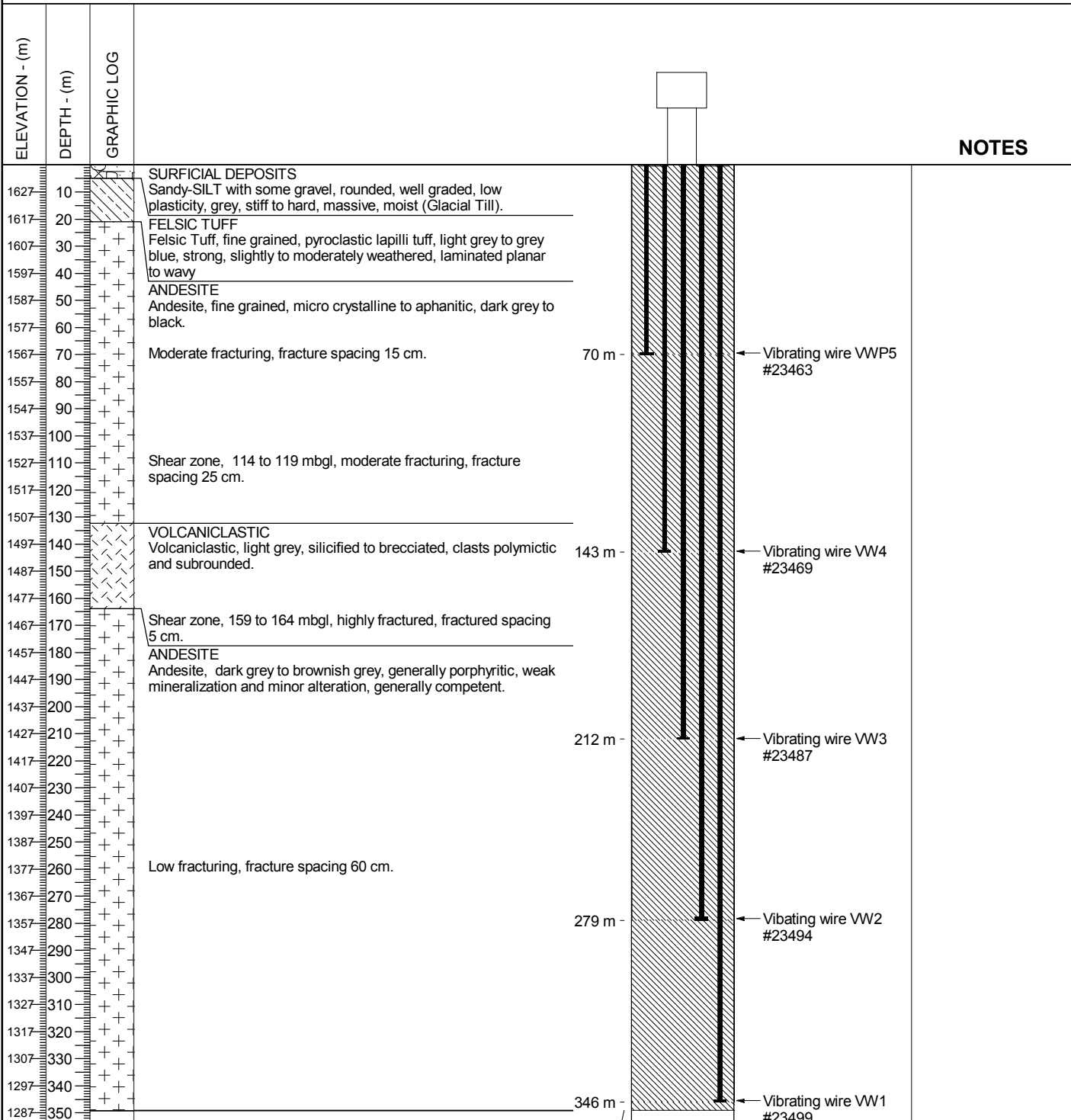
	PROJECT/ASSIGNMENT NO. 101-457/6	REF. NO. 9
	FIGURE: Figure A.9	REV. 0

REV. 0 - Issued for Report

Logging conducted according to the Canadian Foundation Engineering Manual, 4th Edition, 2006.

Project: BLACKWATER GOLD PROJECT	Drill Hole No. PH12-4-1	PAGE 1 of 1
Contractor: Paycore Drilling	Sample Type: core	Drilling Started: 21/11/2012
Location: Southwest of proposed open pit	Total Depth: 349 m	Date Installation: 28/11/2012
Coordinates: 5,892,543 N, 375,138 E (UTM NAD83)	Elevation: 1,637 m	Supervised by: MAS/LEP
Drilling Method: HQ Diamond Drilling	Hole Diameter: 96mm (HQ)	Reviewed by: CAS

File: M:\1101\0045706\A\DATA\TASK 206 - PHASE 5 - OPEN HYDROGEOLOGICAL SITE INVESTIGATION\GINT\BLACKWATER 2013_OPEN PIT_HYDROGEO.GPJ
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GENERAL REMARKS:
 Geological logging and fault interpretation provided by KPL and New Gold field staff.

NEW GOLD INC. BLACKWATER GOLD PROJECT MONITORING WELL DETAILS FOR PH12-4-1		
	PROJECT/ASSIGNMENT NO. 101-457/6	REF. NO. 9
	FIGURE. Figure A.10	REV. 0

REV. 0 - Issued for Report

Logging conducted according to the Canadian Foundation Engineering Manual, 4th Edition, 2006.

Project: BLACKWATER GOLD PROJECT

Drill Hole No. **PH12-4-2**

PAGE 1 of 1

Contractor: **Paycore Drilling**

Sample Type: **core**

Drilling Started: **29/11/2012**

Location: **Southwest of proposed open pit**

Total Depth: **350 m**

Date Installation: **05/12/2013**

Coordinates: **5,892,593 N, 375,087 E (UTM NAD83)**

Elevation: **1,631 m**

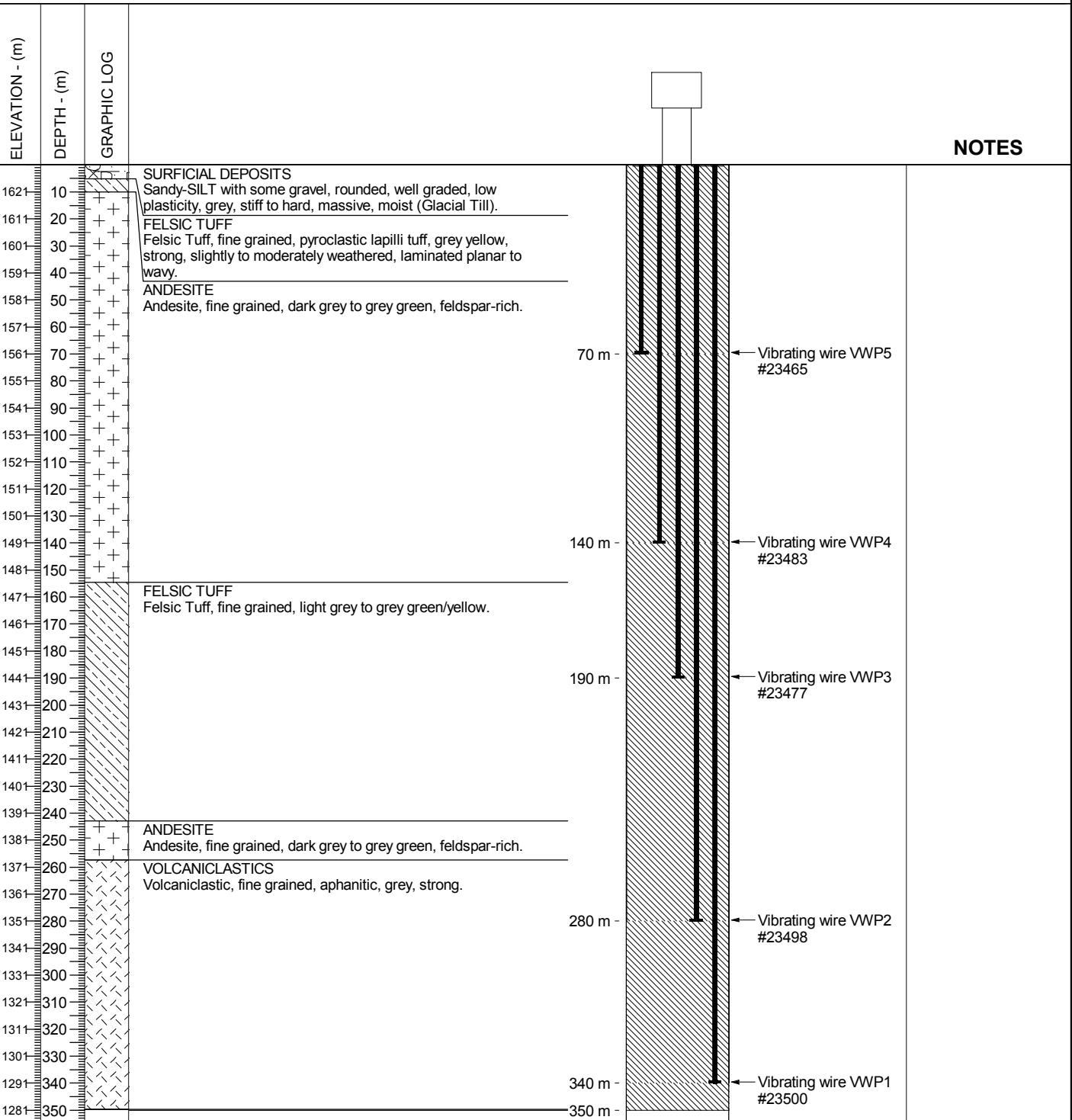
Supervised by: **MAS/LEP**

Drilling Method: **HQ Diamond Drilling**

Hole Diameter: **96mm (HQ)**

Reviewed by: **CAS**

File: M:\1101\0045706\A\DATA\TASK 206 - PHASE 5 - OPEN HYDROGEOLOGICAL SITE INVESTIGATION\GINT\BLACKWATER 2013_OPEN PIT_HYDROGEO.GPJ
Library: M:\1101\0045706\A\DATA\TASK 206 - PHASE 5 - OPEN HYDROGEOLOGICAL SITE INVESTIGATION\GINT\BLACKWATER LIBRARY\Z.GLB - WELL COMPLETION DETAILS REVISED. DATA TEMPLATE MAY22.GDT, 21 Nov 13



NOTES

GENERAL REMARKS:

Geological logging and fault interpretation provided by KPL and New Gold field staff.

REV. 0 - Issued for Report

NEW GOLD INC.
BLACKWATER GOLD PROJECT
MONITORING WELL DETAILS FOR PH12-4-2

Knight Piésold
CONSULTING

PROJECT/ASSIGNMENT NO. 101-457/6

REF. NO. 9

FIGURE: Figure A.11

REV. 0

Logging conducted according to the Canadian Foundation Engineering Manual, 4th Edition, 2006.

Project: BLACKWATER GOLD PROJECT

Drill Hole No. **PH12-4-3**

PAGE 1 of 1

Contractor: **Paycore Drilling**

Sample Type: **core**

Drilling Started: **06/12/2012**

Location: **Southwest of proposed open pit**

Total Depth: **351 m**

Date Installation: **12/12/2013**

Coordinates: **5,892,643 N, 375,087 E (UTM NAD83)**

Elevation: **1,622 m**

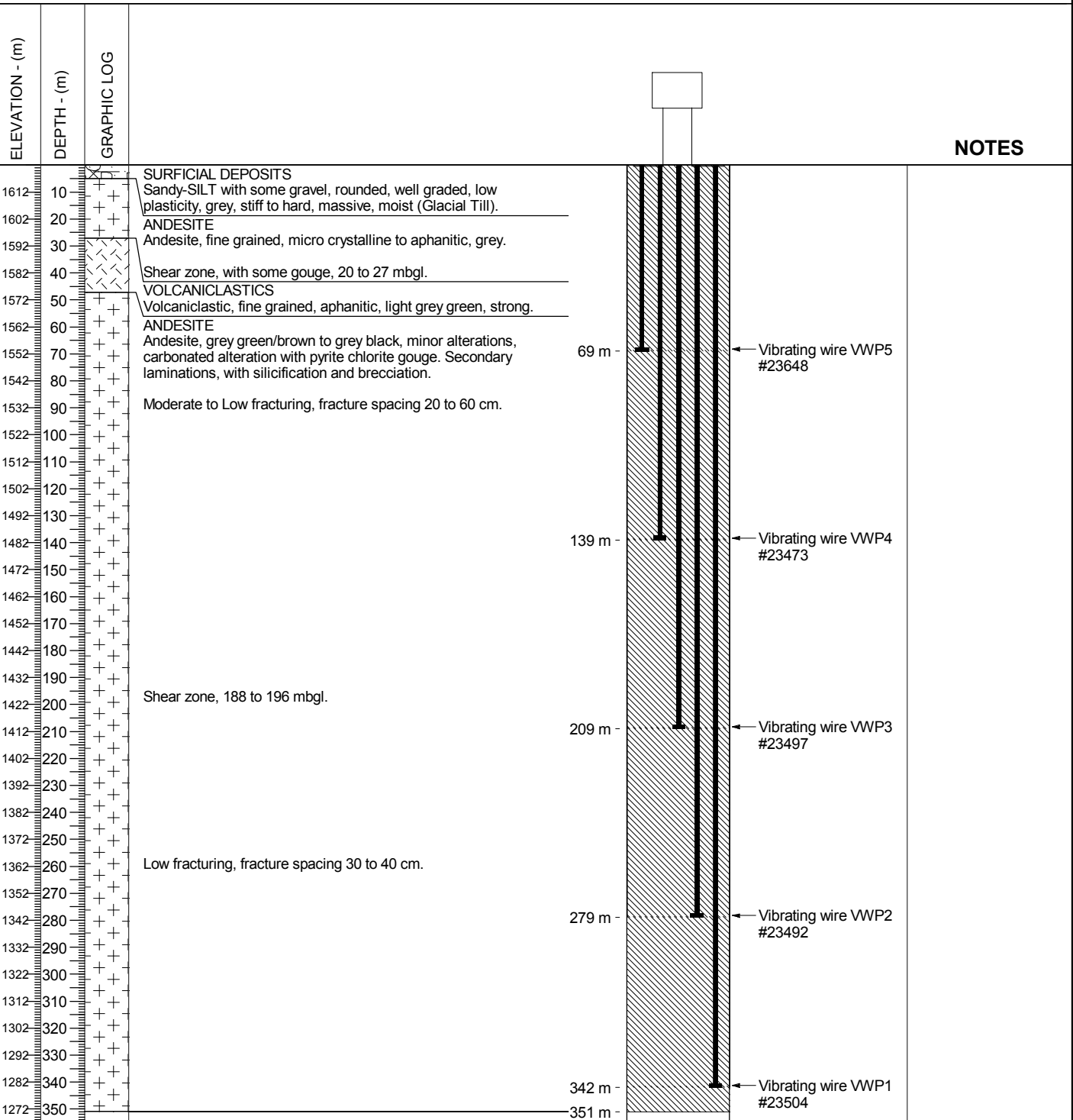
Supervised by: **MAS/LEP**

Drilling Method: **HQ Diamond Drilling**

Hole Diameter: **96mm (HQ)**

Reviewed by: **CAS**

File: M:\1101\0045706\A\DATA\TASK 206 - PHASE 5 - OPEN HYDROGEOLOGICAL SITE INVESTIGATION\GINT\BLACKWATER 2013_OPEN PIT_HYDROGEO.GPJ
Library: M:\1101\0045706\A\DATA\TASK 206 - PHASE 5 - OPEN HYDROGEOLOGICAL SITE INVESTIGATION\GINT\BLACKWATER LIBRARY V2.GLB - WELL COMPLETION DETAILS REVISED. DATA TEMPLATE MAY22.GDT, 21 Nov 13



NOTES

GENERAL REMARKS:

Geological logging and fault interpretation provided by KPL and New Gold field staff.

REV. 0 - Issued for Report

NEW GOLD INC.
BLACKWATER GOLD PROJECT
MONITORING WELL DETAILS FOR PH12-4-3

Knight Piésold
CONSULTING

PROJECT/ASSIGNMENT NO. 101-457/6	REF. NO. 9
FIGURE Figure A.12	REV. 0

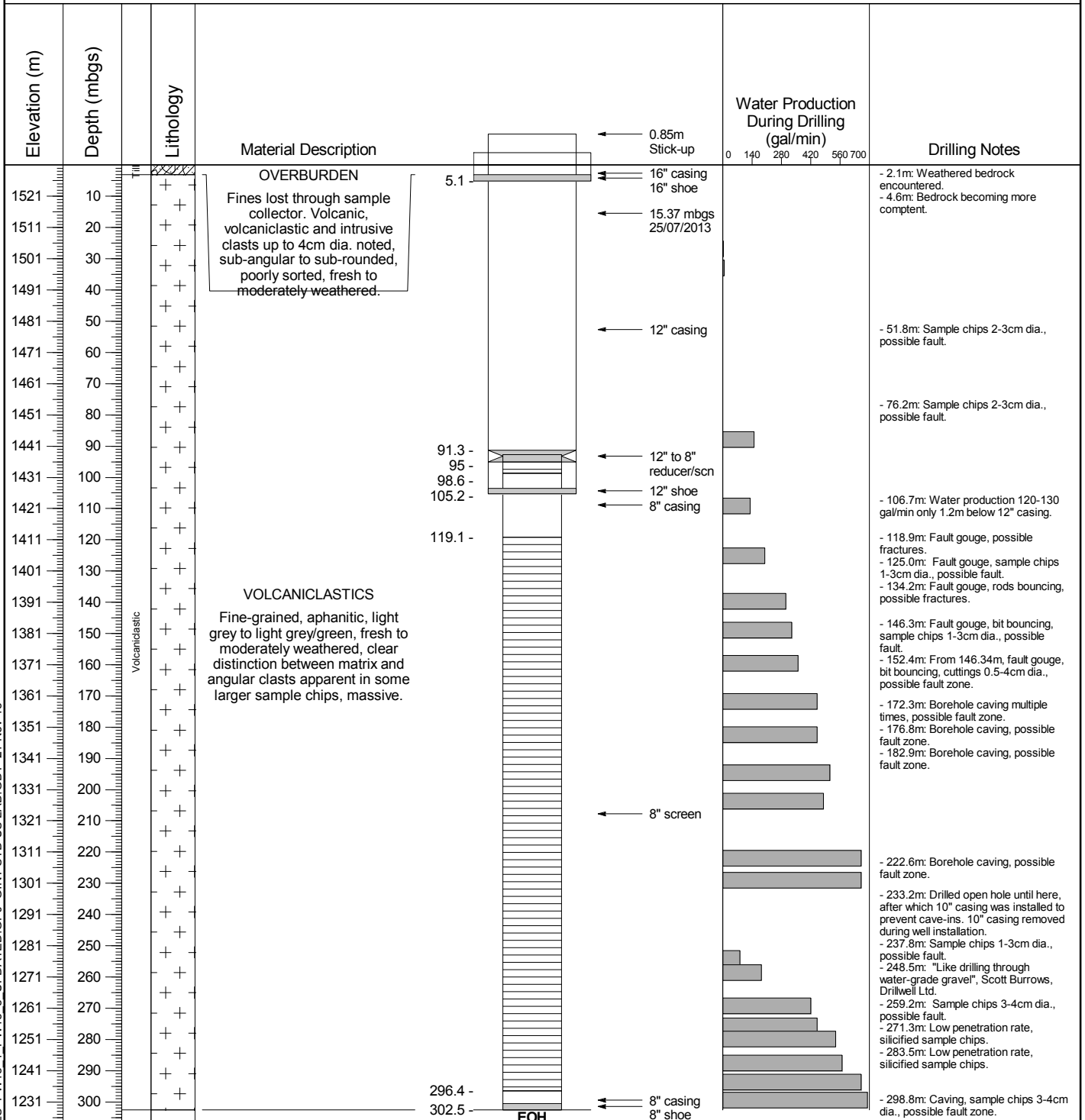
Logging conducted according to the Canadian Foundation Engineering Manual, 4th Edition, 2006.

APPENDIX A2
PUMPING WELL CONSTRUCTION LOGS
(Pages A2-1 to A2-2)

Project: BLACKWATER GOLD
 Location: Northwest are of proposed Open Pit
 Coordinates: 5893288N , 0375124E, UTM 10 NAD 83
 Contractor: DRILLWELL LTD.
 Drilling Method: Dual Air Rotary
 Drilling Rig: Foremost DR-24HD

BoreHole PW13-1
 Sample Type: CUTTINGS
 Total Depth: 302.5 m
 Elevation: 1531 m
 Azimuth, Dip: n/a°, -90°
 Casing Dia: 16", 12", 8"

PAGE 1 of 1
 Borehole Drilled: 11JUN'13 - 14JUL'14
 Well Installed: 09JUL'13 - 14JUL'13
 Well Developed: 15JUL13
 Supervised by: L.P, E.W
 Reviewed by: C.A.S



GENERAL REMARKS:
 Elevation and UTM coordinates provided by Allnorth survey, August 2013.
 Veriperim, carbon steel, 9.4% pre perforated pipe used for screen sections.
 All drilling notes provided by onsite KPL and Drillwell representatives.

REV. 0 - Issued with report

Knight Piésold
CONSULTING

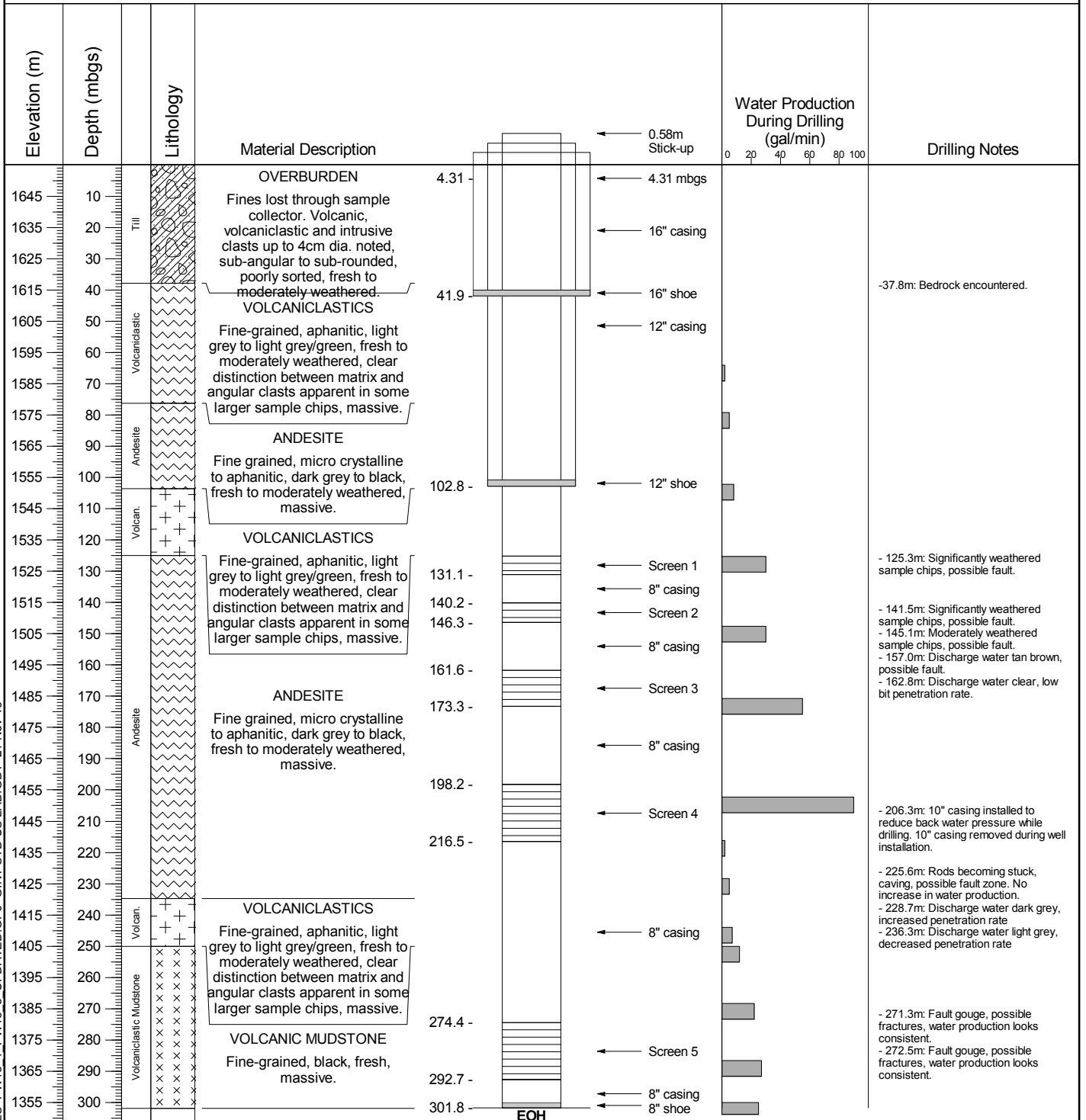
PROJECT/ASSIGNMENT NO. VA101-00457/6	REF. NO. 9	REV. 0
FIGURE A2.1		

PUMPING WELL DETAILS PW13_1_PW13_3_UPDATED.GPJ GINT STD US LAB.GDT 21 Nov 13

Project: BLACKWATER GOLD
Location: Southeast wall of proposed Open Pit
Coordinates: 5892341N , 0375905E, UTM 10 NAD 83
Contractor: DRILLWELL LTD.
Drilling Method: Dual Air Rotary
Drilling Rig: Foremost DR-24HD

BoreHole: PW13-3
Sample Type: CUTTINGS
Total Depth: 301.8 m
Elevation: 1655 m
Azimuth, Dip: n/a°, -90°
Casing Dia: 16", 12", 8"

PAGE: 1 of 1
Borehole Drilled: 22MAY'13 - 02JUN'13
Well Installed: 03JUN'13 - 10JUN'13
Well Developed: 10JUN13
Supervised by: L.P., E.W.
Reviewed by: C.A.S



GENERAL REMARKS:
 Elevation and UTM coordinates provided by Allnorth survey, August 2013.
 Veriperim, carbon steel, 9.4% pre perforated pipe used for screen sections.
 All drilling notes provided by onsite KPL and Drillwell representatives.

Knight Piésold CONSULTING

PROJECT/ASSIGNMENT NO. **VA101-00457/6** REF. NO. **9**

FIGURE A2.2 REV. **0**

REV. 0 - Issued with report

Logging conducted according to the Canadian Foundation Engineering Manual, 4th Edition, 2006.

APPENDIX A3

PHOTOS OF PUMPING WELL INSTALLATION

(Pages A3-1)



PHOTO 1 – Variperperm 9.4% perforated pipe screen section



PHOTO 2 – PW13-1 discharge measurement

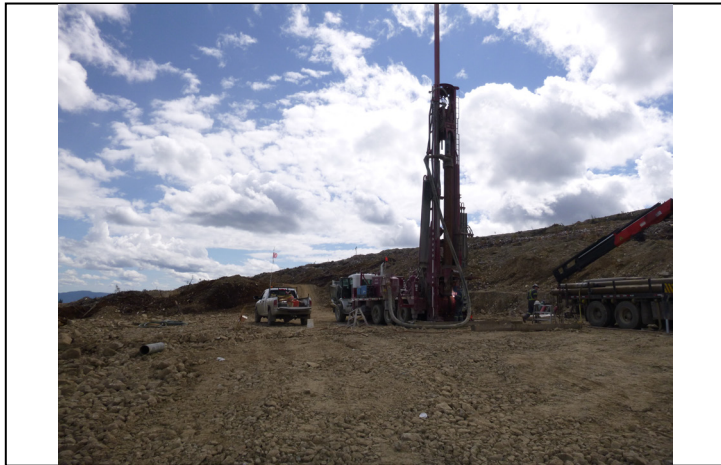


PHOTO 3 – PW13-1 drilling pad



PHOTO 4 – 16 inch casing weld, PW13-3

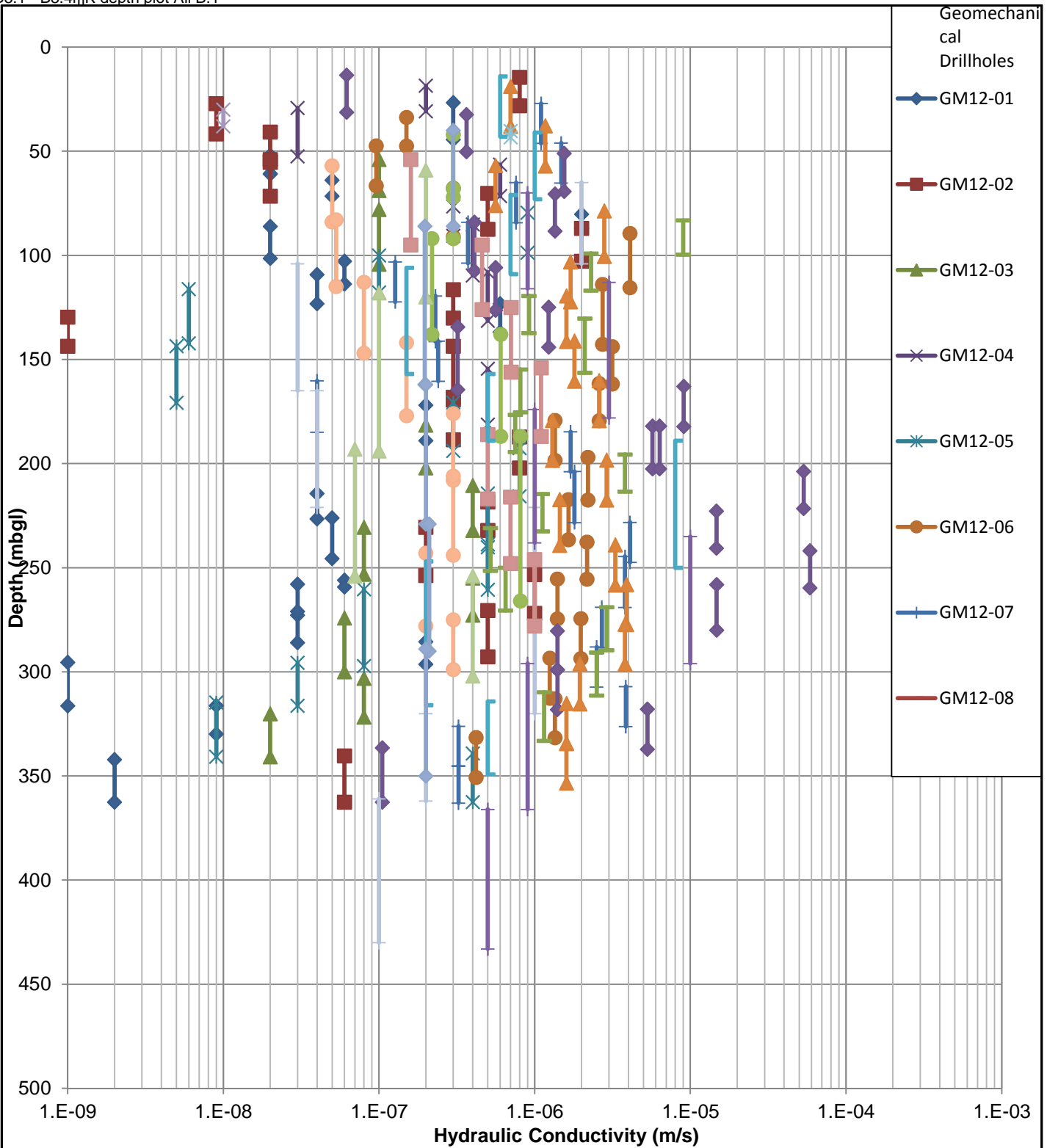
NEW GOLD INC.
BLACKWATER GOLD PROJECT

APPENDIX B

HYDRAULIC ANALYSIS

- Appendix B1 Summary of Observation Well and Geomechanical Drillhole
Hydraulic Analysis Results
- Appendix B2 Observation Wells Hydraulic Analysis
- Appendix B3 Pumping Well PW13-1 Hydraulic Results and Analysis Sheets
- Appendix B4 Pumping Well PW13-3 Hydraulic Results and Analysis Sheets

APPENDIX B1
HYDRAULIC TESTING RESULTS SUMMARY
(Pages B1-1 to B1-7)



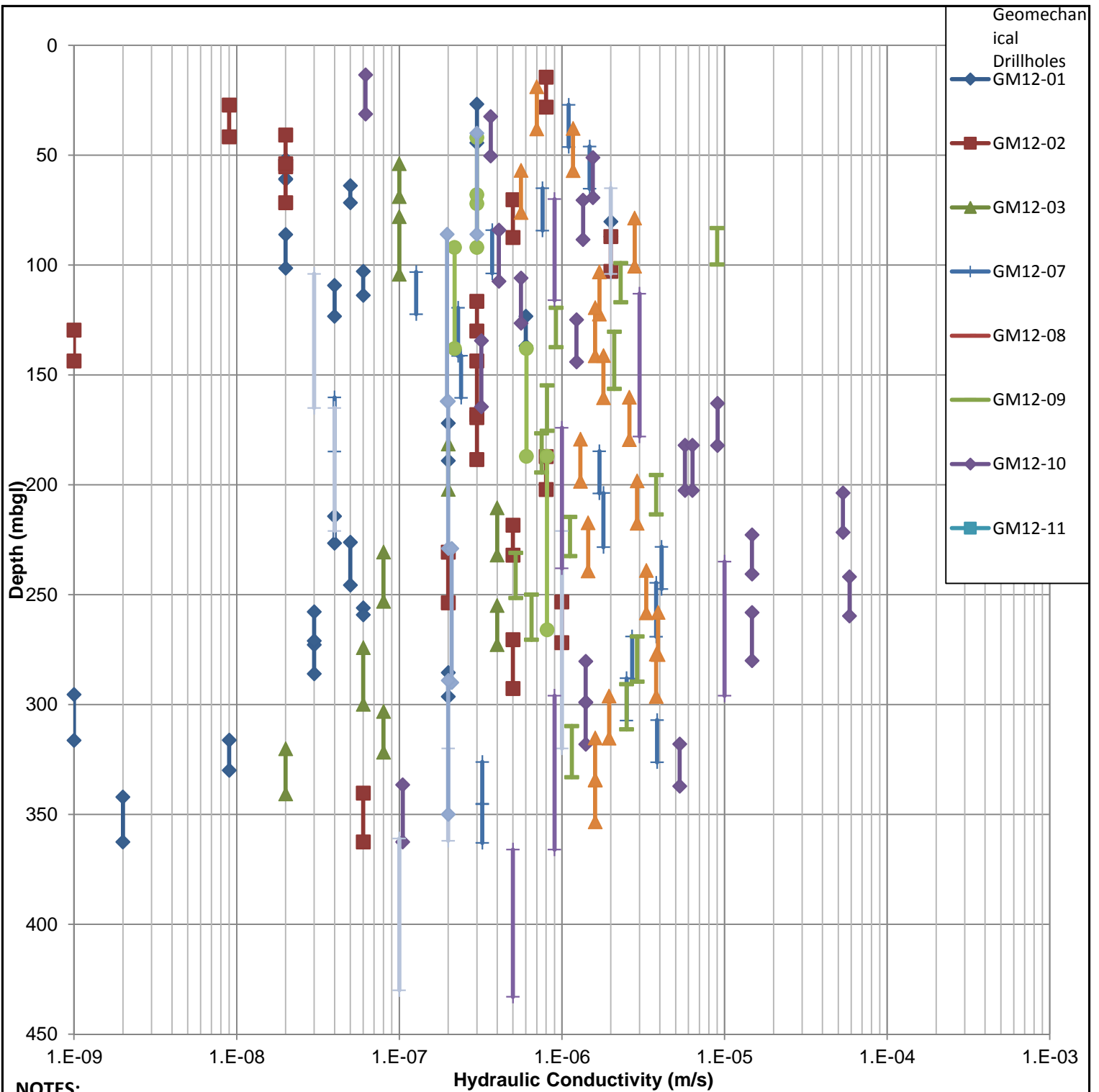
NOTES:

1. HYDRAULIC CONDUCTIVITY RESULTS FOR ALL GM HOLES FROM KPL FEASIBILITY OPEN PIT SLOPE DESIGN REPORT, VA101-457/6-2 (KPL, 2013b).
2. DEPTHS ADJUSTED TO METERS BELOW GROUND LEVEL FOR INCLINED GEOMECHANICAL DRILLHOLES.
3. HYDRAULIC CONDUCTIVITY TEST RESULTS ARE

PRESENTED IN TABLE B1.1

REV	DATE	DESCRIPTION	FTJ PREP'D	CAS CHK'D	KJB APP'D

NEW GOLD INC.	
BLACKWATER GOLD PROJECT	
HYDRAULIC CONDUCTIVITY WITH DEPTH (ALL TESTING)	
<i>Knight Piésold</i> CONSULTING	P/A NO. VA101-457/6
FIGURE B1.1	
REF. NO. 9	REV 0

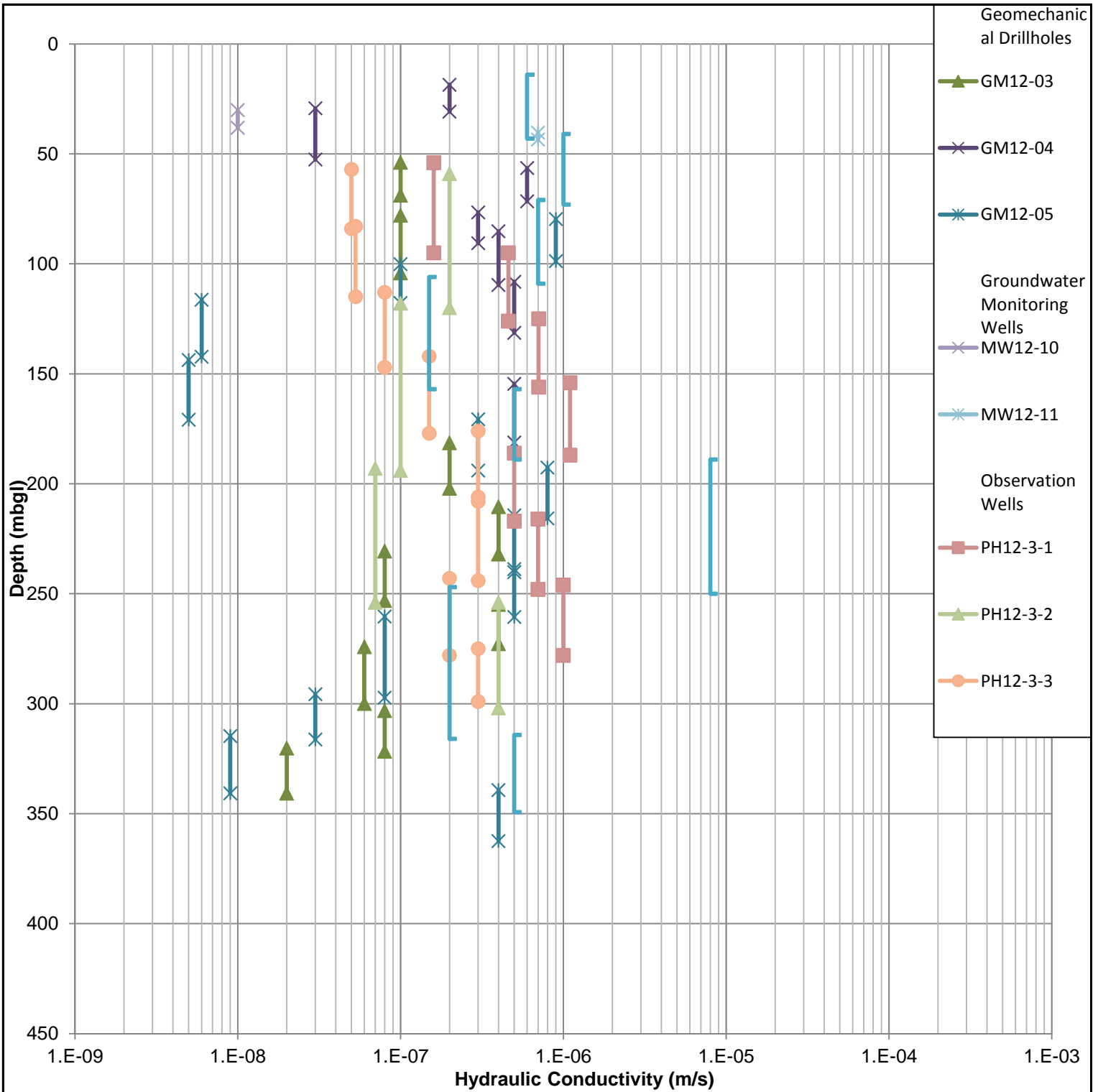


NOTES:

1. HYDRAULIC CONDUCTIVITY RESULTS FOR ALL GM HOLES FROM KPL FEASIBILITY OPEN PIT SLOPE DESIGN REPORT, VA101-457/6-2 (KPL, 2013B).
2. DEPTHS ADJUSTED TO METERS BELOW GROUND LEVEL FOR INCLINED GEOMECHANICAL DRILLHOLES.
3. HYDRAULIC CONDUCTIVITY TEST RESULTS ARE PRESENTED

NEW GOLD INC.	
BLACKWATER GOLD PROJECT	
HYDRAULIC CONDUCTIVITY WITH DEPTH (INFERRED HIGHER PERMEABILITY ZONE)	
<i>Knight Piésold</i> CONSULTING	P/A NO. VA101-457/A
	REF. NO. 9
FIGURE B1.2	
REV 0	

REV	DATE	ISSUED WITH REPORT DESCRIPTION	FTJ PREP'D	CAS CHK'D	KJB APP'D

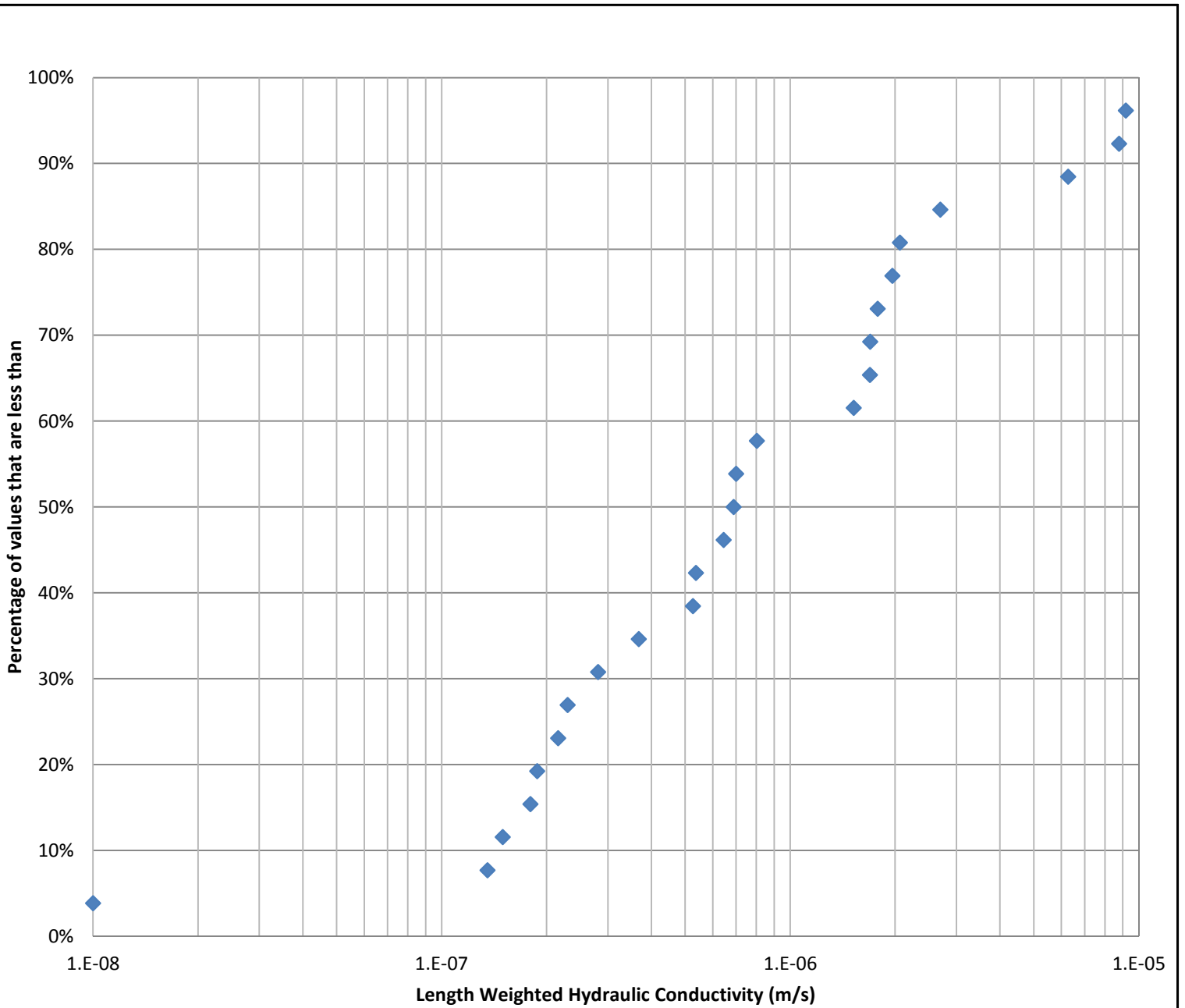


NOTES:

1. HYDRAULIC CONDUCTIVITY RESULTS FOR ALL GM HOLES FROM KPL FEASIBILITY OPEN PIT SLOPE DESIGN REPORT, VA101-457/6-2 (KPL, 2013B).
2. DEPTHS ADJUSTED TO METERS BELOW GROUND LEVEL FOR INCLINED GEOMECHANICAL DRILLHOLES.
3. HYDRAULIC CONDUCTIVITY TEST RESULTS ARE PRESENTED

NEW GOLD INC.	
BLACKWATER GOLD PROJECT	
HYDRAULIC CONDUCTIVITY WITH DEPTH (INFERRED LOWER PERMEABILITY ZONE)	
<i>Knight Piésold</i> CONSULTING	P/A NO. VA101-457/6
FIGURE B1.3	
REF. NO. 9	REV 0

0	ISSUED WITH REPORT	FTJ	CAS	KJB
INT-APP-B1.1	DESCRIPTION	PREP'D	CHK'D	APP'D



NOTES:

1. INCLUDES ALL HYDRAULIC CONDUCTIVITY TEST RESULTS REPORTED IN TABLE B1.1.
2. HYDRAULIC CONDUCTIVITY VALUES REPORTED AS LESS THAN OR GREATER THAN A VALUE ARE PLOTTED AS THAT VALUE.
3. VALUES REPRESENTING MONITORING WELLS ARE BASED ON RESPONSE TEST CONDUCTED IN SCREENED INTERVAL.

NEW GOLD INC.	
BLACKWATER GOLD PROJECT	
CUMULATIVE DISTRIBUTION OF LENGTH WEIGHTED AVERAGE HYDRAULIC CONDUCTIVITY VALUES	
<i>Knight Piésold</i> CONSULTING	P/A NO. VA101-457/6
	REF. NO. 9
FIGURE B1.4	
RE V 0	

0	29NOV'13	ISSUED WITH REPORT	FTJ	CAS	KJB
REV	DATE	DESCRIPTION	PREP'	CHK'	APP'

TABLE B1.1
NEW GOLD INC.
BLACKWATER GOLD PROJECT

GEOMECHANICAL DRILLHOLE AND OBSERVATION WELL HYDRAULIC CONDUCTIVITY TEST SUMMARY

Print Dec/05/13 7:44:21

Drillhole	Ground Elevation (m)	DIP (°)	Coordinates		Test #	Test interval		Test Length (m)	Hydraulic Conductivity (m/s)	Length Weighted Average Hydraulic Conductivity (m/s)	Geology within Test Zone
			Northing	Easting		From (m)	To (m)				
GM12-01	1,613	65	375,100	5,892,737	1	27	44	18	3.E-07	1.E-07	Volcaniclastic
					2	52	61	9	2.E-08		Volcaniclastic
					3	64	72	8	5.E-08		Volcaniclastic
					4	80	87	7	2.E-06		Andesite
					5	86	101	15	2.E-08		Andesite
					6	103	114	11	6.E-08		Andesite
					7	109	123	14	4.E-08		Andesite
					8	123	137	14	6.E-07		Volcaniclastic
					9	137	150	13	-		Volcaniclastic
					10	172	189	17	-		Andesite
					11	172	189	17	2.E-07		Andesite
					12	214	227	12	4.E-08		Andesite
					13	226	246	19	5.E-08		Andesite
					14	256	259	3	6.E-08		Andesite
					15	258	273	15	3.E-08		Andesite
					16	271	286	15	3.E-08		Andesite
					17	285	296	11	2.E-07		Volcaniclastic
					18	295	316	21	1.E-09		Volcaniclastic
					19	316	330	14	9.E-09		Volcaniclastic
					20	52	61	9	2.E-08		Volcaniclastic
					21	342	363	20	2.E-09		Volcaniclastic
GM12-02	1,621	65	375,499	5,892,762	1	15	28	14	8.E-07	7.E-07	Felsic Lapilli Tuff
					2	27	42	15	9.E-09		Felsic Lapilli Tuff
					3	41	55	15	2.E-08		Felsic Lapilli Tuff
					4	54	72	18	2.E-08		Felsic Lapilli Tuff
					5	70	87	17	5.E-07		Volcaniclastic
					6	87	103	16	2.E-06		Volcaniclastic
					7	116	130	14	3.E-07		Volcaniclastic
					8	130	144	14	1.E-09		Felsic Lapilli Tuff
					9	144	169	26	3.E-07		Volcaniclastic
					10	168	189	20	3.E-07		Volcaniclastic
					11	187	202	15	8.E-07		Volcaniclastic
					12	218	232	14	5.E-07		Volcaniclastic
					13	231	254	23	2.E-07		Volcaniclastic
					14	253	272	19	1.E-06		Volcaniclastic
					15	271	293	22	5.E-07		Volcaniclastic
					16	293	316	23	3.E-10		Volcaniclastic
					17	315	341	26	4.E-06		Andesite
					18	340	363	22	6.E-08		Andesite
GM12-03	1,596	65	375,100	5,892,800	1	54	69	15	1.E-07	1.E-07	Volcaniclastic
					2	69	96	27	-		Volcaniclastic
					3	78	104	26	1.E-07		Volcaniclastic
					4	181	202	21	2.E-07		Andesite
					5	210	232	22	4.E-07		Andesite
					6	231	253	22	8.E-08		Andesite
					7	255	273	18	4.E-07		Andesite
					8	274	300	26	6.E-08		Andesite
					9	303	322	19	8.E-08		Andesite
					10	320	341	21	2.E-08		Andesite
GM12-04	1,617	65	376,000	5,892,600	1	19	31	12	2.E-07	4.E-07	Andesite
					2	29	53	23	3.E-08		Andesite
					3	56	72	15	6.E-07		Andesite
					4	77	91	14	3.E-07		Andesite
					5	85	110	24	4.E-07		Andesite
					6	108	131	23	5.E-07		Volcaniclastic
GM12-05	1,592	65	375,850	5,892,750	1	80	99	19	9.E-07	3.E-07	Felsic Tuff
					2	100	118	18	1.E-07		Felsic Tuff
					3	116	142	26	6.E-09		Felsic Tuff
					4	144	171	27	5.E-09		Felsic Tuff
					5	171	194	23	3.E-07		Felsic Tuff
					6	193	216	23	8.E-07		Felsic Tuff
					7	214	240	26	5.E-07		Andesite
					8	239	261	22	5.E-07		Andesite
					9	260	297	37	8.E-08		Andesite
					10	296	316	21	3.E-08		Andesite
					11	315	341	26	9.E-09		Andesite
					12	339	363	23	4.E-07		Andesite
GM12-06	1,545	65	5,893,088	375,913	1	34	48	14	2.E-07	2.E-06	Felsic Lapilli Tuff
					2	47	67	19	1.E-07		Felsic Lapilli Tuff
					3	68	91	23	3.E-07		Felsic Tuff
					4	90	116	26	4.E-06		Andesite
					5	114	143	29	3.E-06		Andesite
					6	144	162	18	3.E-06		Andesite
					7	162	179	18	3.E-06		Andesite
					8	179	198	19	1.E-06		Andesite
					9	197	218	21	2.E-06		Andesite
					10	217	237	19	2.E-06		Andesite
					11	238	256	18	2.E-06		Andesite
					12	255	275	19	1.E-06		Andesite
					13	274	294	19	2.E-06		Andesite
					14	293	313	19	1.E-06		Andesite
					15	313	332	19	1.E-06		Andesite
					16	332	351	19	4.E-07		Andesite
					17	351	363	12	-		Andesite

TABLE B1.1

NEW GOLD INC.
BLACKWATER GOLD PROJECT

GEOMECHANICAL DRILLHOLE AND OBSERVATION WELL HYDRAULIC CONDUCTIVITY TEST SUMMARY

Print Dec/05/13 7:44:21

Drillhole	Ground Elevation (m)	DIP (°)	Coordinates		Test #	Test interval		Test Length (m)	Hydraulic Conductivity (m/s)	Length Weighted Average Hydraulic Conductivity (m/s)	Geology within Test Zone
			Northing	Easting		From (m)	To (m)				
GM12-07	1,547	65	5,893,199	375,700	1	27	46	19	1.E-06	2.E-06	Volcaniclastic
					2	46	65	19	1.E-06		Volcaniclastic
					3	65	84	19	8.E-07		Volcaniclastic
					4	84	104	20	4.E-07		Volcaniclastic
					5	103	122	19	1.E-07		Andesite
					6	119	141	22	2.E-07		Andesite
					7	141	160	19	2.E-07		Andesite
					8	160	185	25	4.E-08		Andesite
					9	185	204	19	2.E-06		Andesite
					10	204	228	25	2.E-06		Andesite
					11	228	247	19	4.E-06		Andesite
					12	245	269	25	4.E-06		Andesite
					13	269	288	19	3.E-06		Andesite
					14	288	307	19	3.E-06		Andesite
					15	307	326	19	4.E-06		Andesite
					16	326	345	19	3.E-07		Andesite
					17	345	363	18	4.E-06		Andesite
GM12-08	1,545	65	5,893,324	375,391	1	110	126	16	-	2.E-06	Volcaniclastic
					2	126	144	18	2.E-06		Volcaniclastic
					3	146	164	18	6.E-07		Volcaniclastic
					4	166	186	21	6.E-06		Felsic Lapilli Tuff
					5	186	204	18	8.E-07		Felsic Lapilli Tuff
					6	206	224	18	2.E-07		Volcaniclastic
					7	224	242	18	1.E-06		Volcaniclastic
					8	242	261	19	2.E-06		Volcaniclastic
					9	264	281	18	1.E-06		Volcaniclastic
					10	283	300	18	9.E-08		Volcaniclastic
					11	302	320	19	-		Andesite
					12	321	344	23	9.E-08		Andesite
					13	345	363	18	-		Andesite
GM12-09	1,510	65	5,893,551	375,312	1	83	100	16	9.E-06	2.E-06	Volcaniclastic/Felsic Lapilli Tuff
					2	99	117	18	2.E-06		Felsic Lapilli Tuff
					3	119	137	18	9.E-07		Andesite
					4	130	156	26	2.E-06		Andesite
					5	155	175	21	8.E-07		Andesite
					6	177	194	18	8.E-07		Andesite
					7	196	213	18	4.E-06		Andesite
					8	215	232	18	1.E-06		Andesite
					9	231	252	21	5.E-07		Andesite
					10	250	271	21	7.E-07		Andesite
					11	269	290	21	3.E-06		Andesite
					12	291	311	21	3.E-06		Andesite
					13	310	333	23	1.E-06		Andesite
					14	334	352	18	1.E-06		Andesite
					15	350	363	12	6.E-07		Andesite
GM12-10	1,546	65	5,893,298	375,126	1	13	31	18	6.E-08	9.E-06	Volcaniclastic
					2	32	50	18	4.E-07		Volcaniclastic
					3	51	69	18	2.E-06		Volcaniclastic
					4	71	88	18	1.E-06		Volcaniclastic
					5	84	107	23	4.E-07		Volcaniclastic
					6	106	126	21	6.E-07		Volcaniclastic
					7	125	144	19	1.E-06		Volcaniclastic
					8	134	164	30	3.E-07		Volcaniclastic
					9	163	182	19	9.E-06		Volcaniclastic
					10	182	203	21	6.E-06		Volcaniclastic
					11	204	222	18	5.E-05		Volcaniclastic
					12	223	241	18	1.E-05		Volcaniclastic
					13	242	260	18	6.E-05		Volcaniclastic
					14	258	280	22	1.E-05		Volcaniclastic
					15	280	299	19	1.E-06		Volcaniclastic
					16	299	318	19	5.E-06		Volcaniclastic
					17	318	337	19	6.E-06		Volcaniclastic
					18	337	363	26	1.E-07		Volcaniclastic
GM12-11	1,587	65	5,892,917	375,032	1	41	65	24	3.E-07	8.E-07	Volcaniclastic
					2	65	83	18	5.E-06		Volcaniclastic
					3	87	105	18	3.E-07		Volcaniclastic
					4	106	126	21	-		Volcaniclastic
					5	106	143	37	2.E-07		Volcaniclastic
					6	137	155	18	8.E-08		Volcaniclastic
					7	155	175	21	2.E-06		Volcaniclastic
					8	174	194	21	9.E-08		Volcaniclastic
					9	196	213	18	6.E-08		Volcaniclastic
					10	212	232	21	6.E-08		Volcaniclastic
					11	234	252	18	3.E-07		Volcaniclastic/Andesite
					12	253	271	18	5.E-08		Volcaniclastic
					13	269	290	21	5.E-07		Volcaniclastic
					14	289	309	19	2.E-06		Volcaniclastic
					15	307	328	21	1.E-06		Andesite
					16	329	347	18	2.E-06		Volcaniclastic
					17	342	363	21	1.E-06		Volcaniclastic
GM12-12	1,506	65	5,893,592	375,132	-	artesian conditions		-	-	-	

TABLE B1.1
NEW GOLD INC.
BLACKWATER GOLD PROJECT

GEOMECHANICAL DRILLHOLE AND OBSERVATION WELL HYDRAULIC CONDUCTIVITY TEST SUMMARY

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Drillhole	Ground Elevation (m)	DIP (°)	Coordinates		Test #	Test interval		Test Length (m)	Hydraulic Conductivity (m/s)	Length Weighted Average Hydraulic Conductivity (m/s)	Geology within Test Zone
			Northing	Easting		From (m)	To (m)				
GM12-13	1,516	65	5,893,491	375,558	1	19	38	19	7.E-07	2.E-06	Volcaniclastic
					2	38	57	19	1.E-06		Volcaniclastic
					3	57	76	19	6.E-07		Volcaniclastic
					4	79	101	22	3.E-06		Andesite
					5	103	122	19	2.E-06		Andesite
					6	119	141	22	2.E-06		Andesite
					7	141	160	19	2.E-06		Andesite
					8	160	179	19	3.E-06		Andesite
					9	179	198	19	1.E-06		Andesite
					10	198	218	19	3.E-06		Andesite
					11	217	239	22	1.E-06		Andesite
					12	239	258	19	3.E-06		Andesite
					13	258	277	19	4.E-06		Andesite
					14	277	296	19	4.E-06		Andesite
					15	296	315	19	2.E-06		Andesite
					16	315	334	19	2.E-06		Andesite Breccia
					17	334	353	19	2.E-06		Andesite Breccia
MW12-10D	1,665	90	5,899,689	378,338	1	30	38	8	<1E-08 ³		Andesite
MW12-10S	1,665	90	5,899,689	378,338	1	3	6	3	-		Glacial Till
MW12-11D	1,680	90	5,899,546	376,378	1	40	43	3	7.E-07		Andesite
MW12-11S	1,680	90	5,899,546	376,378	1	31	34	3	4.E-05		Glacial Till/ Completely Weathered Bedrock
PH13-1-1 ⁴	1,594	90	5,893,009	375,169	1	39	64	25	-		Felsic Lapilli Tuff
					2	64	103	39	-		Felsic Lapilli Tuff
PH13-1-2	1,546	90	5,893,288	375,174	1	46	110	64	4.E-06	4.E-06	Felsic Tuff
					2	110	180	70	7.E-06		Volcaniclastic
					3	184	275	91	2.E-06		Volcaniclastic
					4	275	330	55	-		Volcaniclastic
					5	330	412	82	5.E-06		Volcaniclastic
					6	412	485	73	4.E-06		Volcaniclastic
PH13-1-3	1,564	90	5,893,188	375,124	1	67	139	72	3.E-06	4.E-06	Volcaniclastic
					2	139	198	59	1.E-05		Volcaniclastic
					3	198	285	87	-		Volcaniclastic
					4	284	349	65	2E-05		Volcaniclastic
					5	349	415	66	9.E-06		Volcaniclastic
					6	415	485	70	5.E-06		Felsic Tuff
PH12-2-1	1,565	90	5,893,112	375,634	1	42	72	30	3.E-07	5.E-07	Andesite
					2	68	92	24	3.E-07		Felsic Tuff
					3	92	138	46	2.E-07		Felsic Tuff
					4	138	187	49	6.E-07		Felsic Tuff
					5	187	266	79	8.E-07		Andesite
PH13-2-2	1,568	90	5,893,062	375,684	1	65	104	39	2.E-06	5.E-07	Felsic Tuff
					2	104	165	61	3.E-08		Felsic Tuff
					3	165	221	56	4.E-08		Felsic Tuff
					4	221	320	99	1.E-06		Felsic Tuff
					5	320	362	42	2.E-07		Felsic Tuff
					6	361	430	69	1.E-07		Felsic Tuff
PH13-2-3	1,582	90	5,893,012	375,684	1	70	116	46	9.E-07	1.E-06	Felsic Tuff
					2	113	178	65	3.E-06		Felsic Tuff
					3	174	238	64	1.E-06		Felsic Tuff
					4	235	296	61	-		Felsic Tuff
					5	296	366	70	9.E-07		Felsic Tuff
					6	366	433	67	5.E-07		Andesite
PH12-3-1	1,649	90	5,892,341	375,855	1	54	95	41	2.E-07	6.E-07	Andesite
					2	95	126	31	5.E-07		Volcaniclastic
					3	125	156	31	7.E-07		Volcaniclastic
					4	154	187	33	1.E-06		Volcaniclastic
					5	186	217	31	5.E-07		Volcaniclastic
					6	216	248	32	7.E-07		Volcaniclastic
					7	246	278	32	1.E-06		Volcaniclastic
PH12-3-2	1,641	90	5,892,390	375,905	1	59	120	61	2.E-07	2.E-07	Volcaniclastic
					2	118	194	76	1.E-07		Volcaniclastic
					3	193	254	61	7.E-08		Volcaniclastic
					4	254	302	62	4.E-07		Andesite
PH12-3-3	1,640	90	5,892,441	375,905	1	57	84	27	5.E-08	2.E-07	Andesite
					2	83	115	32	5.E-08		Volcaniclastic
					3	113	147	34	8.E-08		Volcaniclastic
					4	142	177	35	2.E-07		Volcaniclastic
					5	176	208	32	3.E-07		Andesite
					6	206	244	38	3.E-07		Andesite
					7	243	278	35	2.E-07		Andesite
					8	275	299	24	3.E-07		Volcaniclastic
PH12-4-1	1,637	90	5,892,543	375,138	1	14	43	29	6.E-07	2.E-06	Felsic Tuff
					2	41	73	32	1.E-06		Andesite
					3	71	109	38	7.E-07		Andesite
					4	106	157	51	2.E-07		Andesite
					5	157	189	32	5.E-07		Volcaniclastic
					6	189	250	61	8.E-06		Andesite
					7	247	316	69	2.E-07		Andesite
					8	314	349	35	5.E-07		Andesite
PH12-4-2	1,631	90	5,892,593	375,087	1	19	77	58	-	2.E-07	Andesite
					2	67	129	62	6.E-07		Andesite
					3	129	182	53	4.E-08		Andesite
					4	179	228	49	2.E-07		Felsic Tuff
					5	228	295	67	6.E-08		Felsic Tuff
PH12-4-3	1,622	90	5,892,643	375,087	1	40	86	46	3.E-07	2.E-07	Volcaniclastic
					2	86	162	76	2.E-07		Andesite
					3	162	229	67	2.E-07		Andesite
					4	229	290	61	2.E-07		Andesite
					5	289	350	61	2.E-07		Andesite

Notes:

- 1: - REPRESENTS THAT A HYDRAULIC CONDUCTIVITY VALUE COULD NOT BE ACCURATELY CALCULATED.
- 2: DEPTHS HAVE BEEN COMPENSATED FOR ANGLED DRILLHOLES (ALL DEPTHS ARE METERS BELOW GROUND).
- 3: HYDRAULIC CONDUCTIVITY VALUE WAS ESTIMATED BASED ON SLOW RECOVERY OF WATER LEVEL FOLLOWING WELL DEVELOPMENT FOR MW12-10D.
- 4: THE WATER TABLE IN PH13-1-1 WAS DEEPER THAN THE DEPTH OF THE AIRLIFTING EQUIPMENT AND HYDRAULIC TESTS COULD NOT BE COMPLETED SUCCESSFULLY.

0	NOV29'13	ISSUED WITH REPORT	FTJ	CAS	KJB
REV	DATE	DESCRIPTION	PREPD	CHKD	APPD

APPENDIX B2
OBSERVATION WELLS HYDRAULIC ANALYSIS
(Pages B2-1 to B2-66)

**NEW GOLD INC.
BLACKWATER GOLD PROJECT**

**HYDRAULIC CONDUCTIVITY CALCULATION
USING HVORSLEV (1951) METHOD**

Print 11/21/13 15:49

Project No. VA101-457/6
Field Technician LEP
Analyst DMW

Observation Well **PH13-1-2**
Test 1

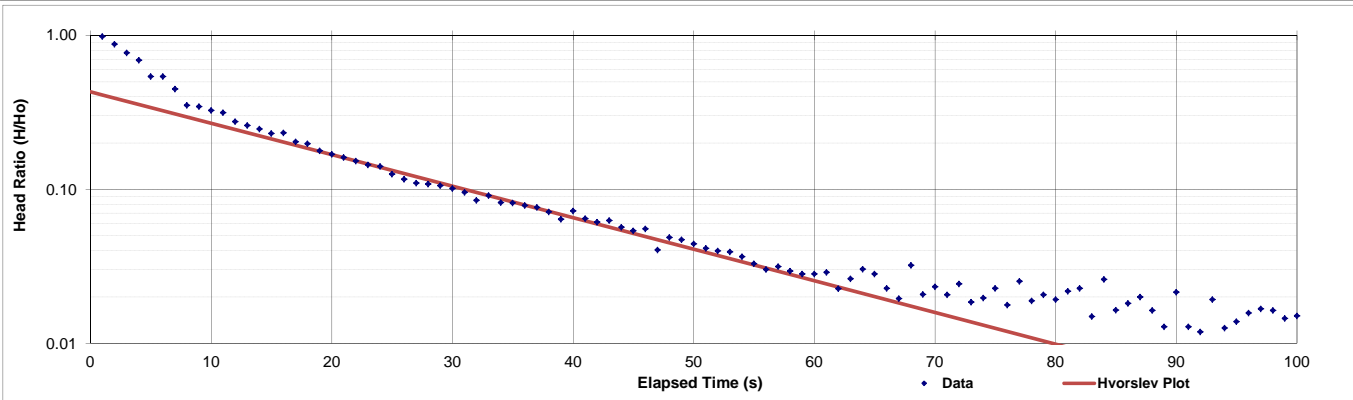
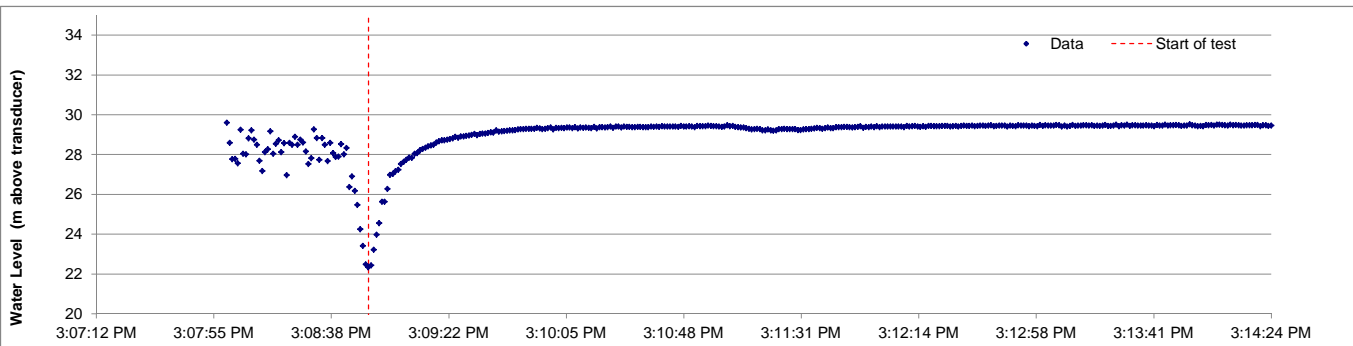
Monitoring Instrument Type Transducer
Slug Dimensions and Type Airlift Water Level Depression
Test Date 23-Jan-13

Drill-hole diameter, D 0.096 m
Effective diameter of drillrods, d_e 0.078 m
Top of test zone 46.3 m
Bottom of test zone 110.3 m
Test Length, L 64.0 m

Slug Injected, Time = 0 3:08:52 PM
Initial water level 29.5 m above transducer
Water level after slug 22.3 m above transducer
Change In Water Level, H_0 -7.2 m

Transmissivity, T $3E-04$ m²/s
Hydraulic Conductivity, K $4E-06$ m/s

Intercept 0.4



TEST COMMENTS:

Static water level was estimated from the post-test recovered water level.
Discharge rate at the end of the airlift test was 0.23 l/s.

M:\1\01\00457\06\A\Data\Task 206 - Phase 5 - Open Hydrogeological Site Investigation\Observation wells\Hydraulic Testing\Analysis\Reviewed\PW1 location\PH13-1-2_Hvorslev\PH13-1-2 test 1.xlsx\Hvorslev

REV	DATE	ISSUED WITH REPORT DESCRIPTION	FTJ PREP'D	CAS CHK'D	KJB APP'D
0	OCT-13	ISSUED WITH REPORT			

**NEW GOLD INC.
BLACKWATER GOLD PROJECT**

**HYDRAULIC CONDUCTIVITY CALCULATION
USING HVORSLEV (1951) METHOD**

Print 11/21/13 15:54

Project No. VA101-457/6
Field Technician LEP
Analyst DMW

Observation Well **PH13-1-2**
Test 2

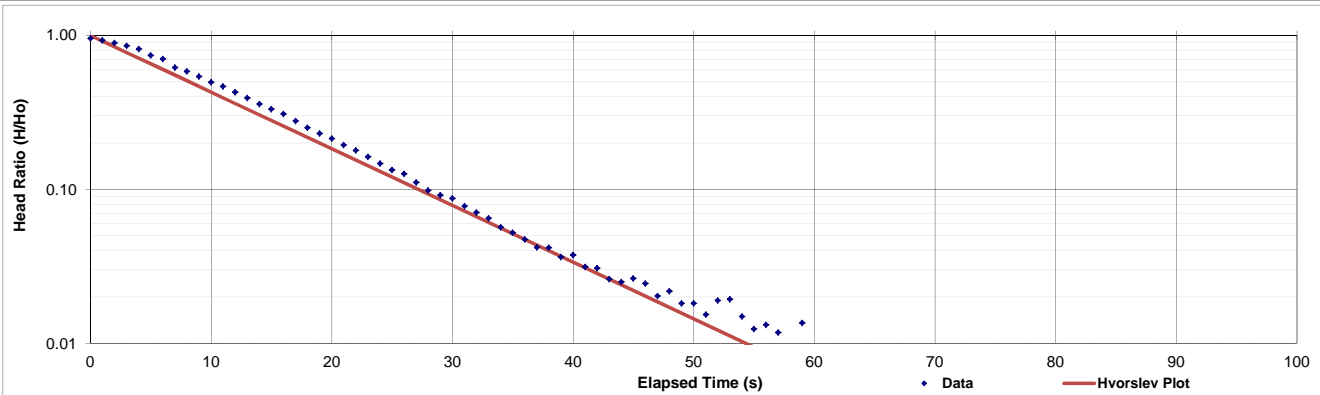
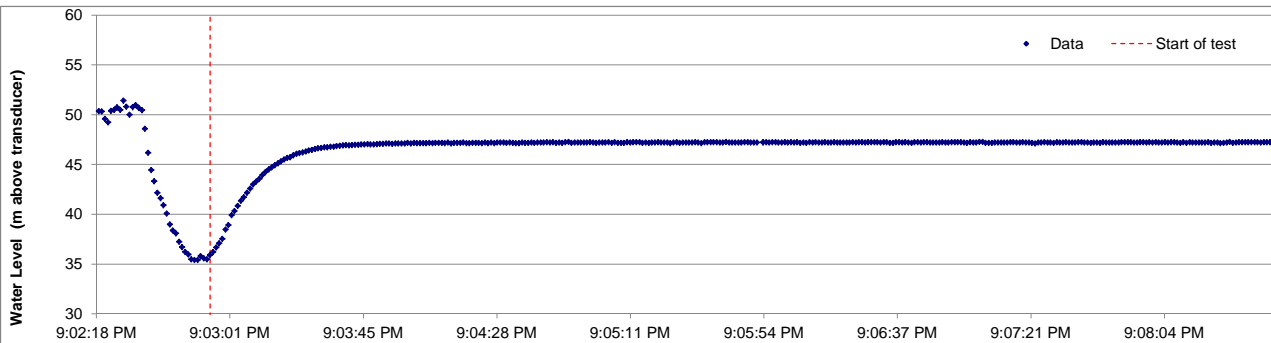
Monitoring Instrument Type Transducer
Slug Dimensions and Type Airlift Water Level Depression
Test Date 24-Jan-13

Drill-hole diameter, D 0.096 m
Effective diameter of drillrods, d_e 0.078 m
Top of test zone 110.3 m
Bottom of test zone 180.4 m
Test Length, L 70.1 m

Slug Injected, Time = 0 9:02:55 PM
Initial water level 47.2 m above transducer
Water level after slug 35.4 m above transducer
Change In Water Level, H_0 -11.8 m

Transmissivity, T $5E-04$ m²/s
Hydraulic Conductivity, K $7E-06$ m/s

Intercept 1.0



TEST COMMENTS:

Static water level was estimated from the post-test recovered water level.
Discharge rate at the end of the airlift test was 0.05 l/s.

M:\1\01\00457\06\A\Data\Task 206 - Phase 5 - Open Hydrogeological Site Investigation\Observation wells\Hydraulic Testing\Analysis\Reviewed\PW1 location\PH13-1-2_Hvorslev\PH13-1-2 test 2.xlsx\PH13-1-2#2

REV	DATE	ISSUED WITH REPORT DESCRIPTION	FTJ PREP'D	CAS CHK'D	KJB APP'D
0	OCT-13	ISSUED WITH REPORT			

**NEW GOLD INC.
BLACKWATER GOLD PROJECT**

**HYDRAULIC CONDUCTIVITY CALCULATION
USING HVORSLEV (1951) METHOD**

Print 12/02/13 22:09

Project No. VA101-457/6
Field Technician LEP
Analyst DMW

Observation Well **PH13-1-2**
Test 3

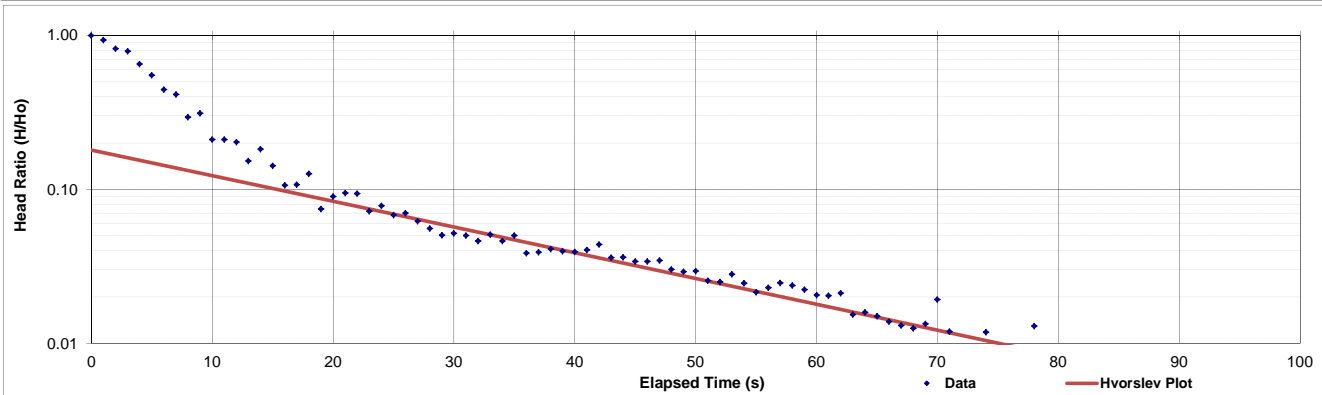
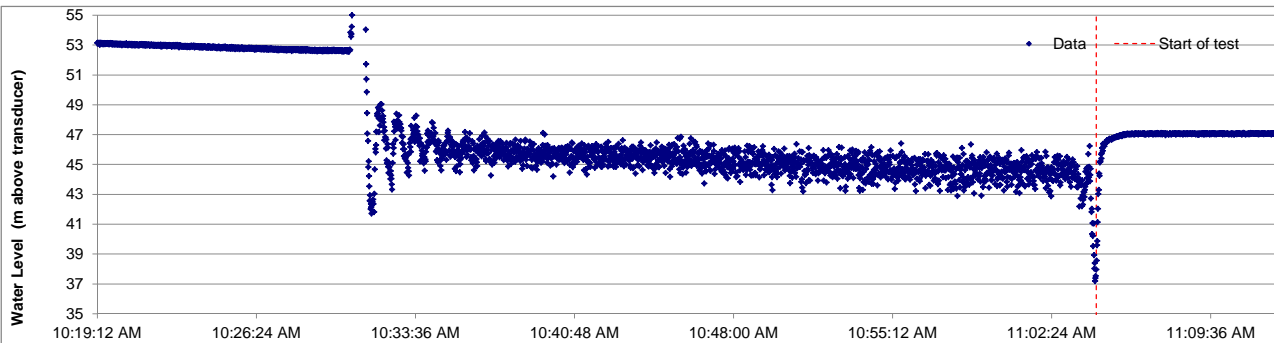
Monitoring Instrument Type Transducer
Slug Dimensions and Type Airlift Water Level Depression
Test Date 27-Jan-13

Drill-hole diameter, D 0.096 m
Effective diameter of drillrods, d_e 0.078 m
Top of test zone 183.5 m
Bottom of test zone 274.9 m
Test Length, L 91.4 m

Slug Injected, Time = 0 11:04:25 AM
Initial water level 47.1 m above transducer
Water level after slug 38.0 m above transducer
Change In Water Level, H_0 -9.1 m

Transmissivity, T $2E-04$ m²/s
Hydraulic Conductivity, K $2E-06$ m/s

Intercept 0.2



TEST COMMENTS:

Static water level was estimated from the post-test recovered water level.
Discharge rate at the end of the airlift test was 0.7 l/s.

C:\Users\cstarzyk\Documents\Blackwater\Pit Inflows Report\Nov 29\B - Hydraulic Testing\Obs Wells Analysis\Analysis\Reviewed\PW1 location\PH13-1-2_Hvorslev\PH13-1-2 test 3.xlsx\Hvorslev

REV	DATE	DESCRIPTION	PREP'D	CHK'D	APP'D
0	OCT-13	ISSUED WITH REPORT	FTJ	CAS	KJB

**NEW GOLD INC.
BLACKWATER GOLD PROJECT**

**HYDRAULIC CONDUCTIVITY CALCULATION
USING HVORSLEV (1951) METHOD**

Print 12/04/13 17:07

Project No. VA101-457/6
Field Technician LEP
Analyst DMW

Observation Well **PH13-1-2**
Test 4

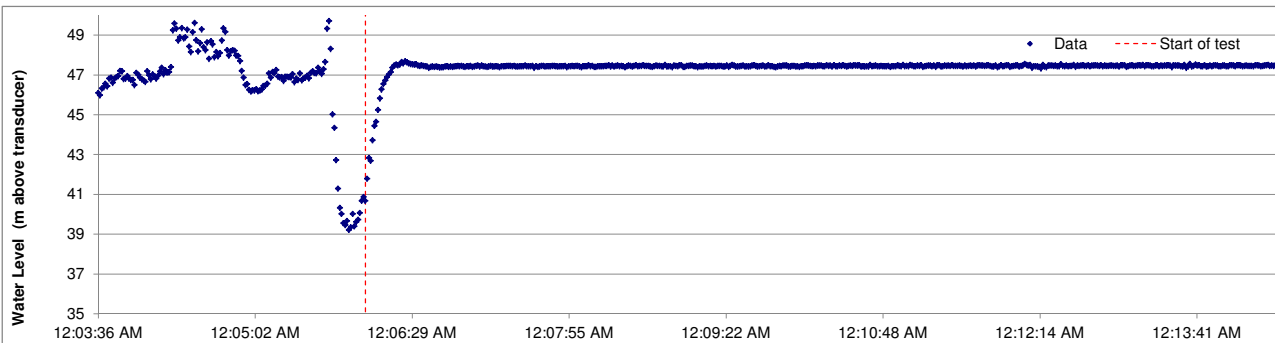
Monitoring Instrument Type Transducer
Slug Dimensions and Type Airlift Water Level Depression
Test Date 28-Jan-13

Drill-hole diameter, D 0.096 m
Effective diameter of drillrods, d_e 0.078 m
Top of test zone 274.9 m
Bottom of test zone 329.8 m
Test Length, L 54.9 m

Slug Injected, Time = 0 12:06:03 AM
Initial water level 47.5 m above transducer
Water level after slug 39.6 m above transducer
Change In Water Level, H_0 -7.8 m

Transmissivity, T - m^2/s
Hydraulic Conductivity, K - m/s

Intercept -



TEST COMMENTS:

Discharge rate at the end of the airlift test was 0.006 l/s.
Insufficient drawdown was achieved in order to estimate a hydraulic conductivity value.

C:\Users\slabrash\Desktop\Rev\[PH13-1-2 test 4.xlsx]Hvorslev

REV	DATE	DESCRIPTION	PREP'D	CHK'D	APP'D
0	NOV12	ISSUED WITH REPORT 101-457/6	FTJ	CAS	KJB

**NEW GOLD INC.
BLACKWATER GOLD PROJECT**

**HYDRAULIC CONDUCTIVITY CALCULATION
USING HVORSLEV (1951) METHOD**

Print 11/21/13 17:57

Project No. VA101-457/6
Field Technician MAS
Analyst DMW

Observation Well **PH13-1-2**
Test 5

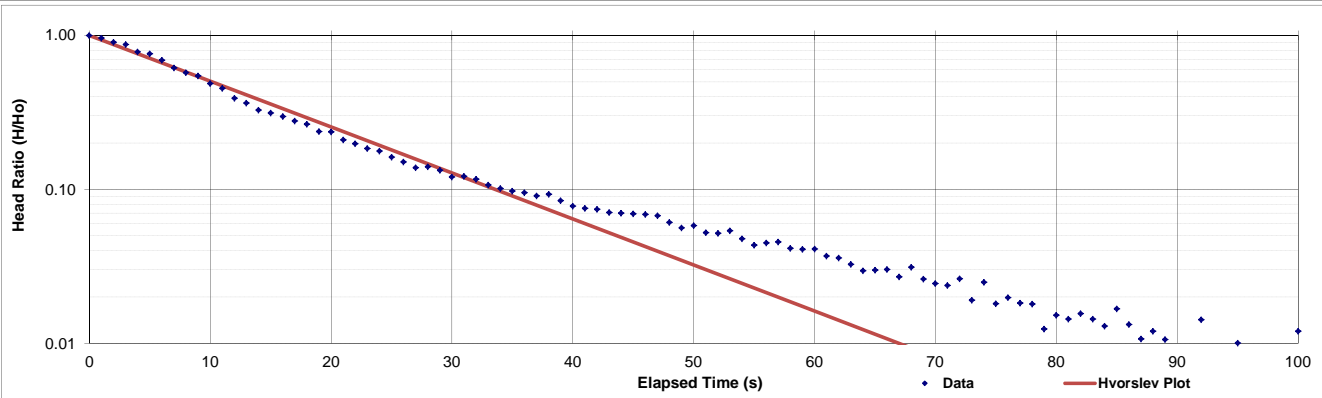
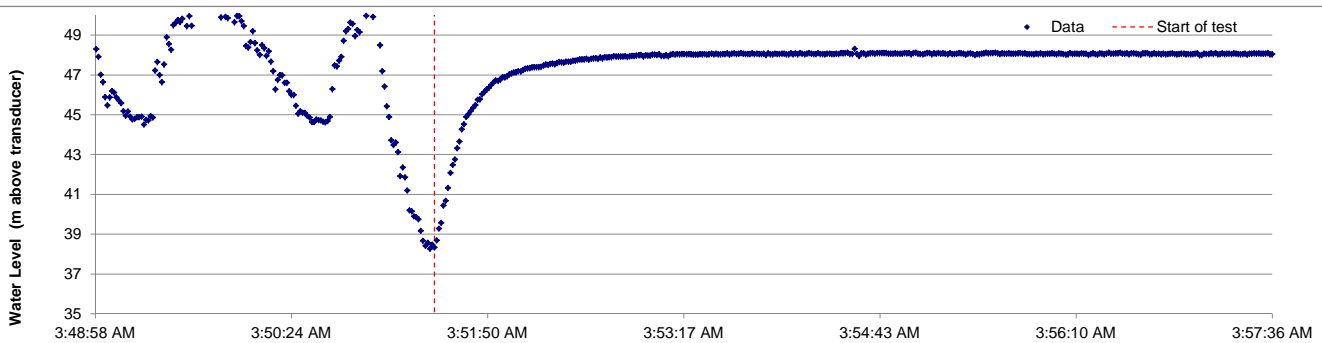
Monitoring Instrument Type Transducer
Slug Dimensions and Type Airlift Water Level Depression
Test Date 02-Feb-13

Drill-hole diameter, D 0.096 m
Effective diameter of drillrods, d_e 0.078 m
Top of test zone 329.8 m
Bottom of test zone 412.1 m
Test Length, L 82.3 m

Slug Injected, Time = 0 3:51:27 AM
Initial water level 48.1 m above transducer
Water level after slug 38.3 m above transducer
Change In Water Level, H_0 -9.7 m

Transmissivity, T $4E-04$ m²/s
Hydraulic Conductivity, K $5E-06$ m/s

Intercept 1.0



TEST COMMENTS:

Static water level was estimated from the post-test recovered water level.
Discharge rate at the end of the airlift test was 0.05 l/s.

M:\1\01\00457\06\A\Data\Task 206 - Phase 5 - Open Hydrogeological Site Investigation\Observation wells\Hydraulic Testing\Analysis\Reviewed\PW1 location\PH13-1-2_Hvorslev\PH13-1-2 test 5.xlsx\Hvorslev

0	15 OCT 13	ISSUED WITH REPORT	FTJ	CAS	KJB
REV	DATE	DESCRIPTION	PREP'D	CHK'D	APP'D

**NEW GOLD INC.
BLACKWATER GOLD PROJECT**

**HYDRAULIC CONDUCTIVITY CALCULATION
USING HVORSLEV (1951) METHOD**

Print 11/21/13 18:05

Project No. VA101-457/6
Field Technician MAS & LEP
Analyst DMW

Observation Well **PH13-1-2**
Test 6

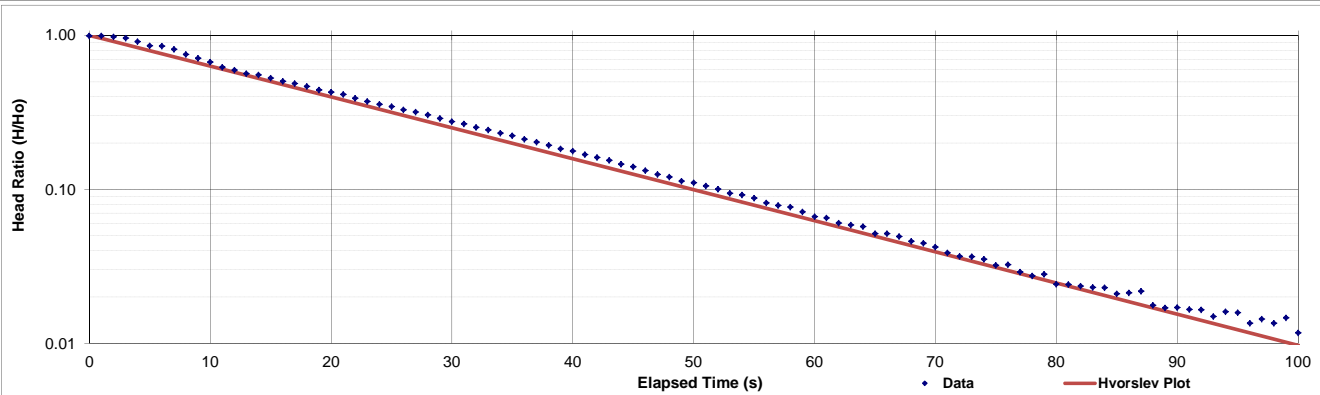
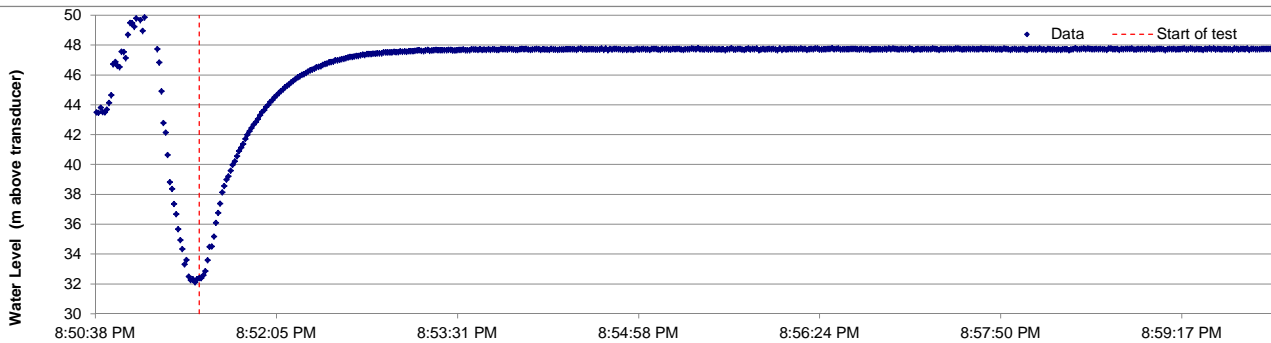
Monitoring Instrument Type Transducer
Slug Dimensions and Type Airlift Water Level Depression
Test Date 04-Feb-13

Drill-hole diameter, D 0.096 m
Effective diameter of drillrods, d_e 0.078 m
Top of test zone 412.1 m
Bottom of test zone 485.2 m
Test Length, L 73.2 m

Slug Injected, Time = 0 8:51:28 PM
Initial water level 47.8 m above transducer
Water level after slug 32.3 m above transducer
Change In Water Level, H_0 -15.5 m

Transmissivity, T $3E-04$ m²/s
Hydraulic Conductivity, K $4E-06$ m/s

Intercept 1.0



TEST COMMENTS:

Static water level was estimated from the post-test recovered water level.
Discharge rate at the end of the airlift test was 0.04 l/s.

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0	OCT-12	ISSUED WITH REPORT	MAS	CAS	KJB
REV	DATE	DESCRIPTION	PREP'D	CHK'D	APP'D

**NEW GOLD INC.
BLACKWATER GOLD PROJECT**

**HYDRAULIC CONDUCTIVITY CALCULATION
USING HVORSLEV (1951) METHOD**

Print 11/21/13 18:10

Project No. VA101-457/6
Field Technician LEP
Analyst DMW

Observation Well **PH13-1-3**
Test 1

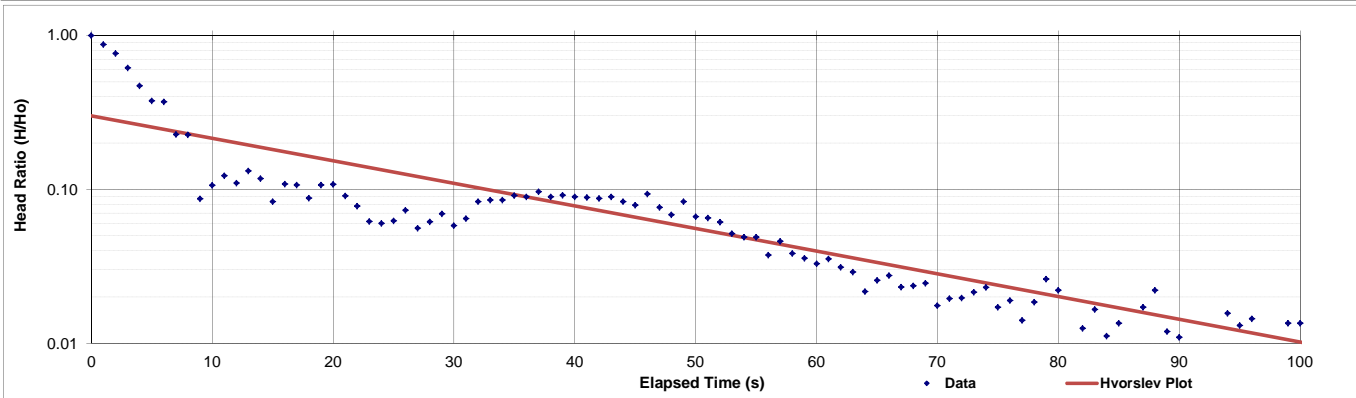
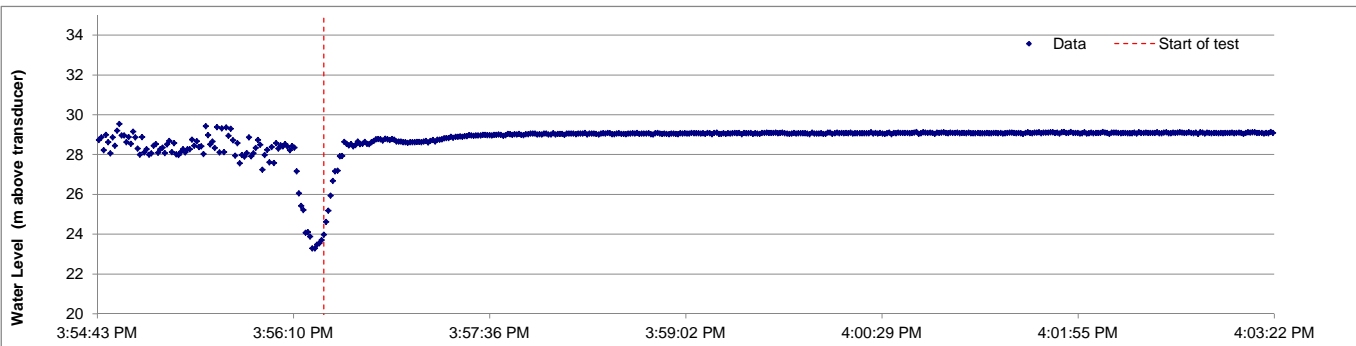
Monitoring Instrument Type Transducer
Slug Dimensions and Type Airlift Water Level Depression
Test Date 27-Jan-13

Drill-hole diameter, D 0.096 m
Effective diameter of drillrods, d_e 0.078 m
Top of test zone 67.4 m
Bottom of test zone 139.0 m
Test Length, L 71.6 m

Slug Injected, Time = 0 3:56:23 PM
Initial water level 29.1 m above transducer
Water level after slug 24.0 m above transducer
Change In Water Level, H_0 -5.1 m

Transmissivity, T $2E-04$ m²/s
Hydraulic Conductivity, K $3E-06$ m/s

Intercept 0.3



TEST COMMENTS:

Static water level was estimated from the post-test recovered water level.
Discharge rate at the end of the airlift test was 0.13 l/s.

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0	21OCT13	ISSUED WITH REPORT	FTJ	CAS	KJB
REV	DATE	DESCRIPTION	PREP'D	CHK'D	APP'D

**NEW GOLD INC.
BLACKWATER GOLD PROJECT**

**HYDRAULIC CONDUCTIVITY CALCULATION
USING HVORSLEV (1951) METHOD**

Print 11/21/13 18:12

Project No. VA101-457/6
Field Technician LEP
Analyst DMW

Observation Well **PH13-1-3**
Test 2

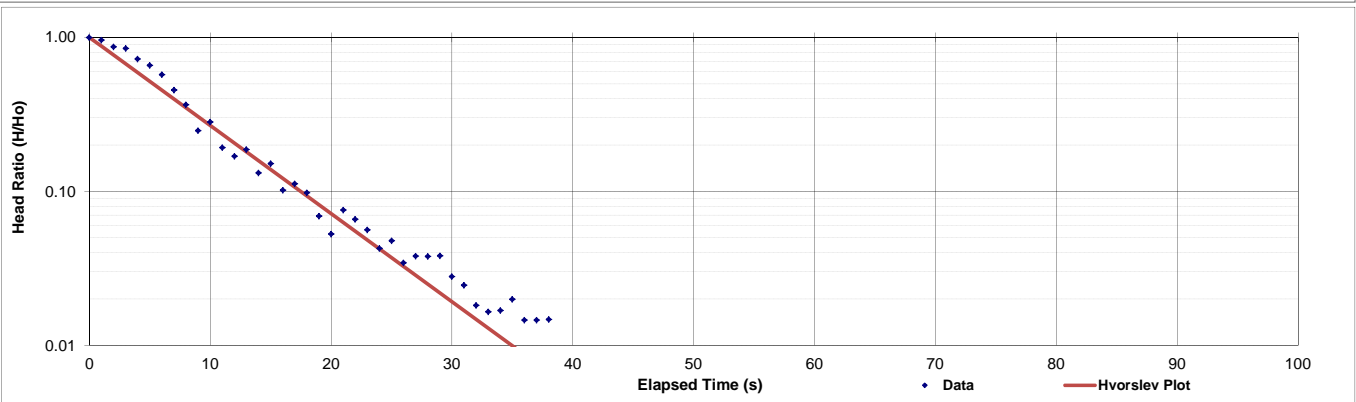
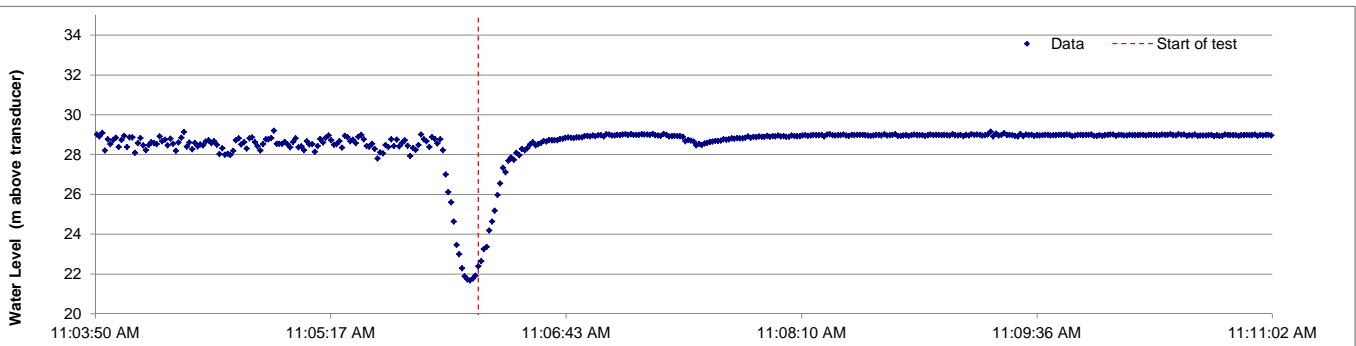
Monitoring Instrument Type Transducer
Slug Dimensions and Type Airlift Water Level Depression
Test Date 28-Jan-13

Drill-hole diameter, D 0.096 m
Effective diameter of drillrods, d_e 0.078 m
Top of test zone 139.0 m
Bottom of test zone 198.4 m
Test Length, L 59.4 m

Slug Injected, Time = 0 11:06:11 AM
Initial water level 29.0 m above transducer
Water level after slug 22.4 m above transducer
Change In Water Level, H_0 -6.6 m

Transmissivity, T $7E-04$ m²/s
Hydraulic Conductivity, K $1E-05$ m/s

Intercept 1.0



TEST COMMENTS:

Static water level estimated from post-test water level.
The discharge rate remained relatively constant at 1.6 L/s during the airlift test.

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0	21OCT13	ISSUED WITH REPORT	FTJ	CAS	KJB
REV	DATE	DESCRIPTION	PREP'D	CHK'D	APP'D

**NEW GOLD INC.
BLACKWATER GOLD PROJECT
OPEN PIT - HYDROGEOLOGICAL SITE INVESTIGATION (PHASE 5)
HYDRAULIC CONDUCTIVITY CALCULATION
USING HVORSLEV (1951) METHOD**

Print 11/21/13 18:20

Project No. VA101-457/4
Field Technician LEP
Analyst DMW

Observation Well PH13-1-3
Test 3

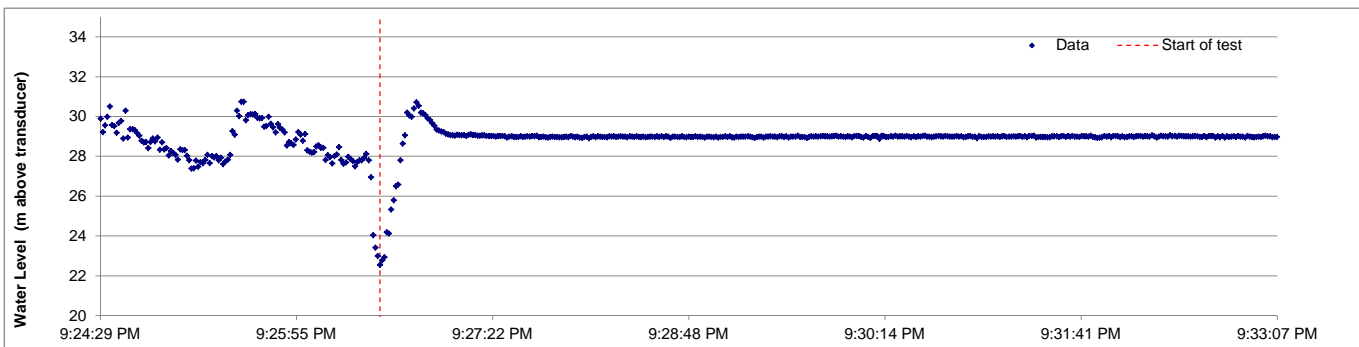
Monitoring Instrument Type Transducer
Slug Dimensions and Type Airlift Water Level Depression
Test Date 29-Jan-13

Drill-hole diameter, D 0.096 m
Effective diameter of drillrods, d_e 0.078 m
Top of test zone 198.4 m
Bottom of test zone 285.3 m
Test Length, L 86.9 m

Slug Injected, Time = 0 9:26:32 PM
Initial water level 29.0 m above transducer
Water level after slug 22.5 m above transducer
Change In Water Level, H_0 -6.4 m

Transmissivity, T m^2/s
Hydraulic Conductivity, K m/s

Intercept 1.0



TEST COMMENTS:

Turbulence from pump shut down affected test data. K value can not be determined.
Discharge rate at the end of the airlift test was 0.14 l/s.

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0	8NOV12	ISSUED WITH REPORT 101-457/8	MAS	CAS	KJB
REV	DATE	DESCRIPTION	PREP'D	CHK'D	APP'D

**NEW GOLD INC.
BLACKWATER GOLD PROJECT**

**HYDRAULIC CONDUCTIVITY CALCULATION
USING VAN DER KAMP (1976) METHOD**

Print Dec/04/13 17:08:38

Project No. VA101-457/6
Field Technician MAS & LEP
Analyst DMW

Monitoring Well/Piezometer **PH13-1-3**
Test 4
Slug Injected, Time = 0 8:32:35 AM

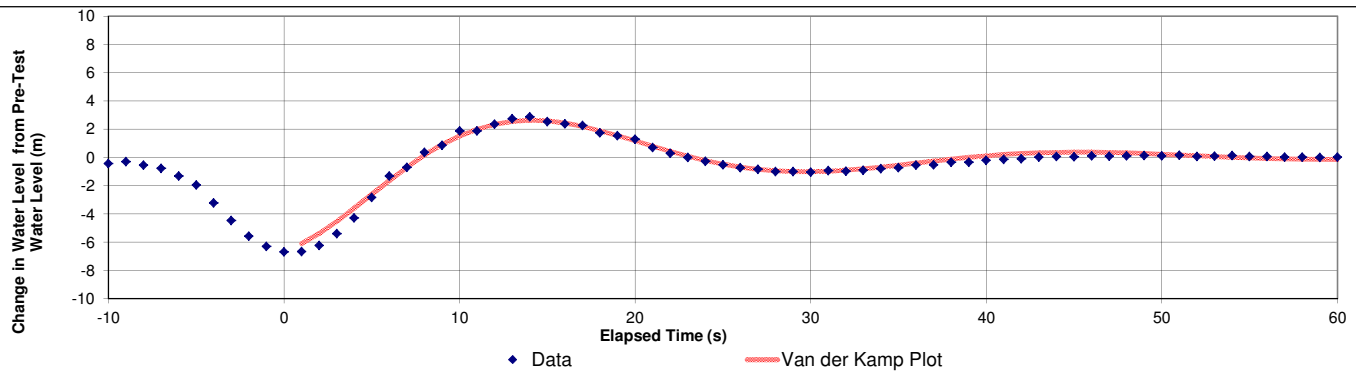
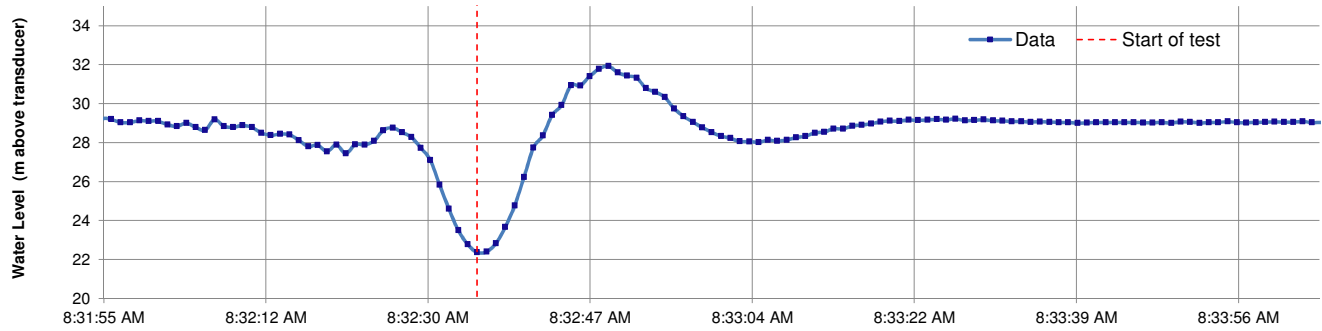
Monitoring Instrument Type Transducer
Slug Dimensions and Type Airlift Water Level Depression
Test Date 31-Jan-13

Drill-hole diameter, D 0.096 m
Effective diameter of drillrods, d_e 0.078 m
Top of test zone 283.8 mbgs
Bottom of test zone 349.3 mbgs
Test Length, L 65.5 m

Water level 29.0 m above transducer
Water level 39.0 m bgs
Predicted length of water column, L 220 m
d 0.29
Angular frequency (per second), ω 0.20 s^{-1}
Damping constant, γ 0.06 s^{-1}
Initial amplitude -6.6

Hydraulic Conductivity, K 2.E-05 m/s
Storage, S 1.E-04

Transmissivity, T 1.E-03 m^2/s



TEST COMMENTS:

Discharge rate at end of airlifting test was 0.14l/s

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REV	DATE	ISSUED WITH REPORT	DESCRIPTION	FTJ PREP'D	CAS CHK'D	KJB APP'D
0	21OCT13	ISSUED WITH REPORT				

**NEW GOLD INC.
BLACKWATER GOLD PROJECT**

**HYDRAULIC CONDUCTIVITY CALCULATION
USING VAN DER KAMP (1976) METHOD**

Print Dec/04/13 17:09:09

Project No. VA101-457/6
Field Technician MAS
Analyst DMW

Monitoring Well/Piezometer **PH13-1-3**
Test 5
Slug Injected, Time = 0 6:52:12 AM

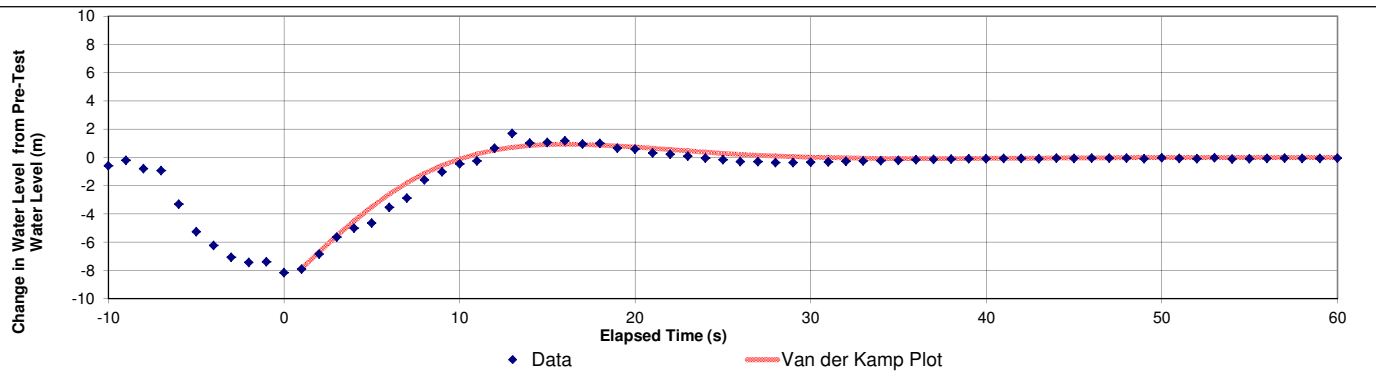
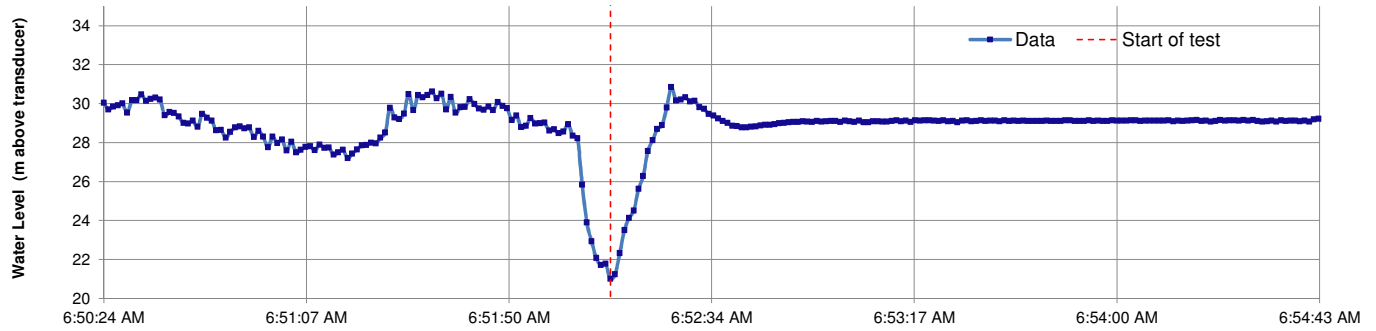
Monitoring Instrument Type Transducer
Slug Dimensions and Type Airlift Water Level Depression
Test Date 2-Feb-13

Drill-hole diameter, D 0.096 m
Effective diameter of drillrods, d_e 0.078 m
Top of test zone 349.3 mbgs
Bottom of test zone 414.8 mbgs
Test Length, L 65.5 m

Water level 29.1 m above transducer
Water level 39.1 m bgs
Predicted length of water column, L 250 m
d 0.63
Angular frequency (per second), ω 0.15 s^{-1}
Damping constant, γ 0.13 s^{-1}
Initial amplitude -9.0

Hydraulic Conductivity, K 9.E-06 m/s
Storage, S 1.E-04

Transmissivity, T 6.E-04 m^2/s



TEST COMMENTS:

Discharge rate at end of airlifting was 0.14l/s

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REV	DATE	ISSUED WITH REPORT DESCRIPTION	PREP'D	CAS	CHK'D	KJB	APP'D
0	21 OCT 13	ISSUED WITH REPORT	FTJ	CAS	KJB		

**NEW GOLD INC.
BLACKWATER GOLD PROJECT**

**HYDRAULIC CONDUCTIVITY CALCULATION
USING HVORSLEV (1951) METHOD**

Print 11/21/13 18:23

Project No. VA101-457/6
Field Technician LEP
Analyst DMW

Observation Well **PH13-1-3**
Test 6

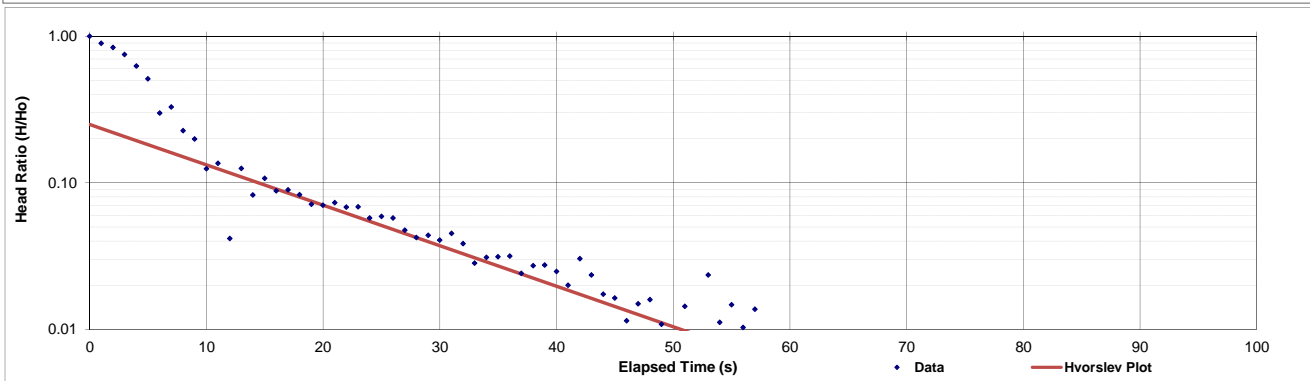
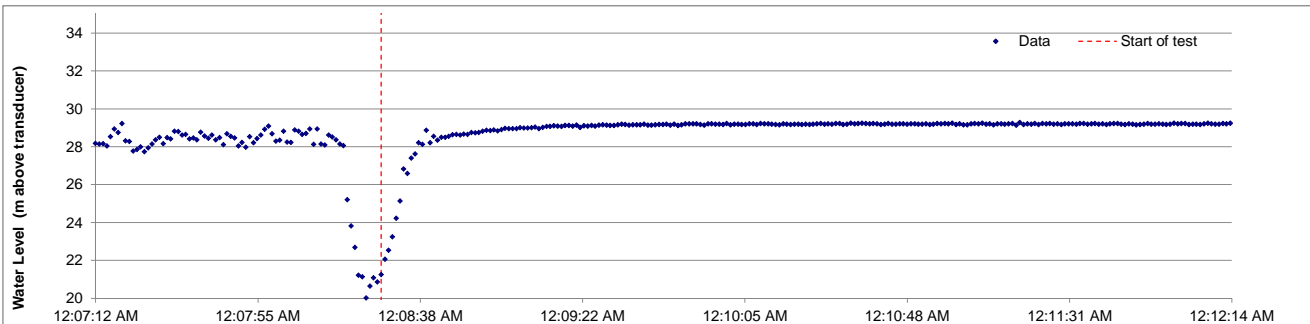
Monitoring Instrument Type Transducer
Slug Dimensions and Type Airlift Water Level Depression
Test Date 04-Feb-13

Drill-hole diameter, D 0.096 m
Effective diameter of drillrods, d_e 0.078 m
Top of test zone 414.8 m
Bottom of test zone 484.9 m
Test Length, L 70.1 m

Slug Injected, Time = 0 12:08:28 AM
Initial water level 29.2 m above transducer
Water level after slug 21.3 m above transducer
Change In Water Level, H_0 -7.9 m

Transmissivity, T 4E-04 m²/s
Hydraulic Conductivity, K 5E-06 m/s

Intercept 0.3



TEST COMMENTS:

Static water level was estimated from the post-test recovered water level.

M:\1\01\00457\06\A\Data\Task 206 - Phase 5 - Open Hydrogeological Site Investigation\Observation wells\Hydraulic Testing\Analysis\Reviewed\PW1 location\PH13-1-3_Hvorslev and vanderkamp\PH13-1-3 test 6.xlsx\Hvorslev

REV	DATE	ISSUED WITH REPORT DESCRIPTION	PREP'D	CHK'D	APP'D
0	21COT13	ISSUED WITH REPORT	FTJ	CAS	KJB

**NEW GOLD INC.
BLACKWATER GOLD PROJECT**

**HYDRAULIC CONDUCTIVITY CALCULATION
USING HVORSLEV (1951) METHOD**

Print 12/04/13 17:01

Project No. VA101-457/6
Field Technician TDS
Analyst MAS & LEP

Observation Well **PH12-2-1**
Test 1

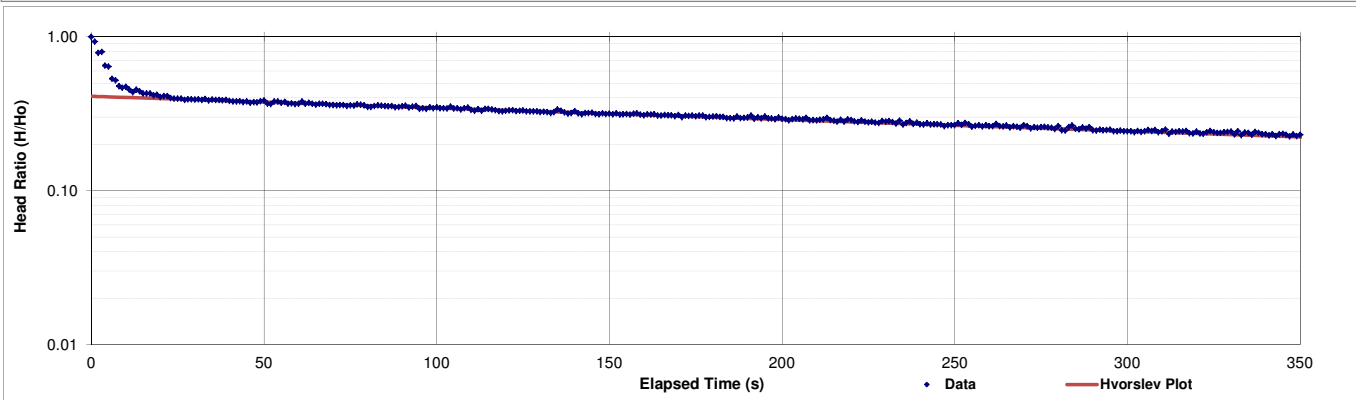
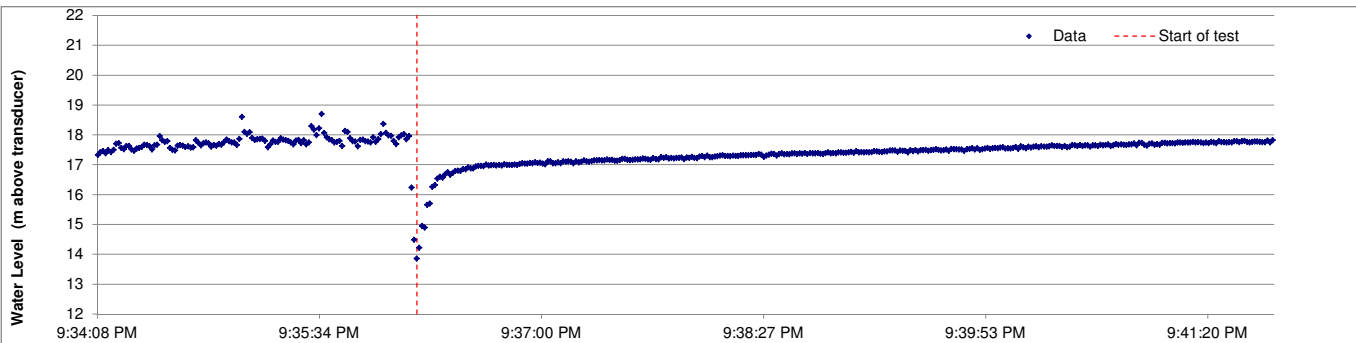
Monitoring Instrument Type Transducer
Slug Dimensions and Type Airlift Water Level Depression
Test Date 2-Dec-12

Drill-hole diameter, D 0.096 m
Effective diameter of drillrods, d_e 0.078 m
Top of test zone 41.8 m
Bottom of test zone 72.2 m
Test Length, L 30.5 m

Slug Injected, Time = 0 9:36:12 PM
Initial water level 19.0 m above transducer
Water level after slug 13.9 m above transducer
Change In Water Level, H_0 -5.1 m

Transmissivity, T $9E-06$ m²/s
Hydraulic Conductivity, K $3E-07$ m/s

Intercept 0.4



TEST COMMENTS:

Static water level was estimated from the post-test recovered water level.
Stopped airlift test after 10 minutes. No noticeable water discharged from borehole after removal of well bore storage.

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REV	DATE	DESCRIPTION	PREP'D	CHK'D	APP'D
0	OCT-12	ISSUED WITH REPORT	FTJ	CAS	KJB

**NEW GOLD INC.
BLACKWATER GOLD PROJECT**

**HYDRAULIC CONDUCTIVITY CALCULATION
USING HVORSLEV (1951) METHOD**

Print 11/21/13 18:30

Project No. VA101-457/6
Field Technician LEP & MAS
Analyst MAS

Observation Well PH12-2-1
Test 2

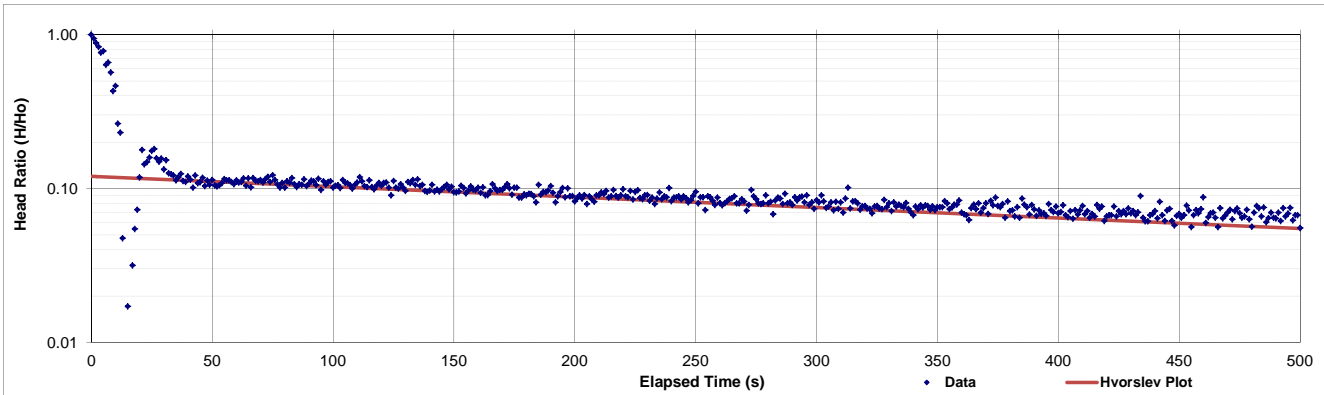
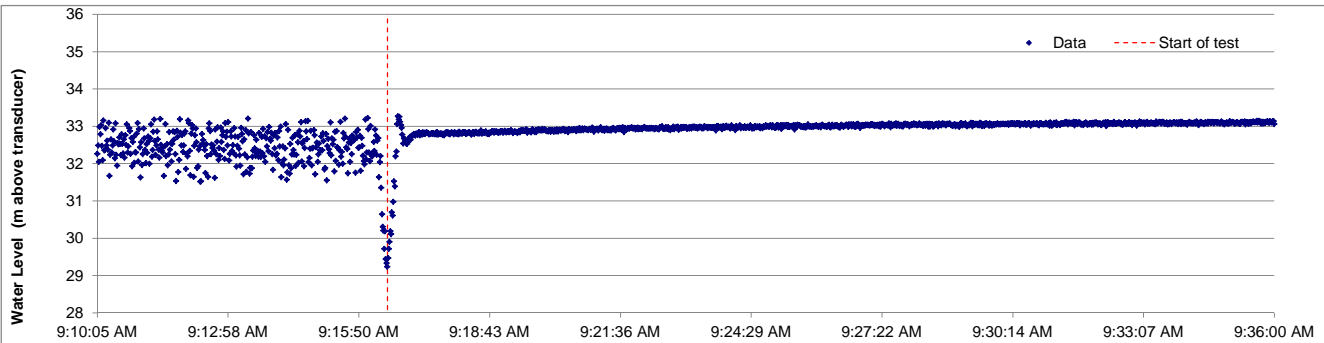
Monitoring Instrument Type Transducer
Slug Dimensions and Type Airlift Water Level Depression
Test Date 03-Dec-12

Drill-hole diameter, D 0.096 m
Effective diameter of drillrods, d_e 0.078 m
Top of test zone 67.7 m
Bottom of test zone 92.0 m
Test Length, L 24.4 m

Slug Injected, Time = 0 9:16:28 AM
Initial water level 33.3 m above transducer
Water level after slug 29.2 m above transducer
Change In Water Level, H_0 -4.0 m

Transmissivity, T $7E-06$ m²/s
Hydraulic Conductivity, K $3E-07$ m/s

Intercept 0.1



TEST COMMENTS:

Static water level was estimated from the post-test recovered water level.
Discharge rate at the end of the airlift test was 0.2 l/s.

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REV	DATE	DESCRIPTION	PREP'D	CHK'D	APP'D
0	10OCT12	ISSUED WITH REPORT	FTJ	CAS	KJB

**NEW GOLD INC.
BLACKWATER GOLD PROJECT**

**HYDRAULIC CONDUCTIVITY CALCULATION
USING HVORSLEV (1951) METHOD**

Print 11/21/13 18:35

Project No. VA101-457/6
Field Technician TDS
Analyst MAS

Observation Well **PH12-2-1**
Test 3

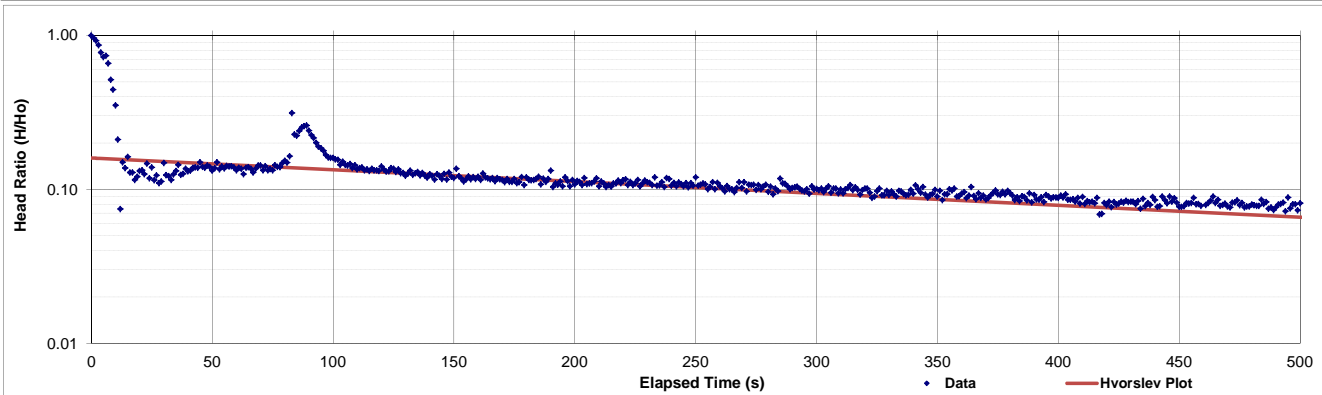
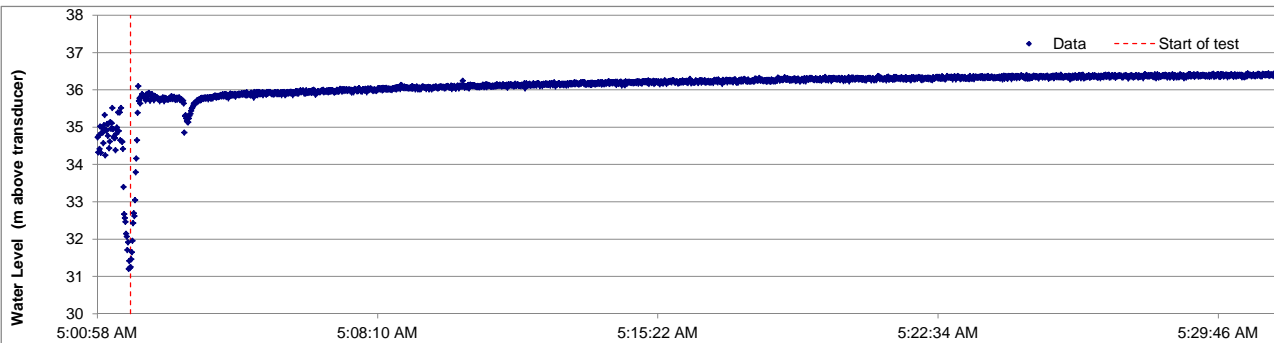
Monitoring Instrument Type Transducer
Slug Dimensions and Type Airlift Water Level Depression
Test Date 04-Dec-12

Drill-hole diameter, D 0.096 m
Effective diameter of drillrods, d_e 0.078 m
Top of test zone 92.0 m
Bottom of test zone 137.8 m
Test Length, L 45.7 m

Slug Injected, Time = 0 5:01:49 AM
Initial water level 36.5 m above transducer
Water level after slug 31.3 m above transducer
Change In Water Level, H_0 -5.2 m

Transmissivity, T $9E-06$ m²/s
Hydraulic Conductivity, K $2E-07$ m/s

Intercept 0.2



TEST COMMENTS:

Static water level was estimated from the post-test recovered water level.
Discharge rate at the end of the airlift test was 0.2 l/s.

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0	21OCT13	ISSUED WITH REPORT	FTJ	CAS	KJB
REV	DATE	DESCRIPTION	PREP'D	CHK'D	APP'D

**NEW GOLD INC.
BLACKWATER GOLD PROJECT**

**HYDRAULIC CONDUCTIVITY CALCULATION
USING HVORSLEV (1951) METHOD**

Print 11/21/13 18:42

Project No. VA101-457/6
Field Technician TDS
Analyst MAS

Observation Well **PH12-2-1**
Test 4

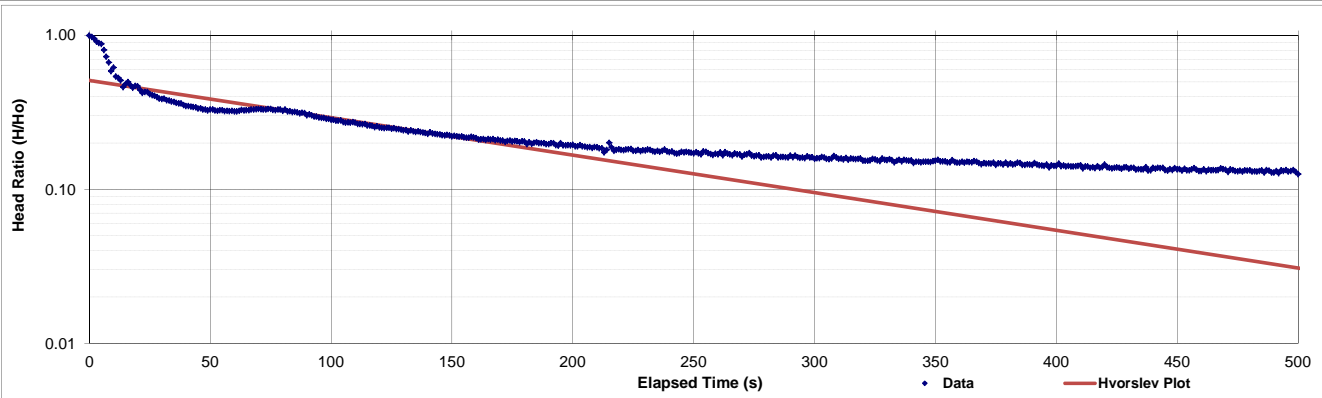
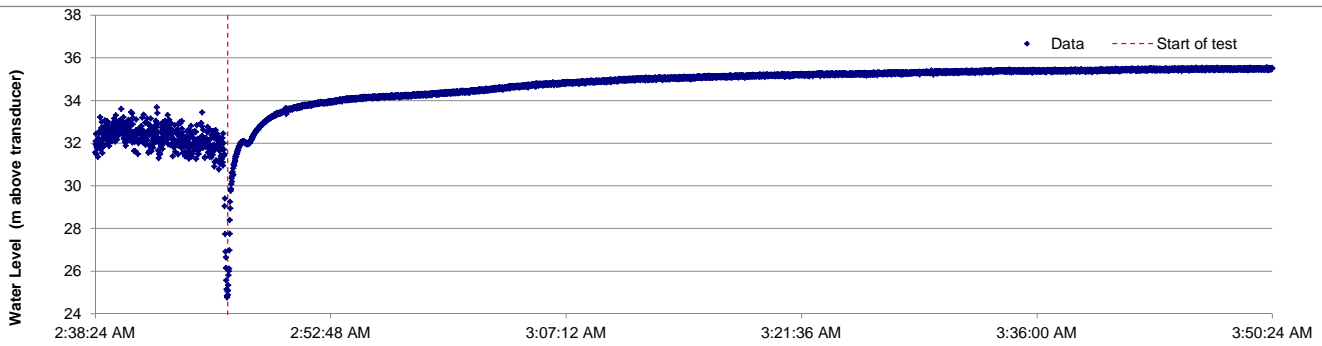
Monitoring Instrument Type Transducer
Slug Dimensions and Type Airlift Water Level Depression
Test Date 05-Dec-12

Drill-hole diameter, D 0.096 m
Effective diameter of drillrods, d_e 0.078 m
Top of test zone 137.8 m
Bottom of test zone 186.5 m
Test Length, L 48.8 m

Slug Injected, Time = 0 2:46:30 AM
Initial water level 35.5 m above transducer
Water level after slug 24.9 m above transducer
Change In Water Level, H_0 -10.6 m

Transmissivity, T $3E-05$ m²/s
Hydraulic Conductivity, K $6E-07$ m/s

Intercept 0.5



TEST COMMENTS:

Static water level was estimated from the post-test recovered water level.
Discharge rate at the end of the airlift test was 0.2 l/s.

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0	21OCT13	ISSUED WITH REPORT	FTJ	CAS	KJB
REV	DATE	DESCRIPTION	PREP'D	CHK'D	APP'D

**NEW GOLD INC.
BLACKWATER GOLD PROJECT**

**HYDRAULIC CONDUCTIVITY CALCULATION
USING HVORSLEV (1951) METHOD**

Print 11/21/13 18:38

Project No. VA101-457/6
Field Technician TDS
Analyst MAS

Observation Well **PH12-2-1**
Test 5

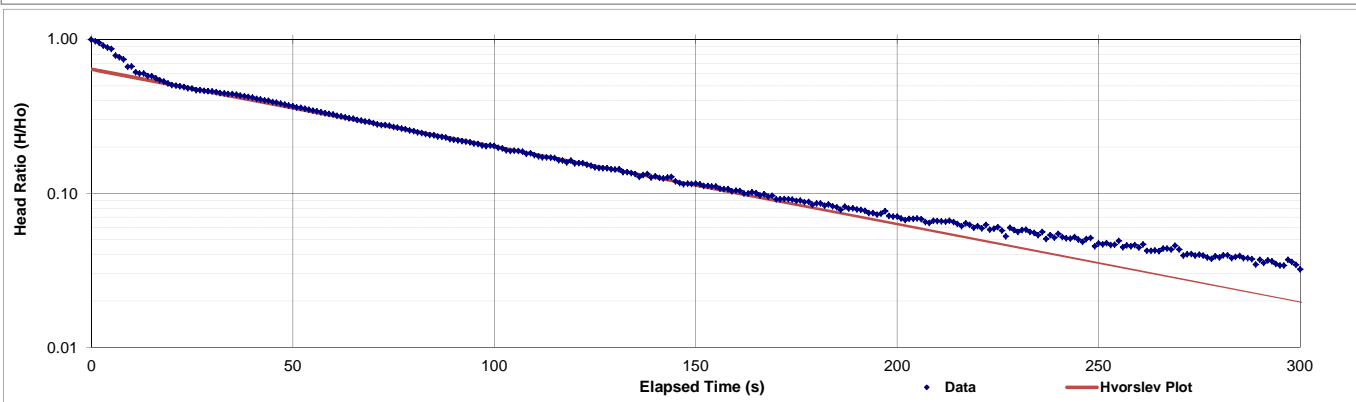
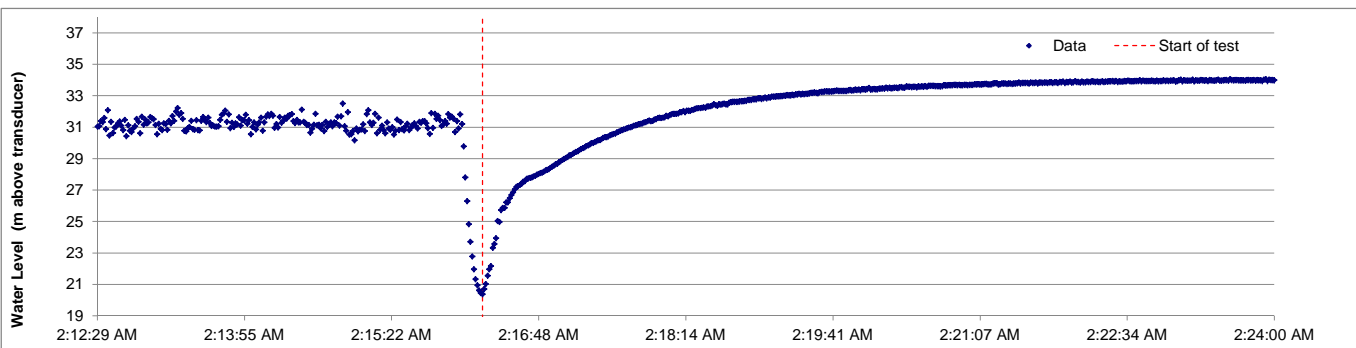
Monitoring Instrument Type Transducer
Slug Dimensions and Type Airlift Water Level Depression
Test Date 08-Dec-12

Drill-hole diameter, D 0.096 m
Effective diameter of drillrods, d_e 0.078 m
Top of test zone 186.5 m
Bottom of test zone 265.8 m
Test Length, L 79.2 m

Slug Injected, Time = 0 2:16:15 AM
Initial water level 34.2 m above transducer
Water level after slug 20.4 m above transducer
Change In Water Level, H_0 -13.9 m

Transmissivity, T $6E-05$ m²/s
Hydraulic Conductivity, K $8E-07$ m/s

Intercept 0.6



TEST COMMENTS:

Static water level was estimated from the post-test recovered water level.
Discharge rate at the end of the airlift test was 0.13 l/s.

M:\1\01\00457\06\A\Data\Task 206 - Phase 5 - Open Hydrogeological Site Investigation\Observation wells\Hydraulic Testing\Analysis\Reviewed\PW2 location\PH12-2-1 Hvorslev and Vanderkamp\PH12-2-1 Test 5 Hvorslev.xlsx\Hvorslev

0	21OCT13	ISSUED WITH REPORT	FTJ	CAS	KJB
REV	DATE	DESCRIPTION	PREP'D	CHK'D	APP'D

**NEW GOLD INC.
BLACKWATER GOLD PROJECT**

**HYDRAULIC CONDUCTIVITY CALCULATION
USING HVORSLEV (1951) METHOD**

Print 11/21/13 18:59

Project No. VA101-457/6
Field Technician MAS
Analyst MAS

Observation Well **PH13-2-2**
Test 1

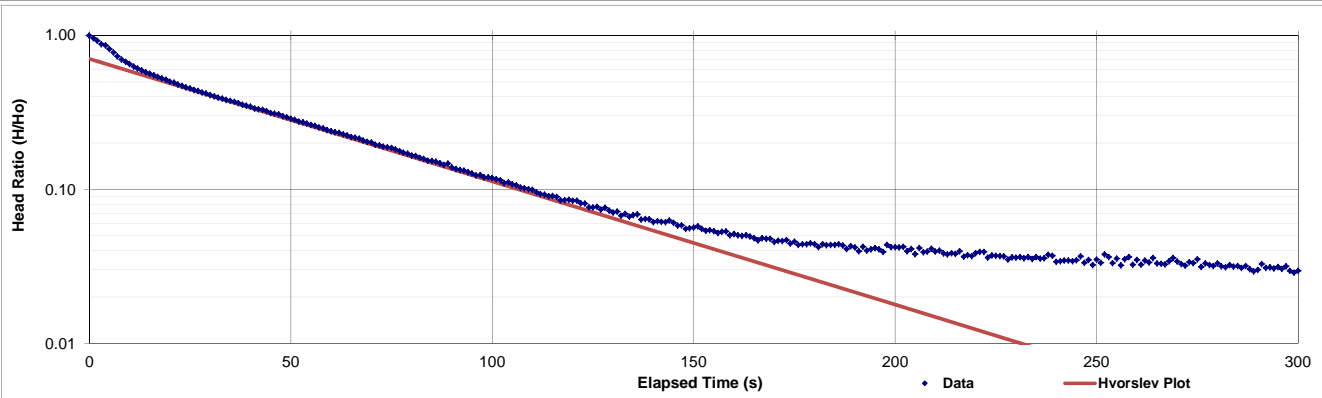
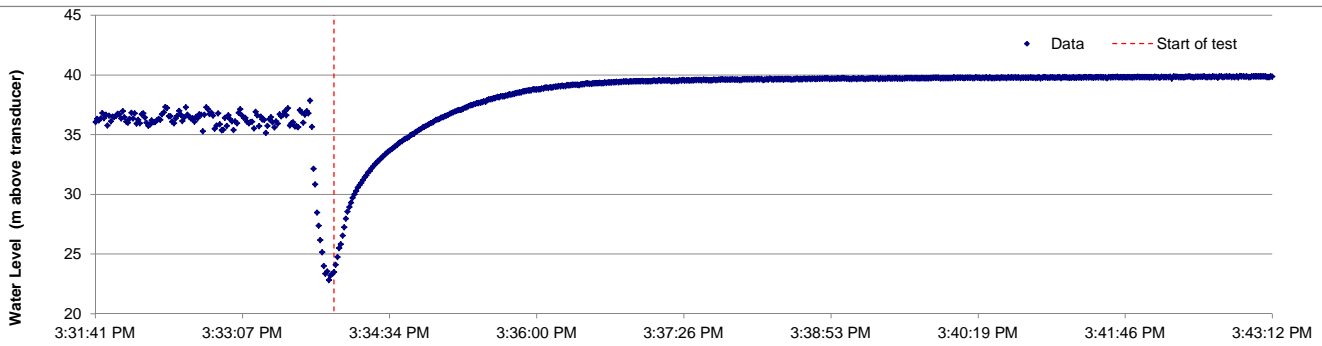
Monitoring Instrument Type Transducer
Slug Dimensions and Type Airlift Water Level Depression
Test Date 17-Jan-13

Drill-hole diameter, D 0.096 m
Effective diameter of drillrods, d_e 0.078 m
Top of test zone 64.3 m
Bottom of test zone 103.9 m
Test Length, L 39.6 m

Slug Injected, Time = 0 3:34:01 PM
Initial water level 40.2 m above transducer
Water level after slug 23.5 m above transducer
Change In Water Level, H_0 -16.7 m

Transmissivity, T $9E-05$ m²/s
Hydraulic Conductivity, K $2E-06$ m/s

Intercept 0.7



TEST COMMENTS:

Static water level was estimated from the post-test recovered water level.
Discharge rate at the end of the airlift test was 0.25 l/s.

M:\1\01\00457\06\A\Data\Task 206 - Phase 5 - Open Hydrogeological Site Investigation\Observation wells\Hydraulic Testing\Analysis\Reviewed\PW2 location\PH13-2-2 Airlift and Hvorslev\PH13-2-2 Test 1 Hvorslev.xlsx\Hvorslev

0	21OCT13	ISSUED WITH REPORT	FTJ	CAS	KJB
REV	DATE	DESCRIPTION	PREP'D	CHK'D	APP'D

**NEW GOLD INC.
BLACKWATER GOLD PROJECT**

**AIRLIFT PUMPING RECOVERY TEST
USING THIS METHOD (1935)**

21/11/2013 18:46

Project No. VA101-457/6
Field Technician LEP
Analyst CM
Test Date 18-Jan-13

Drill-hole **PH13-2-2**
Test 2

Drill-hole Diameter 0.096 m (HQ)
Stinger Diameter 0.019 m
Top of Test Zone 103.9 mbgs
Bottom of Test Zone 164.9 mbgs
Test Length 61.0 m
Stinger Depth 58.5 mbgs

Start Airlifting 3:13 PM
End Airlifting 3:43 PM

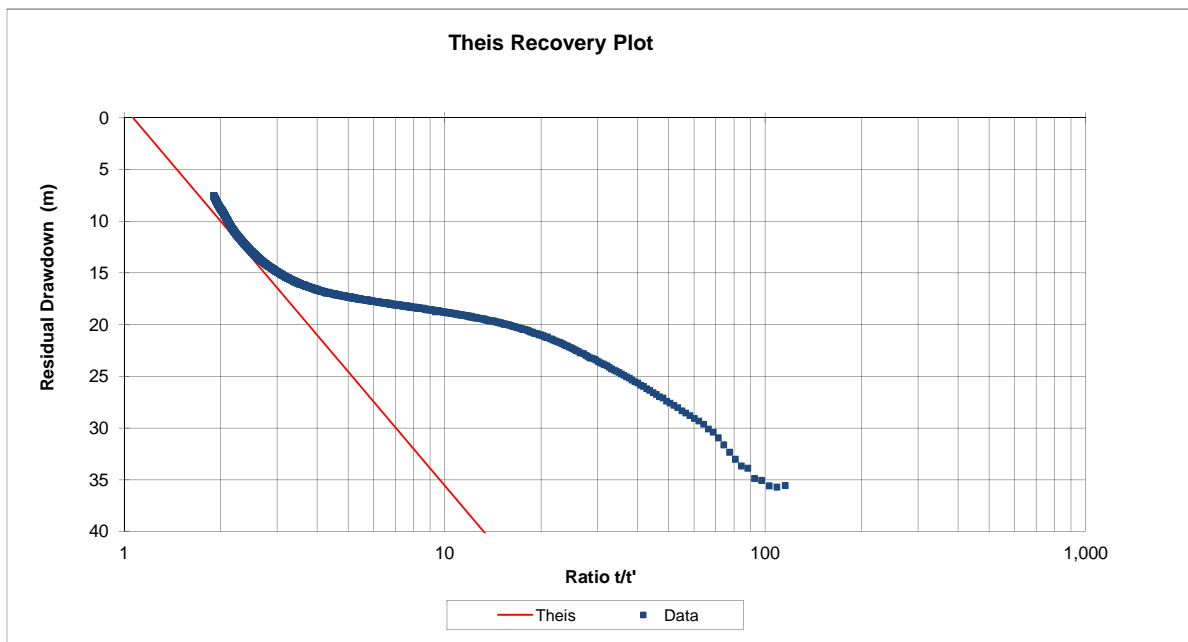
Final Water Level 59.4 m above transducer
Initial Water Level 23.9 m above transducer
Drawdown 35.4 m

Well No.	Description	Distance (m)	Start (s)	Pumping Rate (m ³ /s)
1	Start Airlifting	0.05	0	3.99E-04
1	End Airlifting	0.05	1,830	-3.99E-04

Air Compressor Rating 400 cfm
Air Pressure During Test 125 psi

Hydraulic Conductivity, K 3E-08 m/s
Transmissivity, T 2E-06 m²/s

Storativity, S 1E-04
Offset 0.0



TEST COMMENTS:

M:\1\01\00457\06\A\Data\Task 206 - Phase 5 - Open Hydrogeological Site Investigation\Observation wells\Hydraulic Testing\Analysis\Reviewed\PW2 location\PH13-2-2 Airlift and Hvorslev\PH13-2-2 Airlift 2 341'-541'.xlsx\This Recovery Analysis

0	10OCT13	ISSUED WITH REPORT	FTJ	CAS	KJB
REV	DATE	DESCRIPTION	PREP'D	CHK'D	APP'D

**NEW GOLD INC.
BLACKWATER GOLD PROJECT**

**AIRLIFT PUMPING RECOVERY TEST
USING THIS METHOD (1935)**

21/11/2013 18:48

Project No. VA101-457/6
Field Technician LEP
Analyst CM
Test Date 19-Jan-13

Drill-hole **PH13-2-2**
Test 3

Drill-hole Diameter 0.096 m (HQ)
Stinger Diameter 0.019 m
Top of Test Zone 164.9 mbgs
Bottom of Test Zone 221.3 mbgs
Test Length 56.4 m
Stinger Depth 58.5 mbgs

Start Airlifting 1:07 AM
End Airlifting 1:47 AM

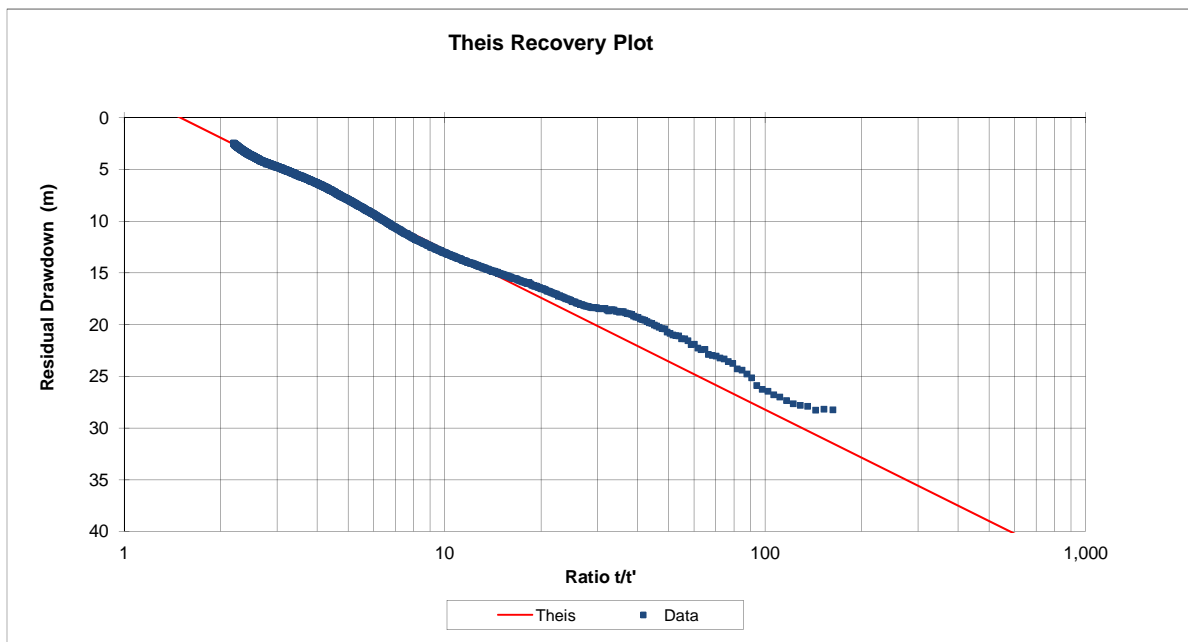
Final Water Level 53.0 m above transducer
Initial Water Level 24.8 m above transducer
Drawdown 28.2 m

Well No.	Description	Distance (m)	Start (s)	Pumping Rate (m ³ /s)
1	Start Airlifting	0.05	0	2.1E-04
1	End Airlifting	0.05	2,420	-2.1E-04

Air Compressor Rating 400 cfm
Air Pressure During Test 100 psi

Hydraulic Conductivity, K 4E-08 m/s
Transmissivity, T 3E-06 m²/s

Storativity, S 1E-04
Offset 1.0



TEST COMMENTS:

M:\1\01\00457\06\A\Data\Task 206 - Phase 5 - Open Hydrogeological Site Investigation\Observation wells\Hydraulic Testing\Analysis\Reviewed\PW2 location\PH13-2-2 Airlift and Hvorslev\PH13-2-2 Airlift 3 541' - 726'.xlsx\Theis Recovery Analysis

REV	DATE	ISSUED WITH REPORT	DESCRIPTION	PREP'D	CHK'D	APP'D
0	10OCT13	ISSUED WITH REPORT		FTJ	CAS	KJB

**NEW GOLD INC.
BLACKWATER GOLD PROJECT**

**HYDRAULIC CONDUCTIVITY CALCULATION
USING HVORSLEV (1951) METHOD**

Print 11/28/13 8:28

Project No. VA101-457/6
Field Technician LEP
Analyst MAS

Observation Well **PH13-2-2**
Test 4

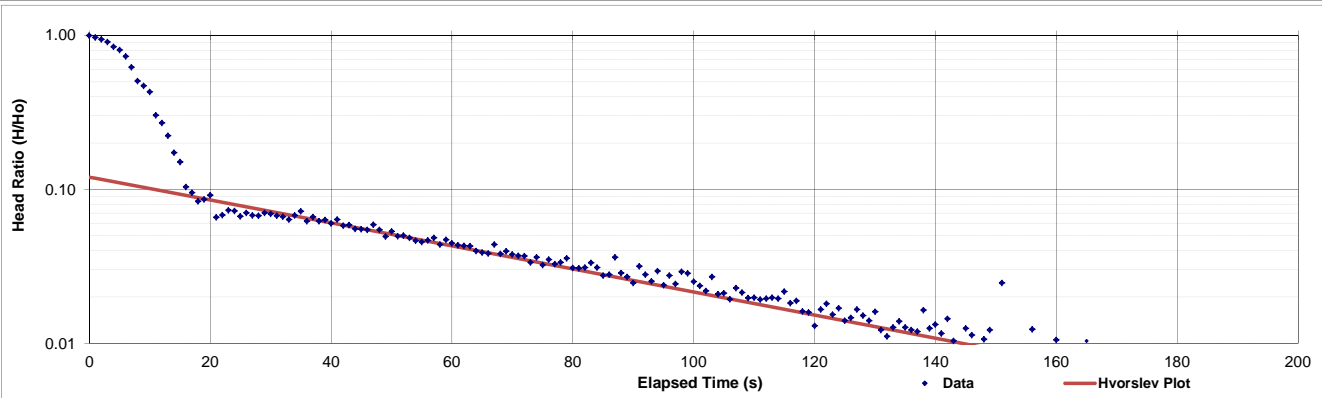
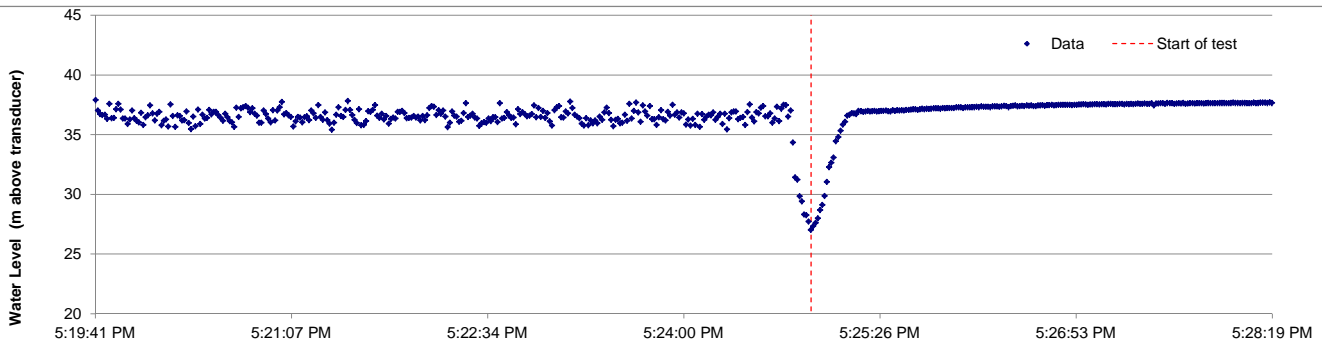
Monitoring Instrument Type Transducer
Slug Dimensions and Type Airlift Water Level Depression
Test Date 21-Jan-13

Drill-hole diameter, D 0.096 m
Effective diameter of drillrods, d_e 0.078 m
Top of test zone 221.3 m
Bottom of test zone 320.3 m
Test Length, L 99.1 m

Slug Injected, Time = 0 5:24:56 PM
Initial water level 37.7 m above transducer
Water level after slug 27.0 m above transducer
Change In Water Level, H_0 -10.7 m

Transmissivity, T $1E-04$ m²/s
Hydraulic Conductivity, K $1E-06$ m/s

Intercept 0.1



TEST COMMENTS:

Static water level was estimated from post-test water level.
Discharge rate at end of airlifting test was 0.3L/s.

M:\1\01\00457\06\A\Data\Task 206 - Phase 5 - Open Hydrogeological Site Investigation\Observation wells\Hydraulic Testing\Analysis\Reviewed\PW2 location\PH13-2-2 Airlift and Hvorslev\PH13-2-2 Test 4 Hvorslev.xlsx\Hvorslev

0	21OCT13	ISSUED WITH REPORT	FTJ	CAS	KJB
REV	DATE	DESCRIPTION	PREP'D	CHK'D	APP'D

**NEW GOLD INC.
BLACKWATER GOLD PROJECT**

**AIRLIFT PUMPING RECOVERY TEST
USING THIS METHOD (1935)**

21/11/2013 18:55

Project No. VA101-457/6
Field Technician LEP
Analyst CM
Test Date 22-Jan-13

Drill-hole **PH13-2-2**
Test 5

Drill-hole Diameter 0.096 m (HQ)
Stinger Diameter 0.019 m
Top of Test Zone 320.3 mbgs
Bottom of Test Zone 361.5 mbgs
Test Length 41.1 m
Stinger Depth 58.5 mbgs

Start Airlifting 2:01 PM
End Airlifting 2:34 PM

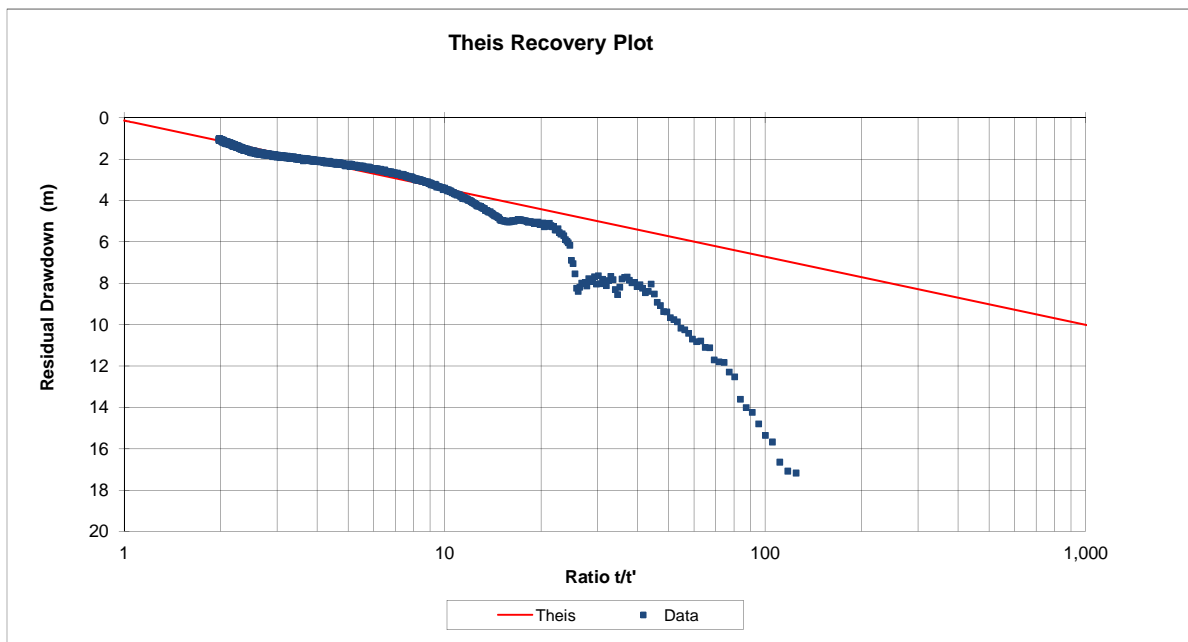
Final Water Level 37.5 m above transducer
Initial Water Level 20.6 m above transducer
Drawdown 16.9 m

Well No.	Description	Distance (m)	Start (s)	Pumping Rate (m ³ /s)
1	Start Airlifting	0.05	0	1.6E-04
1	End Airlifting	0.05	1,980	-1.6E-04

Air Compressor Rating 400 cfm
Air Pressure During Test 100 psi

Hydraulic Conductivity, K 2E-07 m/s
Transmissivity, T 9E-06 m²/s

Storativity, S 1E-04
Offset -2.0



TEST COMMENTS:

M:\1\01\00457\06\A\Data\Task 206 - Phase 5 - Open Hydrogeological Site Investigation\Observation wells\Hydraulic Testing\Analysis\Reviewed\PW2 location\PH13-2-2 Airlift and Hvorslev\PH13-2-2 Airlift 5 1051'-1186'.xlsx]Thisis Recovery Analysis

REV	DATE	DESCRIPTION	PREP'D	CHK'D	APP'D
0	10OCT13	ISSUED WITH REPORT	FTJ	CAS	KJB

**NEW GOLD INC.
BLACKWATER GOLD PROJECT**

**AIRLIFT PUMPING RECOVERY TEST
USING THIS METHOD (1935)**

25/11/2013 14:15

Project No. VA101-457/6
Field Technician LEP
Analyst CM
Test Date 22-Jan-13

Drill-hole **PH13-2-2**
Test 6

Drill-hole Diameter 0.096 m (HQ)
Stinger Diameter 0.019 m
Top of Test Zone 361.5 mbgs
Bottom of Test Zone 430.1 mbgs
Test Length 68.6 m
Stinger Depth 58.5 mbgs

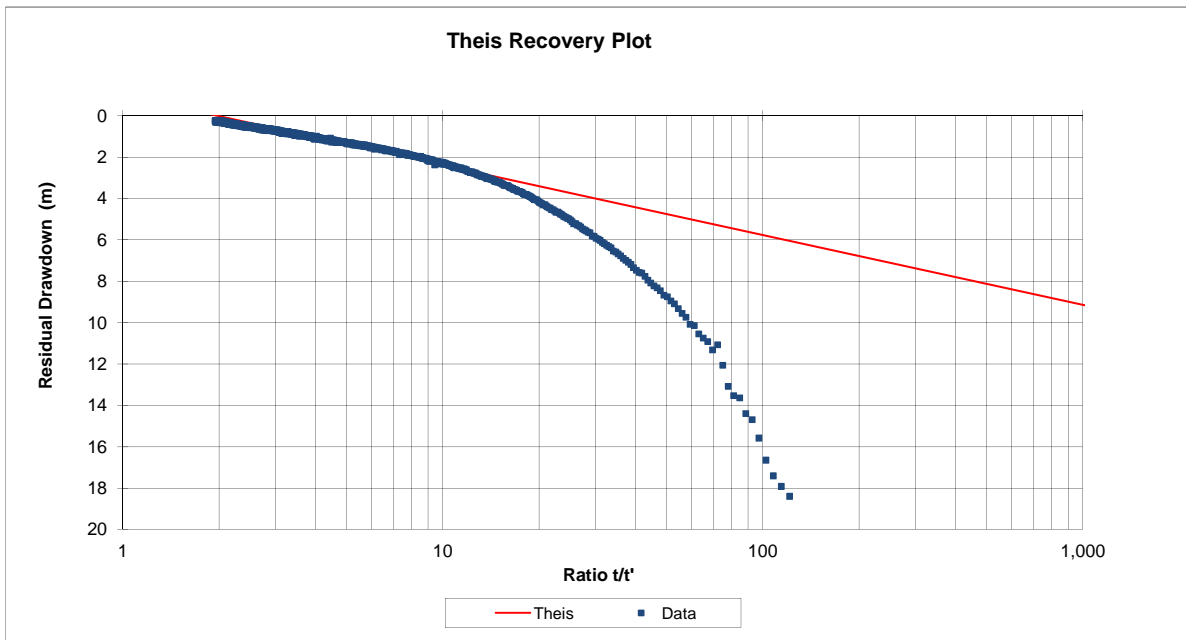
Start Airlifting 1:24 AM
End Airlifting 1:56 AM
Final Water Level 38.0 m above transducer
Initial Water Level 19.3 m above transducer
Drawdown 18.7 m

Well No.	Description	Distance (m)	Start (s)	Pumping Rate (m ³ /s)
1	Start Airlifting	0.05	0	1.2E-04
1	End Airlifting	0.05	1,920	-1.2E-04

Air Compressor Rating 400 cfm
Air Pressure During Test 150 psi

Hydraulic Conductivity, K 1E-07 m/s
Transmissivity, T 7E-06 m²/s

Storativity, S 1E-04
Offset 0.0



TEST COMMENTS:

M:\1\01\00457\06\A\Data\Task 206 - Phase 5 - Open Hydrogeological Site Investigation\Observation wells\Hydraulic Testing\Analysis\Reviewed\PW2 location\PH13-2-2 Airlift and Hvorslev\PH13-2-2 Airlift 6 1186'-1411'.xlsx]Theis Recovery Analysis

REV	DATE	ISSUED WITH REPORT	DESCRIPTION	PREP'D	CHK'D	APP'D
0	10OCT13	ISSUED WITH REPORT		FTJ	CAS	KJB

**NEW GOLD INC.
BLACKWATER GOLD PROJECT**

**HYDRAULIC CONDUCTIVITY CALCULATION
USING HVORSLEV (1951) METHOD**

Print 11/22/13 10:04

Project No. VA101-457/6
Field Technician MAS & LEP
Analyst MAS

Observation Well **PH13-2-3**
Test 1

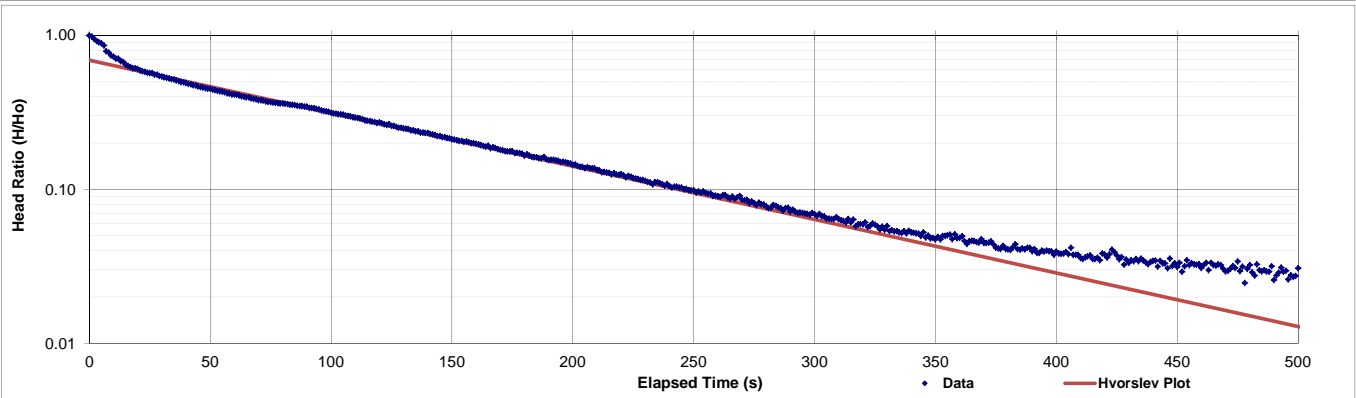
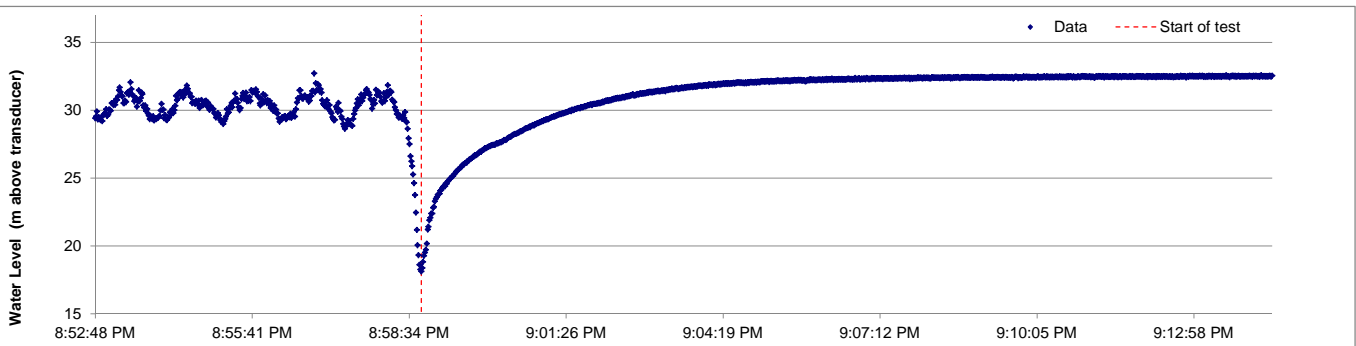
Monitoring Instrument Type Transducer
Slug Dimensions and Type Airlift Waterlevel Depression
Test Date 08-Jan-13

Drill-hole diameter, D 0.096 m
Effective diameter of drillrods, d_e 0.078 m
Top of test zone 70.4 m
Bottom of test zone 116.1 m
Test Length, L 45.7 m

Slug Injected, Time = 0 8:58:47 PM
Initial water level 32.8 m above transducer
Water level after slug 18.1 m above transducer
Change In Water Level, H_0 -14.6 m

Transmissivity, T $4E-05$ m²/s
Hydraulic Conductivity, K $9E-07$ m/s

Intercept 0.7



TEST COMMENTS:

Static water level was estimated from the post-test recovered water level.
Discharge rate at the end of the airlift test was 0.04 l/s.

M:\1\01\00457\06\A\Data\Task 206 - Phase 5 - Open Hydrogeological Site Investigation\Observation wells\Hydraulic Testing\Analysis\Reviewed\PW2 location\PH13-2-3 Hvorslev\PH13-2-3 Test 1 Hvorslev.xlsx\Hvorslev

0	10OCT13	ISSUED WITH REPORT	FTJ	CAS	KJB
REV	DATE	DESCRIPTION	PREP'D	CHK'D	APP'D

**NEW GOLD INC.
BLACKWATER GOLD PROJECT**

**HYDRAULIC CONDUCTIVITY CALCULATION
USING HVORSLEV (1951) METHOD**

Print 11/22/13 10:02

Project No. VA101-457/6
Field Technician MAS
Analyst MAS

Observation Well **PH13-2-3**
Test 2

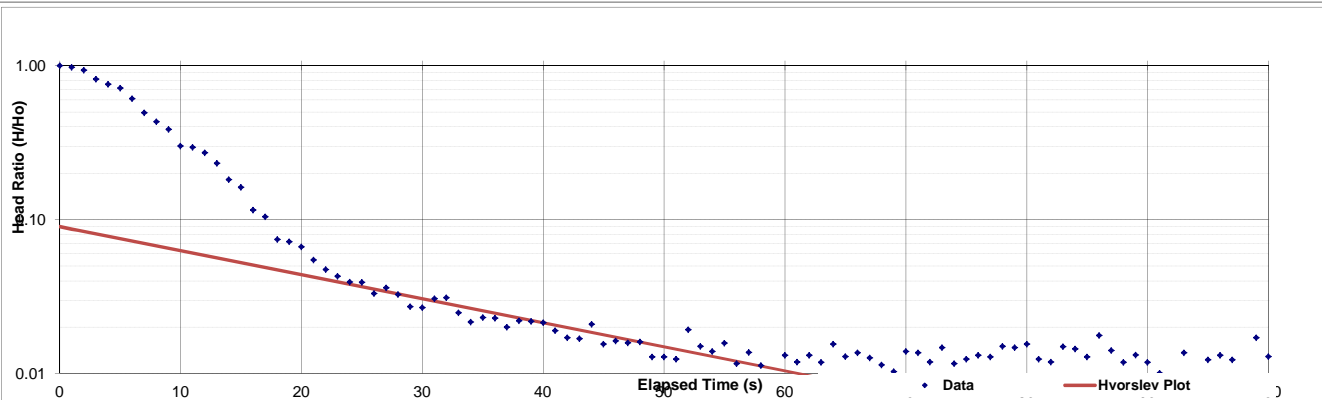
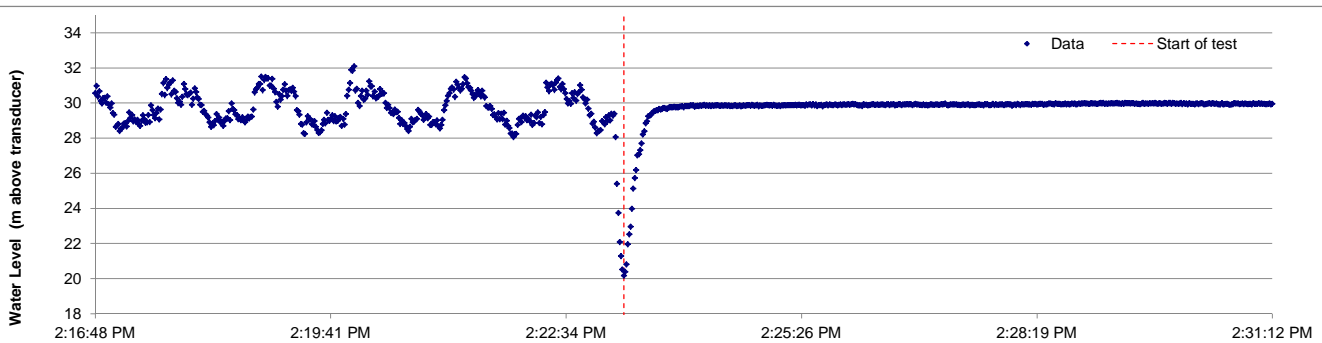
Monitoring Instrument Type Transducer
Slug Dimensions and Type Airlift Waterlevel Depression
Test Date 09-Jan-13

Drill-hole diameter, D 0.096 m
Effective diameter of drillrods, d_e 0.078 m
Top of test zone 113.1 m
Bottom of test zone 178.6 m
Test Length, L 65.5 m

Slug Injected, Time = 0 2:23:16 PM
Initial water level 30.0 m above transducer
Water level after slug 20.2 m above transducer
Change In Water Level, H_0 -9.8 m

Transmissivity, T 2E-04 m²/s
Hydraulic Conductivity, K 3E-06 m/s

Intercept 0.1



TEST COMMENTS:

Static water level was estimated from the post-test recovered water level.
Discharge rate at the end of the airlift test was 0.05 l/s.

M:\1\01\00457\06\A\Data\Task 206 - Phase 5 - Open Hydrogeological Site Investigation\Observation wells\Hydraulic Testing\Analysis\Reviewed\PW2 location\PH13-2-3 Hvorslev\PH13-2-3 Test 4 Hvorslev.xlsx\Hvorslev

0	10OCT13	ISSUED WITH REPORT	FTJ	CAS	KJB
REV	DATE	DESCRIPTION	PREP'D	CHK'D	APP'D

**NEW GOLD INC.
BLACKWATER GOLD PROJECT**

**HYDRAULIC CONDUCTIVITY CALCULATION
USING HVORSLEV (1951) METHOD**

Print 11/22/13 10:08

Project No. VA101-457/6
Field Technician MAS
Analyst MAS

Observation Well **PH13-2-3**
Test 3

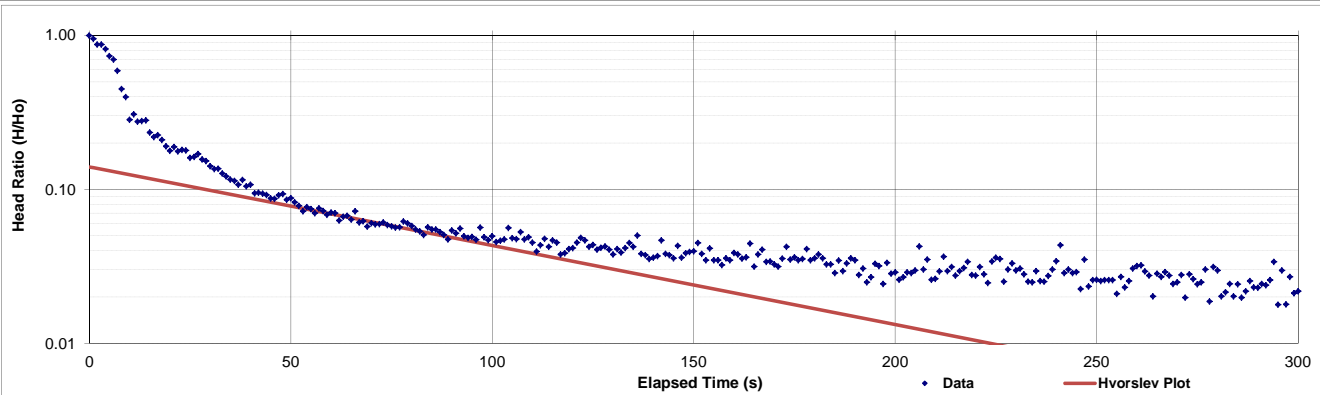
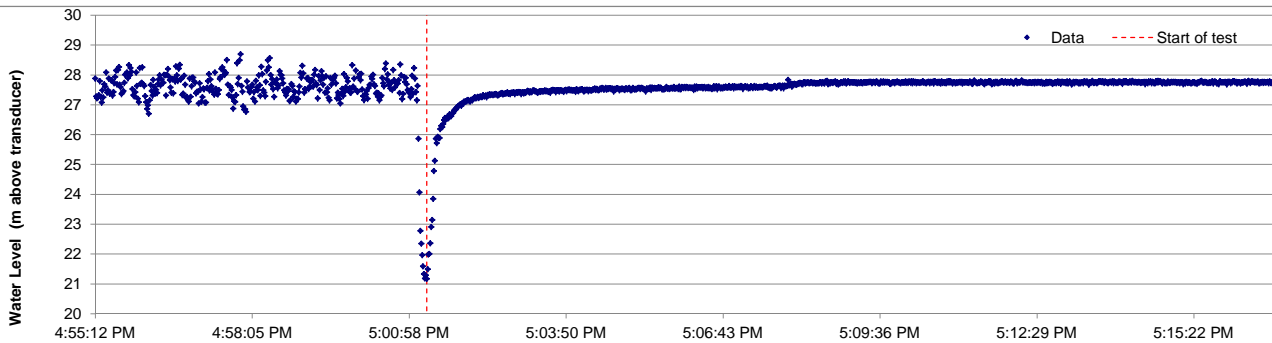
Monitoring Instrument Type Transducer
Slug Dimensions and Type Airlift Water Level Depression
Test Date 10-Jan-13

Drill-hole diameter, D 0.096 m
Effective diameter of drillrods, d_e 0.078 m
Top of test zone 174.0 m
Bottom of test zone 238.0 m
Test Length, L 64.0 m

Slug Injected, Time = 0 5:01:17 PM
Initial water level 27.7 m above transducer
Water level after slug 21.2 m above transducer
Change In Water Level, H_0 -6.6 m

Transmissivity, T $6E-05$ m²/s
Hydraulic Conductivity, K $1E-06$ m/s

Intercept 0.1



TEST COMMENTS:

Static water level was estimated from the post-test recovered water level.
Discharge rate at the end of the airlift test was 0.04 l/s.

M:\1\01\00457\06\A\Data\Task 206 - Phase 5 - Open Hydrogeological Site Investigation\Observation wells\Hydraulic Testing\Analysis\Reviewed\PW2 location\PH13-2-3 Hvorslev\PH13-2-3 Test 5 Hvorslev.xlsx\Hvorslev

0	10OCT13	ISSUED WITH REPORT	FTJ	CAS	KJB
REV	DATE	DESCRIPTION	PREP'D	CHK'D	APP'D

**NEW GOLD INC.
BLACKWATER GOLD PROJECT**

**HYDRAULIC CONDUCTIVITY CALCULATION
USING HVORSLEV (1951) METHOD**

Print 11/22/13 10:12

Project No. VA101-457/6
Field Technician MAS
Analyst MAS

Observation Well **PH13-2-3**
Test 4

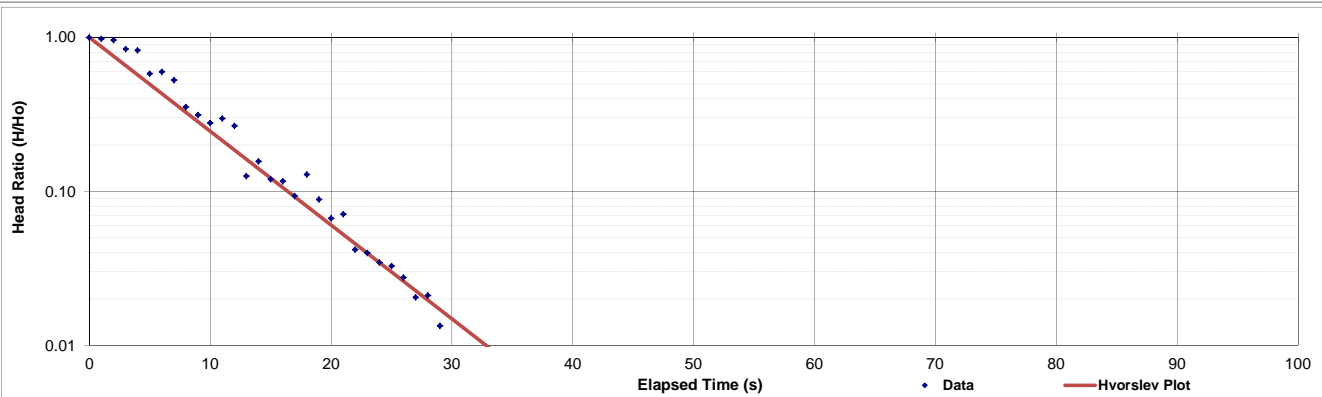
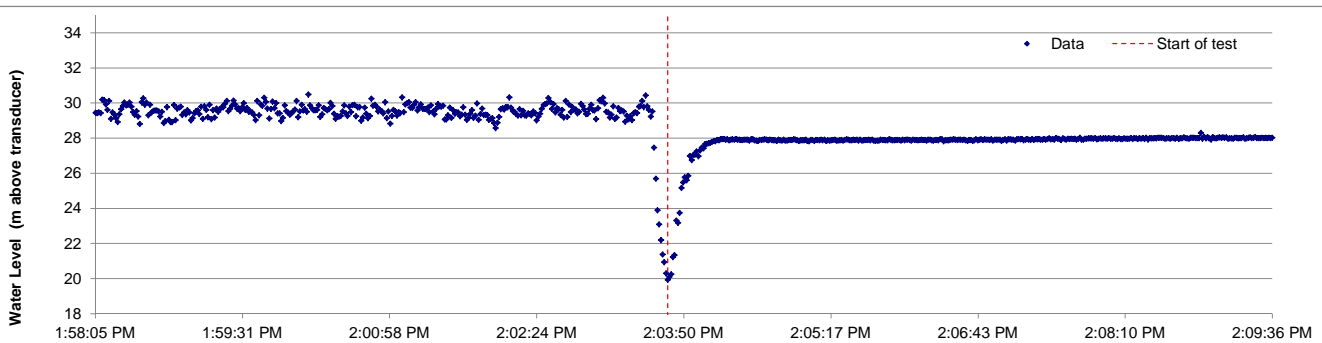
Monitoring Instrument Type Transducer
Slug Dimensions and Type Airlift Water Level Depression
Test Date 12-Jan-13

Drill-hole diameter, D 0.096 m
Effective diameter of drillrods, d_e 0.078 m
Top of test zone 235.0 m
Bottom of test zone 295.9 m
Test Length, L 61.0 m

Slug Injected, Time = 0 2:03:41 PM
Initial water level 28.0 m above transducer
Water level after slug 19.9 m above transducer
Change In Water Level, H_0 -8.1 m

Transmissivity, T $8E-04$ m²/s
Hydraulic Conductivity, K $1E-05$ m/s

Intercept 1.0



TEST COMMENTS:

Static water level was estimated from the post-test recovered water level.
Discharge rate at the end of the airlift test was 0.08 l/s.

M:\1\01\00457\06\A\Data\Task 206 - Phase 5 - Open Hydrogeological Site Investigation\Observation wells\Hydraulic Testing\Analysis\Reviewed\PW2 location\PH13-2-3 Hvorslev\PH13-2-3 Test 6 Hvorslev.xlsx\Hvorslev

0	21OCT13	ISSUED WITH REPORT	FTJ	CAS	KJB
REV	DATE	DESCRIPTION	PREP'D	CHK'D	APP'D

**NEW GOLD INC.
BLACKWATER GOLD PROJECT**

**HYDRAULIC CONDUCTIVITY CALCULATION
USING HVORSLEV (1951) METHOD**

Print 11/22/13 10:16

Project No. VA101-457/6
Field Technician LEP
Analyst MAS

Observation Well **PH13-2-3**
Test 5

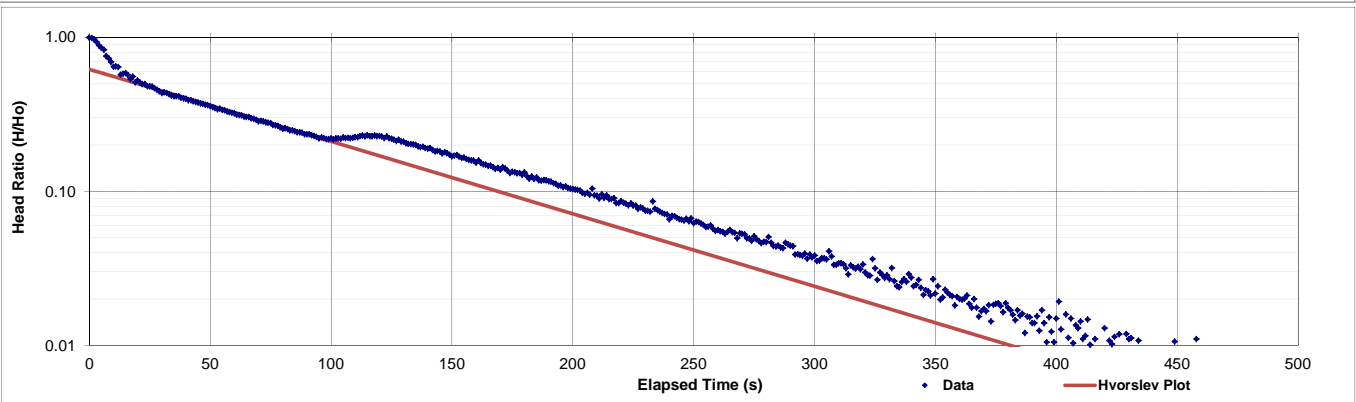
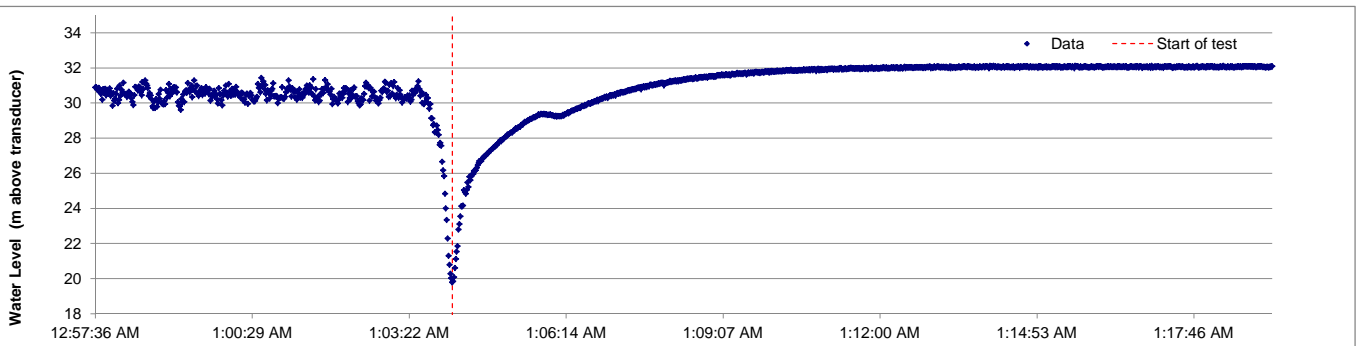
Monitoring Instrument Type Transducer
Slug Dimensions and Type Airlift Water Level Depression
Test Date 13-Jan-13

Drill-hole diameter, D 0.096 m
Effective diameter of drillrods, d_e 0.078 m
Top of test zone 295.9 m
Bottom of test zone 366.0 m
Test Length, L 70.1 m

Slug Injected, Time = 0 1:04:09 AM
Initial water level 32.1 m above transducer
Water level after slug 19.8 m above transducer
Change In Water Level, H_0 -12.3 m

Transmissivity, T $6E-05$ m²/s
Hydraulic Conductivity, K $9E-07$ m/s

Intercept 0.6



TEST COMMENTS:

Static water level was estimated from the post-test recovered water level.
Discharge rate at the end of the airlift test was 0.08 l/s.

M:\1\01\00457\06\A\Data\Task 206 - Phase 5 - Open Hydrogeological Site Investigation\Observation wells\Hydraulic Testing\Analysis\Reviewed\PW2 location\PH13-2-3 Hvorslev\PH13-2-3 Test 5 Hvorslev.xlsx\Hvorslev

0	21OCT13	ISSUED WITH REPORT	FTJ	CAS	KJB
REV	DATE	DESCRIPTION	PREP'D	CHK'D	APP'D

**NEW GOLD INC.
BLACKWATER GOLD PROJECT**

**HYDRAULIC CONDUCTIVITY CALCULATION
USING HVORSLEV (1951) METHOD**

Print 11/22/13 10:19

Project No. VA101-457/6
Field Technician MAS
Analyst MAS

Observation Well **PH13-2-3**
Test 6

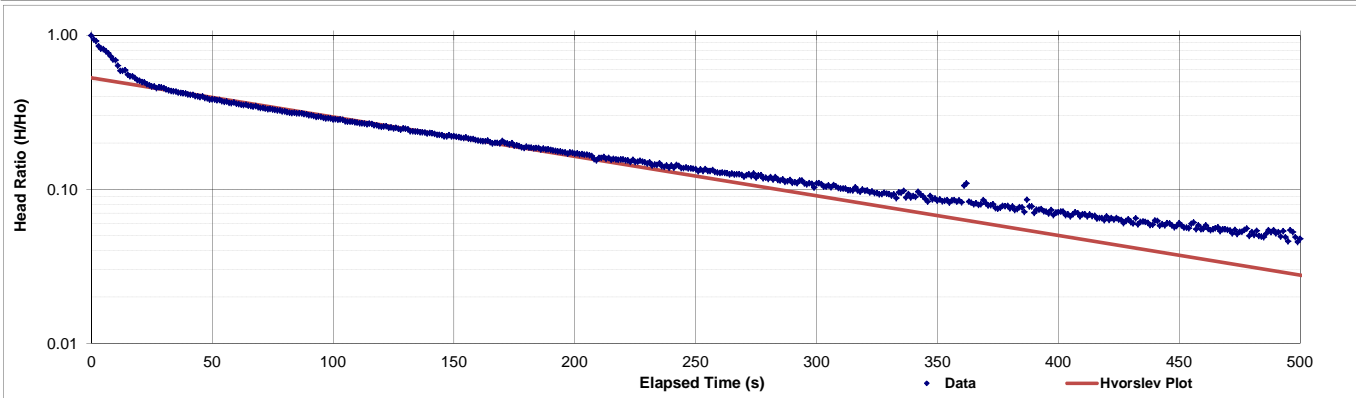
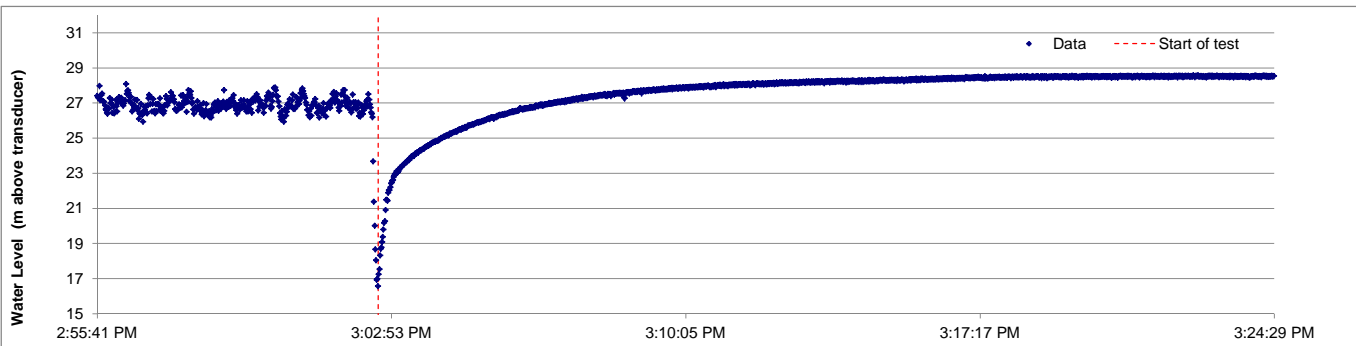
Monitoring Instrument Type Transducer
Slug Dimensions and Type Airlift Water Level Depression
Test Date 15-Jan-13

Drill-hole diameter, D 0.096 m
Effective diameter of drillrods, d_e 0.078 m
Top of test zone 366.0 m
Bottom of test zone 433.1 m
Test Length, L 67.1 m

Slug Injected, Time = 0 3:02:33 PM
Initial water level 28.6 m above transducer
Water level after slug 16.6 m above transducer
Change In Water Level, H_0 -12.0 m

Transmissivity, T $3E-05$ m²/s
Hydraulic Conductivity, K $5E-07$ m/s

Intercept 0.5



TEST COMMENTS:

Static water level was estimated from the post-test recovered water level.
Discharge rate at the end of the airlift test was 0.03 l/s.

M:\1\01\00457\06\A\Data\Task 206 - Phase 5 - Open Hydrogeological Site Investigation\Observation wells\Hydraulic Testing\Analysis\Reviewed\PW2 location\PH13-2-3 Hvorslev\PH13-2-3 Test 6 Hvorslev.xlsx\Hvorslev

0	21OCT13	ISSUED WITH REPORT	FTJ	CAS	KJB
REV	DATE	DESCRIPTION	PREP'D	CHK'D	APP'D

**NEW GOLD INC.
BLACKWATER GOLD PROJECT**

**HYDRAULIC CONDUCTIVITY CALCULATION
USING HVORSLEV (1951) METHOD**

Print 11/22/13 10:21

Project No. VA101-457/6
Field Technician DMW/MAS
Analyst MAS

Monitoring Well/Piezometer **PH12-3-1**
Test 1

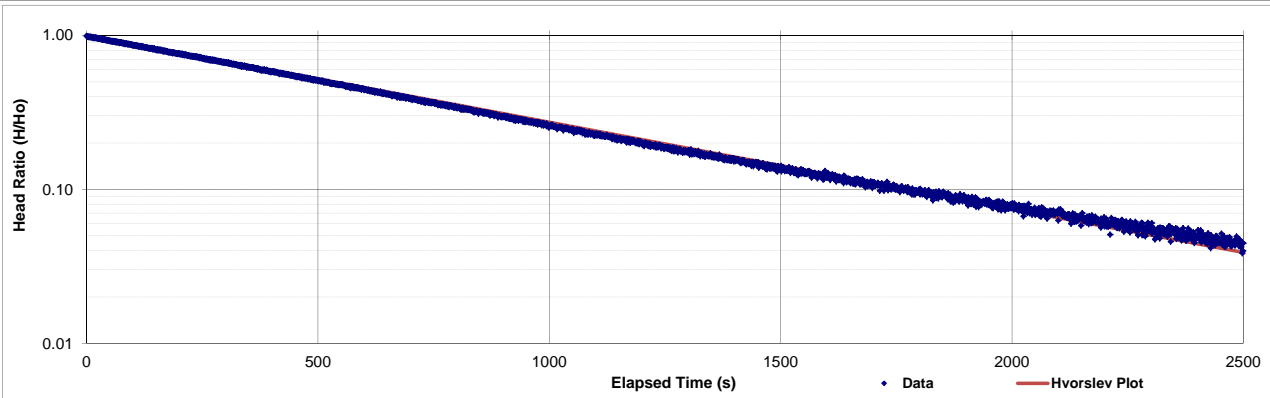
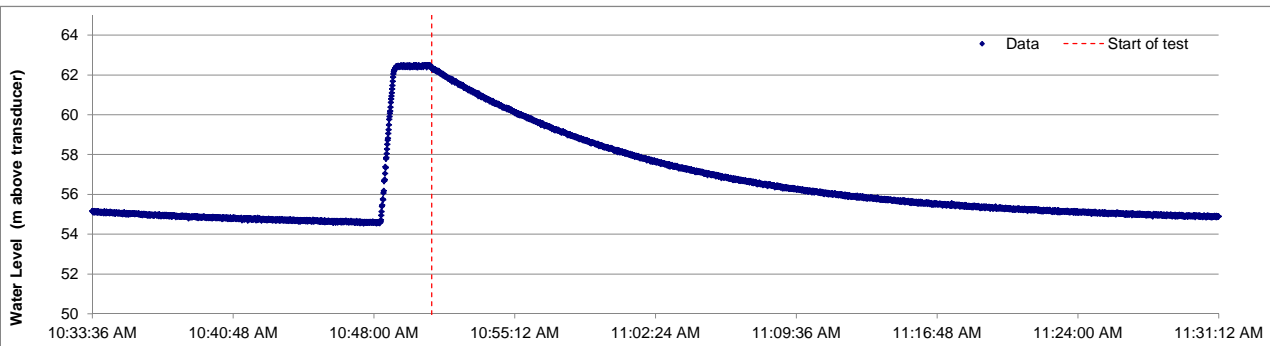
Monitoring Instrument Type Transducer
Slug Dimensions and Type 8.0 meters of HQ drillrods filled
Test Date 09-Nov-12

Drill-hole diameter, D 0.096 m
Effective diameter of drillrods, d_e 0.078 m
Top of test zone 53.6 m
Bottom of test zone 95.1 m
Test Length, L 41.5 m

Slug Injected, Time = 0 10:50:57 AM
Initial water level 54.5 m above transducer
Water level after slug 62.5 m above transducer
Change In Water Level, H_0 8.0 m

Transmissivity, T $7E-06$ m²/s
Hydraulic Conductivity, K $2E-07$ m/s

Intercept 1.0



TEST COMMENTS:

Initial water level estimate based on water level recovery before test

M:\1\01\00457\06\A\Data\Task 206 - Phase 5 - Open Hydrogeological Site Investigation\Observation wells\Hydraulic Testing\Analysis\Reviewed\PW3 location\PH12-3-1_FH and Lugeon\PH12-3-1 FH Test 1.xlsx\Hvorslev

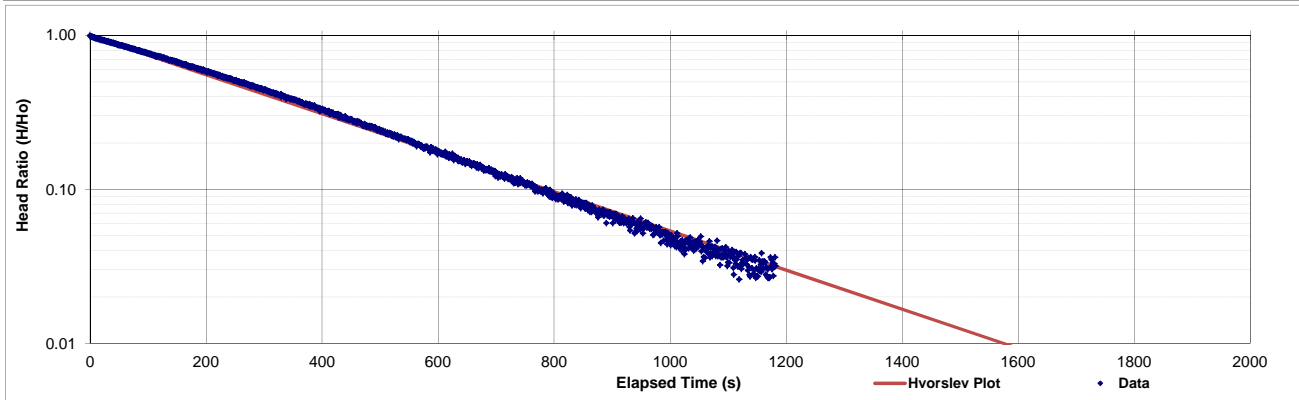
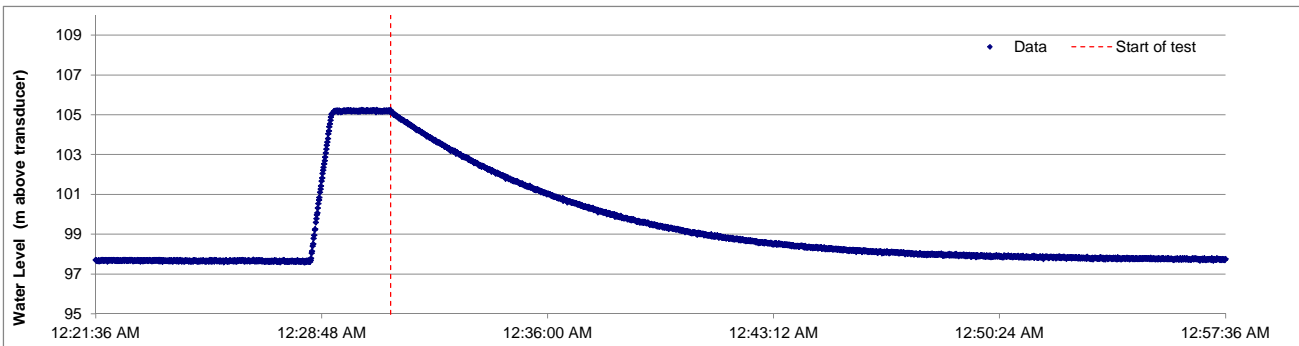
REV	DATE	DESCRIPTION	PREP'D	CHK'D	APP'D
0	21OCT13	ISSUED WITH REPORT	FTJ	CAS	KJB

**NEW GOLD INC.
BLACKWATER GOLD PROJECT**

**HYDRAULIC CONDUCTIVITY CALCULATION
USING HVORSLEV (1951) METHOD**

Print 11/22/13 10:26

Project No.	VA101-457/6	Monitoring Well/Piezometer	PH12-3-1
Field Technician	DMW/TS	Test 2	
Analyst	MAS		
Monitoring Instrument Type	Transducer		
Slug Dimensions and Type	7.5 meters of HQ drillrods filled		
Test Date	10-Nov-12		
Drill-hole diameter, D	0.096 m	Slug Injected, Time = 0	12:31:00 AM
Effective diameter of drillrods, d_e	0.078 m	Initial water level	97.7 m above transducer
Top of test zone	94.5 m	Water level after slug	105.2 m above transducer
Bottom of test zone	125.6 m	Change In Water Level, H_0	7.6 m
Test Length, L	31.1 m		
Transmissivity, T	1E-05 m ² /s		
Hydraulic Conductivity, K	5E-07 m/s	Intercept	1.0



TEST COMMENTS:

M:\1\01\00457\06\A\Data\Task 206 - Phase 5 - Open Hydrogeological Site Investigation\Observation wells\Hydraulic Testing\Analysis\Reviewed\PW3 location\PH12-3-1_FH and Lugeon\PH12-3-1 FH Test 2.xlsx\Hvorslev

0	21OCT13	ISSUED WITH REPORT	FTJ	CAS	KJS
REV	DATE	DESCRIPTION	PREP'D	CHK'D	APP'D

**NEW GOLD INC.
BLACKWATER GOLD PROJECT**

**HYDRAULIC CONDUCTIVITY CALCULATION
USING HVORSLEV (1951) METHOD**

Print 11/22/13 10:31

Project No. VA101-457/6
Field Technician TDS
Analyst MAS

Monitoring Well/Piezometer **PH12-3-1**
Test 3

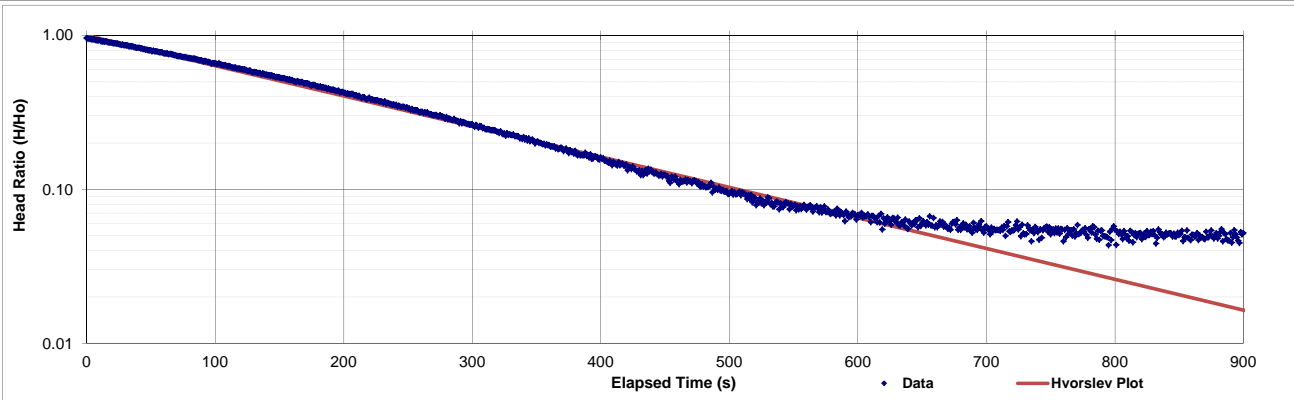
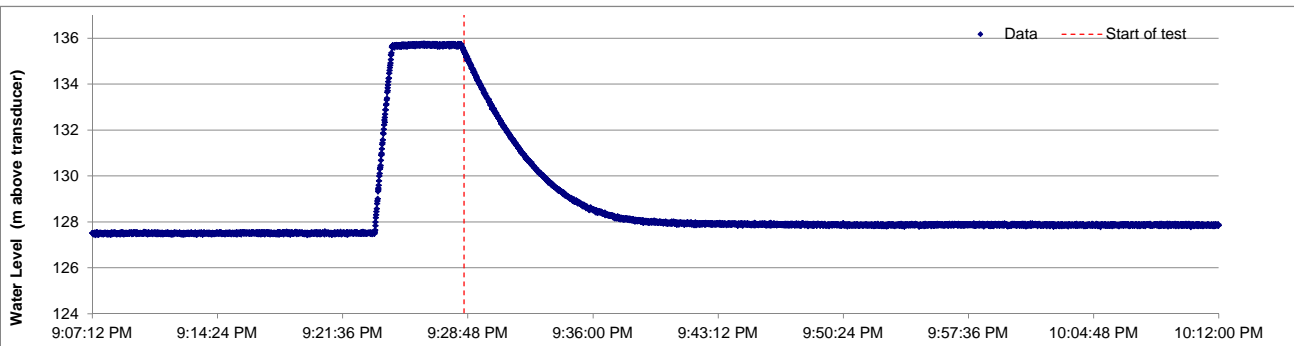
Monitoring Instrument Type Transducer
Slug Dimensions and Type 8.2 meters of HQ drillrods filled
Test Date 10-Nov-12

Drill-hole diameter, D 0.096 m
Effective diameter of drillrods, d_e 0.078 m
Top of test zone 125.0 m
Bottom of test zone 156.0 m
Test Length, L 31.1 m

Slug Injected, Time = 0 9:28:35 PM
Initial water level 127.5 m above transducer
Water level after slug 135.8 m above transducer
Change In Water Level, H_0 8.3 m

Transmissivity, T $2E-05$ m²/s
Hydraulic Conductivity, K $7E-07$ m/s

Intercept 1.0



TEST COMMENTS:

Static water level was estimated from the pre-test water level.

M:\1\01\00457\06\A\Data\Task 206 - Phase 5 - Open Hydrogeological Site Investigation\Observation wells\Hydraulic Testing\Analysis\Reviewed\PW3 location\PH12-3-1_FH and Lugeon\PH12-3-1 FH Test 3.xlsx\Hvorslev

REV	DATE	DESCRIPTION	PREP'D	CHK'D	APP'D
0	21OCT13	ISSUED WITH REPORT	FTJ	CAS	KJB

**NEW GOLD INC.
BLACKWATER GOLD PROJECT**

**HYDRAULIC CONDUCTIVITY CALCULATION
USING HVORSLEV (1951) METHOD**

Print 11/22/13 10:33

Project No. VA101-457/6
Field Technician MAS
Analyst MAS

Monitoring Well/Piezometer **PH12-3-1**
Test 4

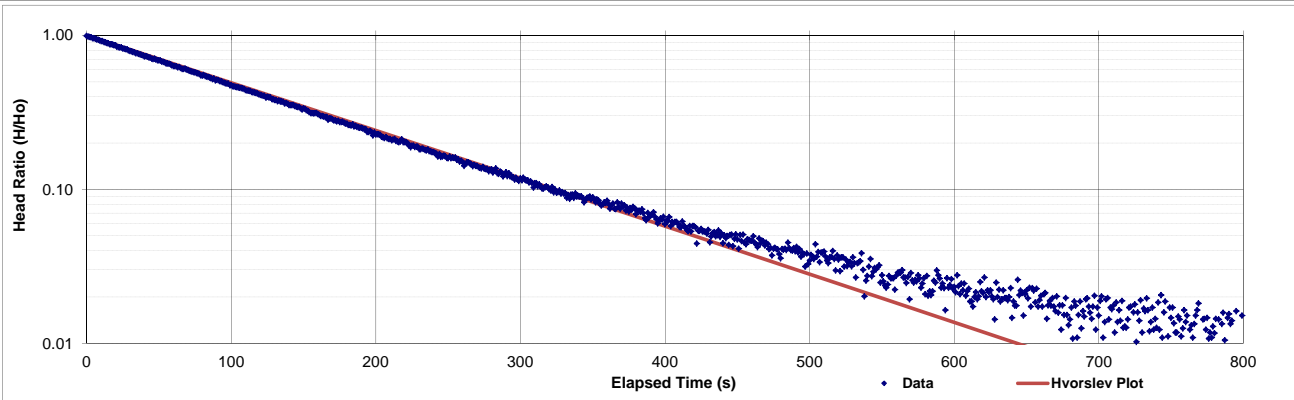
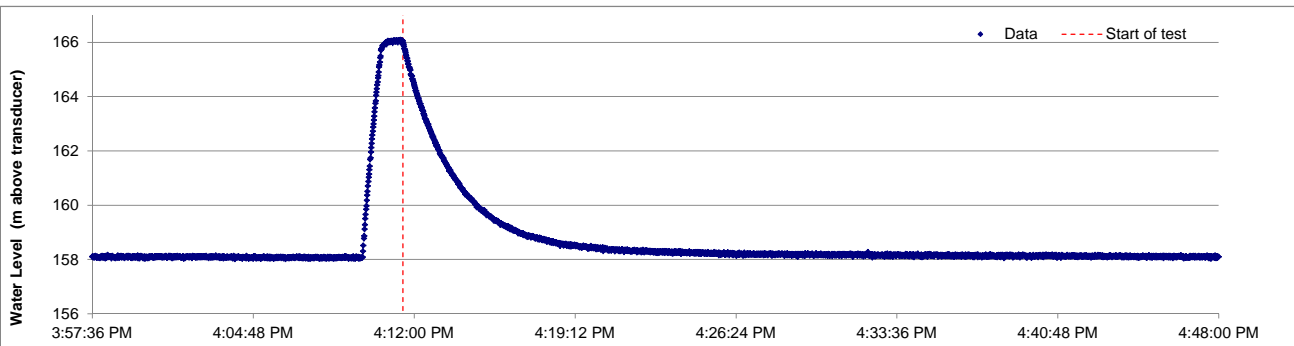
Monitoring Instrument Type Transducer
Slug Dimensions and Type 8.13 meters of HQ drillrods filled
Test Date 11-Nov-12

Drill-hole diameter, D 0.096 m
Effective diameter of drillrods, d_e 0.078 m
Top of test zone 154.2 m
Bottom of test zone 186.5 m
Test Length, L 32.3 m

Slug Injected, Time = 0 4:11:30 PM
Initial water level 158.2 m above transducer
Water level after slug 166.1 m above transducer
Change In Water Level, H_0 7.9 m

Transmissivity, T $3E-05$ m²/s
Hydraulic Conductivity, K $1E-06$ m/s

Intercept 1.0



TEST COMMENTS:

M:\1\01\00457\06\A\Data\Task 206 - Phase 5 - Open Hydrogeological Site Investigation\Observation wells\Hydraulic Testing\Analysis\Reviewed\PW3 location\PH12-3-1_FH and Lugeon\PH12-3-1 FH Test 4.xlsx\Hvorslev

REV	DATE	DESCRIPTION	PREP'D	CHK'D	APP'D
0	21OCT13	ISSUED WITH REPORT	FTJ	CAS	KJB

**NEW GOLD INC.
BLACKWATER GOLD PROJECT**

**HYDRAULIC CONDUCTIVITY CALCULATION
USING HVORSLEV (1951) METHOD**

Print 11/25/13 14:12

Project No. VA101-457/6
Field Technician TDS/MAS
Analyst MAS

Monitoring Well/Piezometer **PH12-3-1**
Test 5

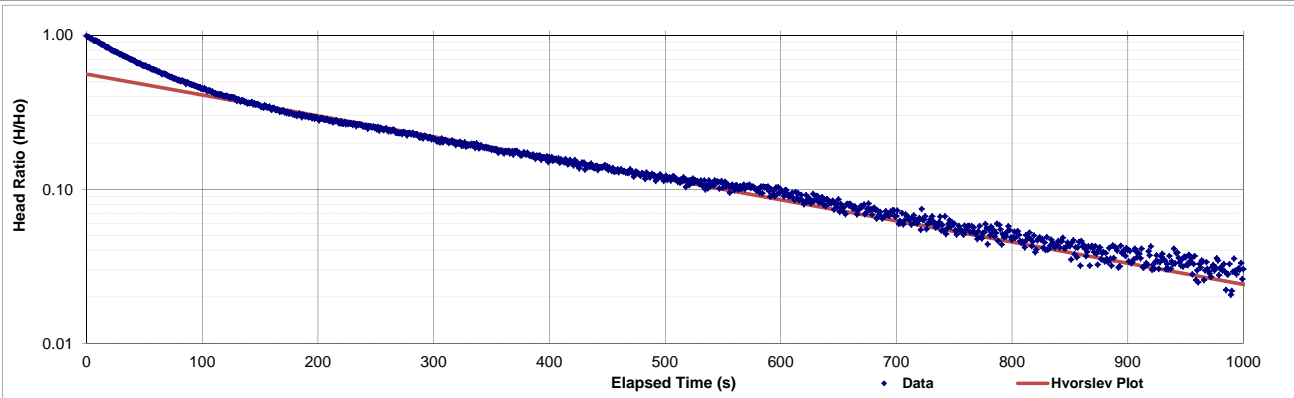
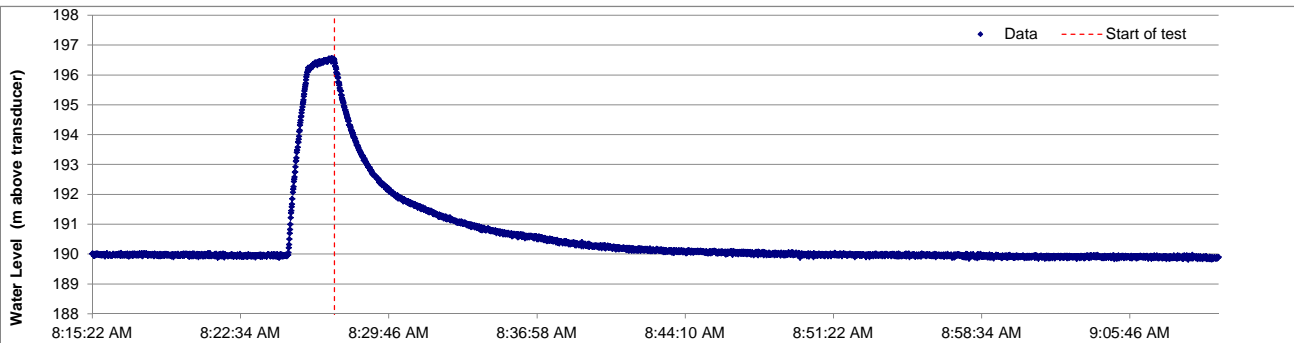
Monitoring Instrument Type Transducer
Slug Dimensions and Type 6.8 meters of HQ drillrods filled
Test Date 12-Nov-12

Drill-hole diameter, D 0.096 m
Effective diameter of drillrods, d_e 0.078 m
Top of test zone 185.9 m
Bottom of test zone 217.0 m
Test Length, L 31.1 m

Slug Injected, Time = 0 8:27:07 AM
Initial water level 189.9 m above transducer
Water level after slug 196.6 m above transducer
Change In Water Level, H_0 6.7 m

Transmissivity, T $2E-05$ m²/s
Hydraulic Conductivity, K $5E-07$ m/s

Intercept 0.6



TEST COMMENTS:

M:\1\01\00457\06\A\Data\Task 206 - Phase 5 - Open Hydrogeological Site Investigation\Observation wells\Hydraulic Testing\Analysis\Reviewed\PW3 location\PH12-3-1_FH and Lugeon\PH12-3-1 FH Test 5.xlsx\Hvorslev

A	21OCT13	ISSUED WITH REPORT	FTJ	-	-
REV	DATE	DESCRIPTION	PREP'D	CHK'D	APP'D

**NEW GOLD INC.
BLACKWATER GOLD PROJECT**

**HYDRAULIC CONDUCTIVITY CALCULATION
USING HVORSLEV (1951) METHOD**

Print 11/25/13 13:49

Project No. VA101-457/6
Field Technician TDS
Analyst MAS

Monitoring Well/Piezometer **PH12-3-1**
Test 6

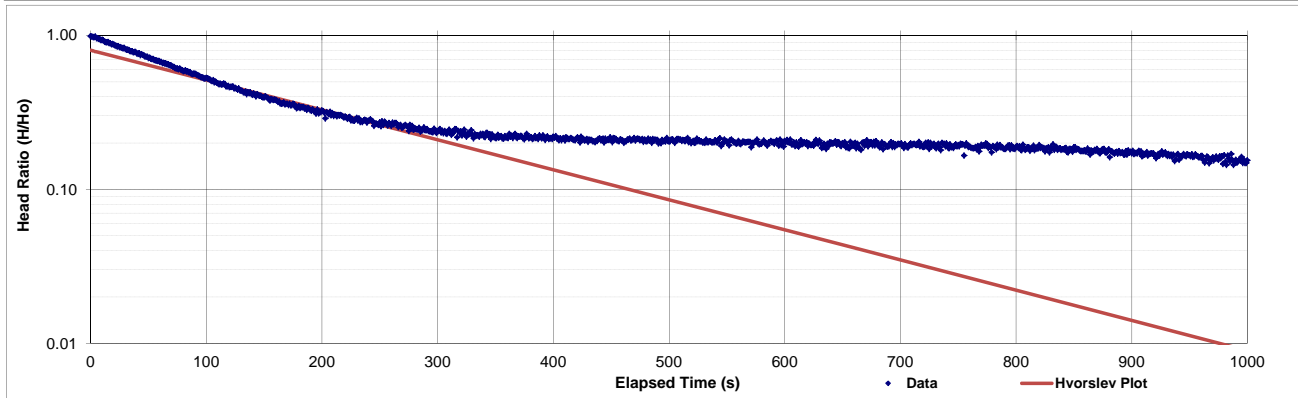
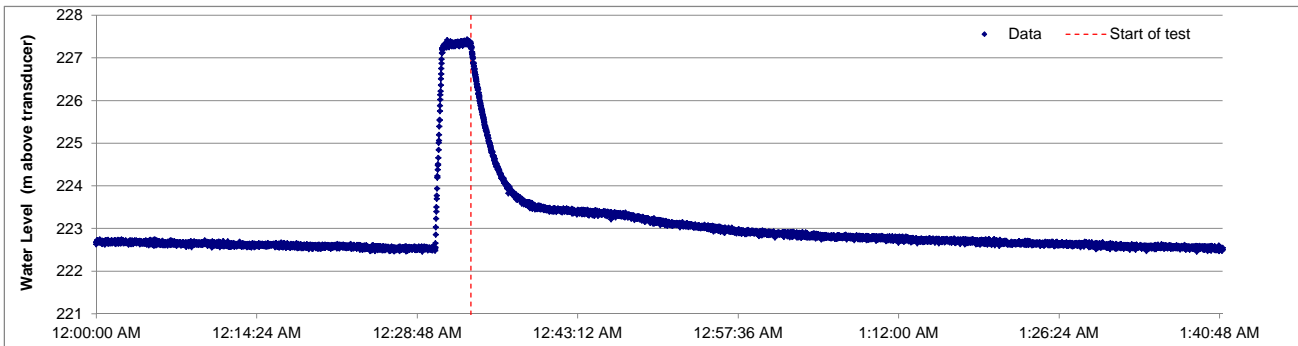
Monitoring Instrument Type Transducer
Slug Dimensions and Type 4.85 meters of HQ drillrods filled
Test Date 13-Nov-12

Drill-hole diameter, D 0.096 m
Effective diameter of drillrods, d_e 0.078 m
Top of test zone 216.4 m
Bottom of test zone 247.5 m
Test Length, L 31.1 m

Slug Injected, Time = 0 12:33:37 AM
Initial water level 222.4 m above transducer
Water level after slug 227.3 m above transducer
Change In Water Level, H_0 4.9 m

Transmissivity, T 2E-05 m²/s
Hydraulic Conductivity, K 7E-07 m/s

Intercept 0.8



TEST COMMENTS:

The initial water level was estimated from the water level recovery prior to the test.

M:\1\01\00457\06\A\Data\Task 206 - Phase 5 - Open Hydrogeological Site Investigation\Observation wells\Hydraulic Testing\Analysis\Reviewed\PW3 location\PH12-3-1_FH and Lugeon\PH12-3-1 FH Test 6.xlsx\Hvorslev

REV	DATE	DESCRIPTION	PREP'D	CHK'D	APP'D
0	21OCT13	ISSUED WITH REPORT	FTJ	CAS	KJB

**NEW GOLD INC.
BLACKWATER GOLD PROJECT**

**HYDRAULIC CONDUCTIVITY CALCULATION
USING HVORSLEV (1951) METHOD**

Print 11/25/13 13:50

Project No. VA101-457/6
Field Technician TDS/MAS
Analyst MAS

Monitoring Well/Piezometer **PH12-3-1**
Test 7

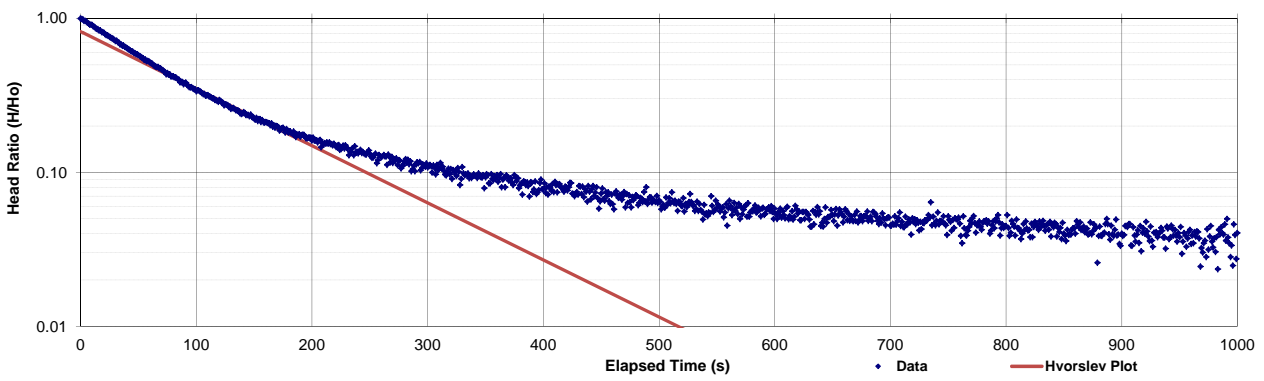
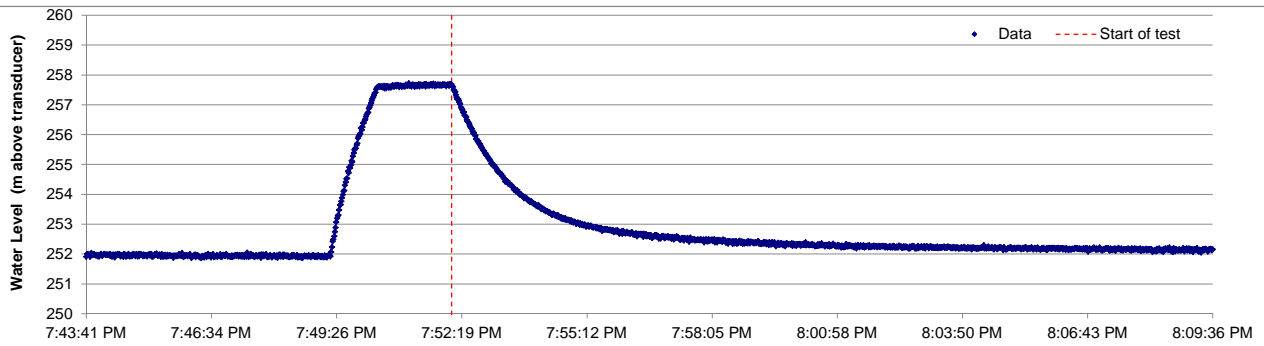
Monitoring Instrument Type Transducer
Slug Dimensions and Type 5.76 meters of HQ drillrods filled
Test Date 13-Nov-12

Drill-hole diameter, D 0.096 m
Effective diameter of drillrods, d_e 0.078 m
Top of test zone 245.7 m
Bottom of test zone 278.0 m
Test Length, L 32.3 m

Slug Injected, Time = 0 7:52:05 PM
Initial water level 251.9 m above transducer
Water level after slug 257.7 m above transducer
Change In Water Level, H_0 5.8 m

Transmissivity, T 4E-05 m²/s
Hydraulic Conductivity, K 1E-06 m/s

Intercept 0.8



TEST COMMENTS:

M:\1\01\00457\06\A\Data\Task 206 - Phase 5 - Open Hydrogeological Site Investigation\Observation wells\Hydraulic Testing\Analysis\Reviewed\PW3 location\PH12-3-1_FH and Lugeon\PH12-3-1 FH Test 7.xlsx\Hvorslev

A	21OCT13	ISSUED WITH REPORT	MAS	CAS	KJB
REV	DATE	DESCRIPTION	PREP'D	CHK'D	APP'D

**NEW GOLD INC.
BLACKWATER GOLD PROJECT**

**AIRLIFT PUMPING RECOVERY TEST
USING THEIS METHOD (1935)**

25/11/2013 14:21

Project No. VA101-457/6
Field Technician MAS
Analyst CM/MAS
Test Date 26-Nov-12

Drill-hole **PH12-3-2**
Test 1

Drill-hole Diameter 0.096 m (HQ)
Stinger Diameter 0.019 m
Top of Test Zone 58.5 mbgs
Bottom of Test Zone 119.5 mbgs
Test Length 61.0 m
Stinger Depth 46.0 mbgs

Start Airlifting 8:38 AM
End Airlifting 8:52 AM

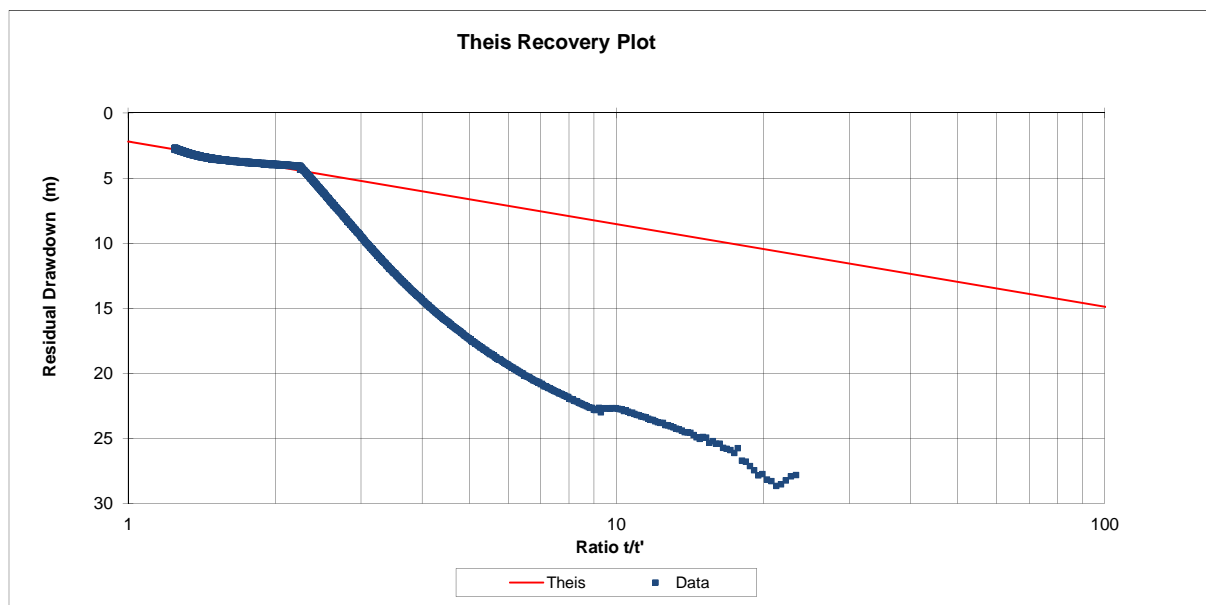
Final Water Level 53.0 m above transducer
Initial Water Level 28.0 m above transducer
Drawdown 25.0 m

Well No.	Description	Distance (m)	Start (s)	Pumping Rate (m ³ /s)
1	Start Airlifting	0.05	0	3.3E-04
1	End Airlifting	0.05	870	-3.3E-04

Air Compressor Rating 40 cfm
Air Pressure During Test 35 psi

Hydraulic Conductivity, K 2E-07 m/s
Transmissivity, T 1E-05 m²/s

Storativity, S 1E-04
Offset 0.8



TEST COMMENTS:

M:\1\01\00457\06\A\Data\Task 206 - Phase 5 - Open Hydrogeological Site Investigation\Observation wells\Hydraulic Testing\Analysis\Reviewed\PW3 location\PH12-3-2_Airlift recovery\PH12-3-2 Airlift 1 192'-392'.xlsx]Theis Recovery Analysis

REV	DATE	DESCRIPTION	PREP'D	CHK'D	APP'D
0	21OCT13	ISSUED WITH REPORT	CMMAS	CAS	KJB

**NEW GOLD INC.
BLACKWATER GOLD PROJECT**

**HYDRAULIC CONDUCTIVITY CALCULATION
USING HVORSLEV (1951) METHOD**

Print 11/25/13 14:31

Project No. VA101-457/6
Field Technician LEP
Analyst FTJ

Observation Well **PH12-3-2**
Test 2

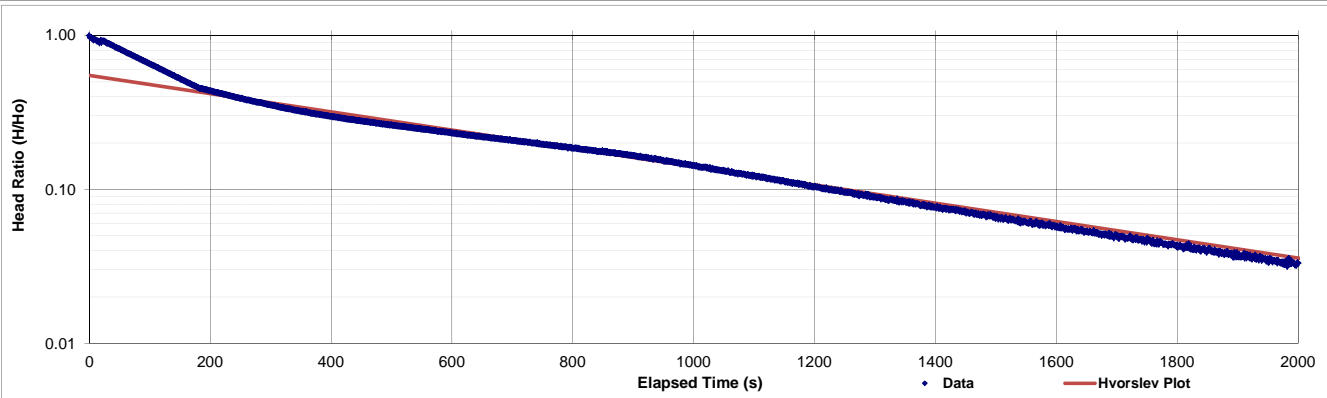
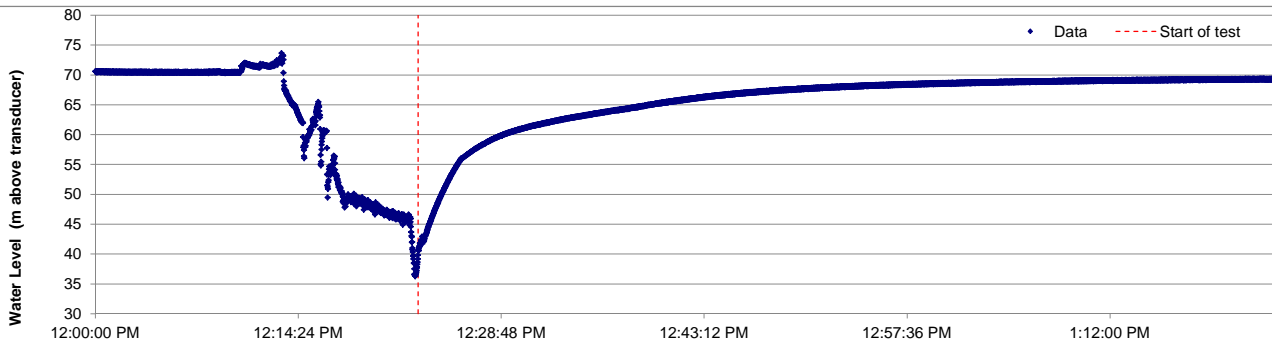
Monitoring Instrument Type Transducer
Slug Dimensions and Type Airlift Water Level Depression
Test Date 28-Nov-12

Drill-hole diameter, D 0.096 m
Effective diameter of drillrods, d_e 0.078 m
Top of test zone 118.0 m
Bottom of test zone 194.2 m
Test Length, L 76.2 m

Slug Injected, Time = 0 12:22:54 PM
Initial water level 69.3 m above transducer
Water level after slug 39.8 m above transducer
Change In Water Level, H_0 -29.5 m

Transmissivity, T $8E-06$ m²/s
Hydraulic Conductivity, K $1E-07$ m/s

Intercept 0.6



TEST COMMENTS:

Discharge rate at end of airlifting test was 0.7L/s.

M:\1\01\00457\06\A\Data\Task 206 - Phase 5 - Open Hydrogeological Site Investigation\Observation wells\Hydraulic Testing\Analysis\Reviewed\PW3 location\PH12-3-2_Airlift recovery\PH12-3-2 Airlift 2 387 637.xlsx\Hvorslev

REV	DATE	ISSUED WITH REPORT	DESCRIPTION	PREP'D	CHK'D	APP'D
A	21OCT13	ISSUED WITH REPORT		FTJ	CAS	KJB

**NEW GOLD INC.
BLACKWATER GOLD PROJECT**

**HYDRAULIC CONDUCTIVITY CALCULATION
USING HVORSLEV (1951) METHOD**

Print 11/25/13 9:54

Project No. VA101-457/6
Field Technician MAS
Analyst FTJ

Monitoring Well/Piezometer **PH12-3-2**
Test 3

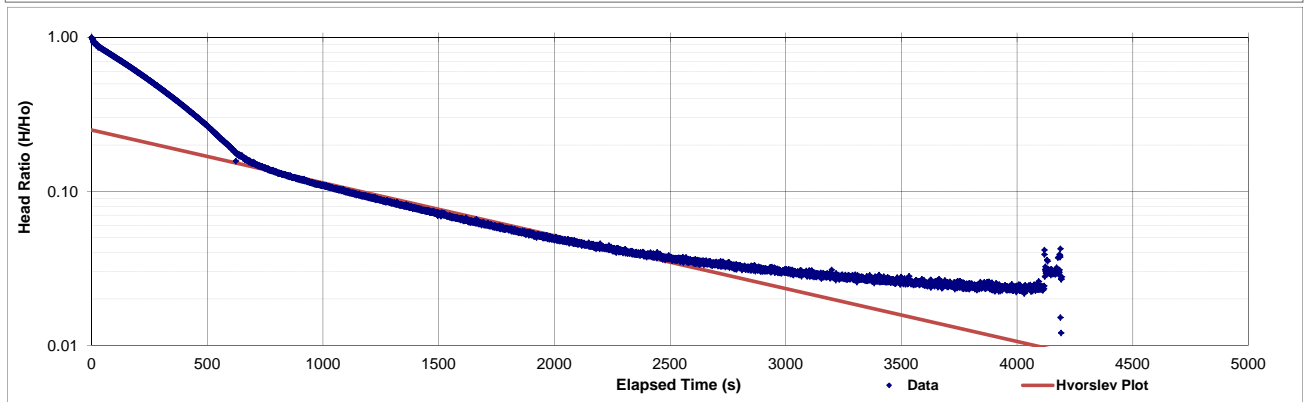
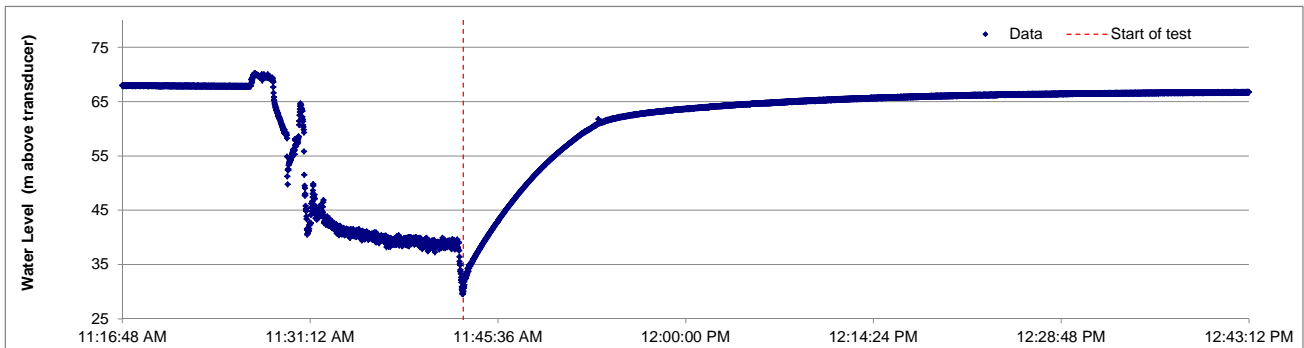
Monitoring Instrument Type Transducer
Slug Dimensions and Type Airlift Waterlevel Depression
Test Date 29-Nov-13

Drill-hole diameter, D 0.096 m
Effective diameter of drillrods, d_e 0.078 m
Top of test zone 192.6 m
Bottom of test zone 253.6 m
Test Length, L 61.0 m

Slug Injected, Time = 0 11:42:56 AM
Initial water level 67.7 m above transducer
Water level after slug 29.9 m above transducer
Change In Water Level, H_0 -37.8 m

Transmissivity, T 4E-06 m²/s
Hydraulic Conductivity, K 7E-08 m/s

Intercept 0.3



TEST COMMENTS:

Discharge rate at the end of the airlift test was 0.3 l/s.

M:\1\01\00457\06\A\Data\Task 206 - Phase 5 - Open Hydrogeological Site Investigation\Observation wells\Hydraulic Testing\Analysis\Reviewed\PW3 location\PH12-3-2_Airlift recovery\PH12-3-2_Airlift 3 632'-832'.xlsx\Hvorslev

REV	DATE	DESCRIPTION	PREP'D	CHK'D	APP'D
0	21OCT13	ISSUED WITH REPORT	MAS	CAS	KJB

**NEW GOLD INC.
BLACKWATER GOLD PROJECT**

**AIRLIFT PUMPING RECOVERY TEST
USING THEIS METHOD (1935)**

25/11/2013 14:33

Project No. VA101-457/6
Field Technician MAS
Analyst CM
Test Date 30-Nov-12
Drill-hole Diameter 0.096 m (HQ)
Stinger Diameter 0.019 m
Top of Test Zone 253.6 mbgs
Bottom of Test Zone 302.4 mbgs
Test Length 48.8 m
Stinger Depth 61.6 mbgs

Drill-hole **PH12-3-2**
Test 4

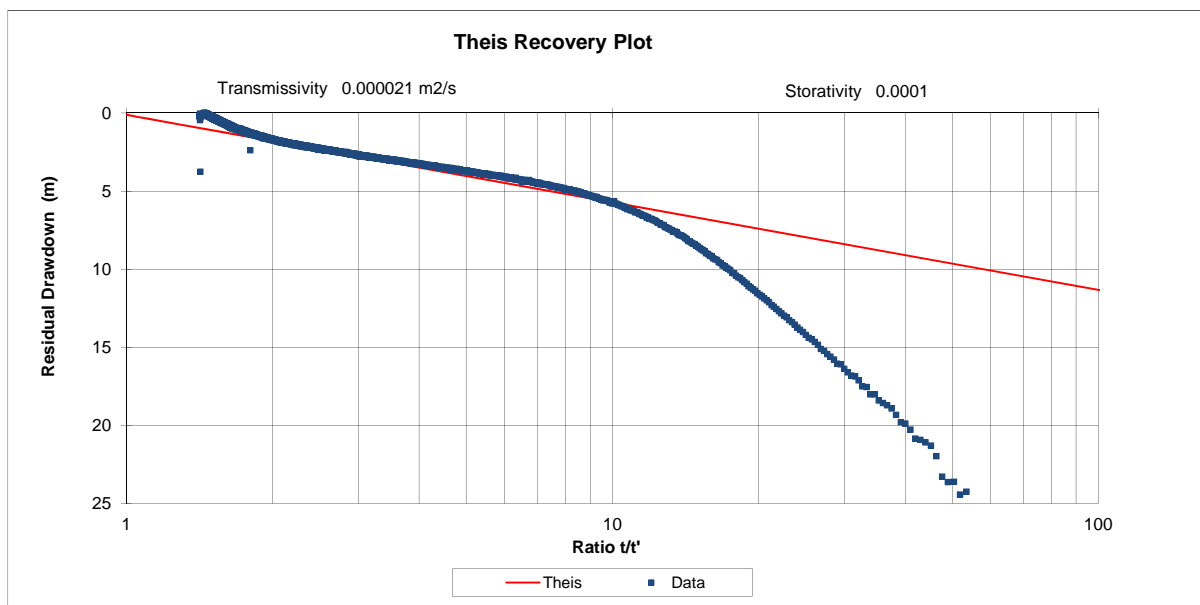
Start Airlifting 12:14 PM Final Water Level 62.9 m above transducer
End Airlifting 12:42 PM Initial Water Level 46.2 m above transducer
Drawdown 16.7 m

Well No.	Description	Distance (m)	Start (s)	Pumping Rate (m ³ /s)
1	Start Airlifting	0.05	0	6.42E-04
1	End Airlifting	0.05	1,680	-6.42E-04

Air Compressor Rating 400 cfm
Air Pressure During Test 65 psi

Hydraulic Conductivity, K 4E-07 m/s
Transmissivity, T 2E-05 m²/s

Storativity, S 1E-04
Offset -2.2



TEST COMMENTS:

M:\1\01\00457\06\A\Data\Task 206 - Phase 5 - Open Hydrogeological Site Investigation\Observation wells\Hydraulic Testing\Analysis\Reviewed\PW3 location\PH12-3-2_Airlift recovery\PH12-3-2 Airlift 4 832'-992'.xlsx]Theis Recovery Analysis

REV	DATE	DESCRIPTION	PREP'D	CHK'D	APP'D
0	21OCT13	ISSUED WITH REPORT	CM	CAS	KJB

**NEW GOLD INC.
BLACKWATER GOLD PROJECT**

**HYDRAULIC CONDUCTIVITY CALCULATION
USING HVORSLEV (1951) METHOD**

Print 12/04/13 17:02

Project No. VA101-457/6
Field Technician TDS
Analyst MAS

Monitoring Well/Piezometer **PH12-3-3**
Test 1

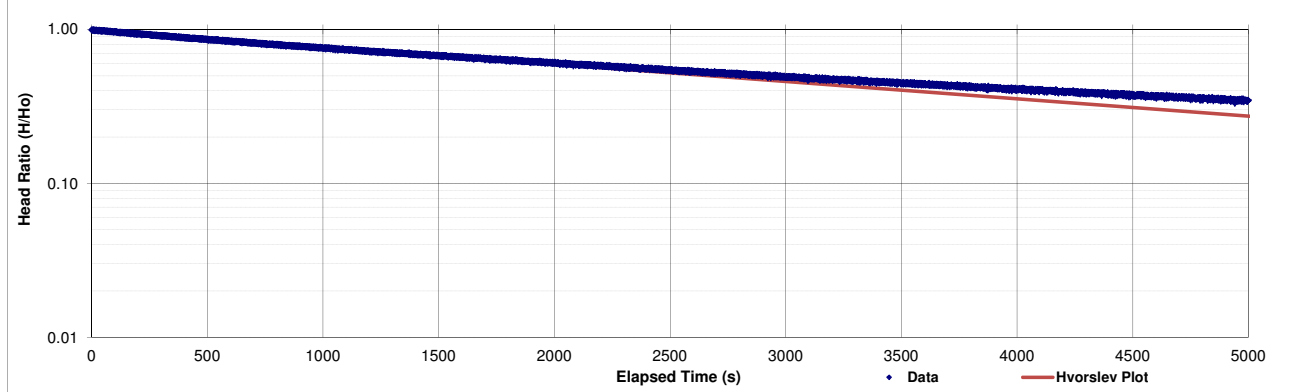
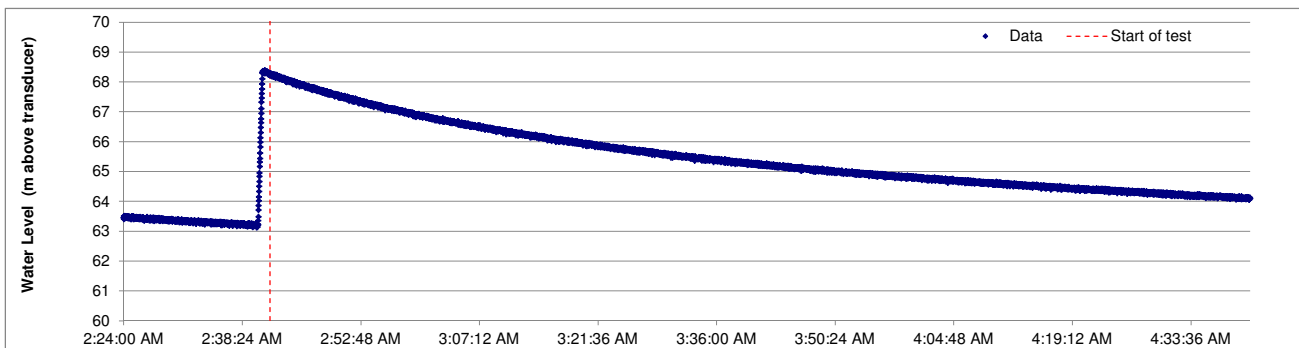
Monitoring Instrument Type Transducer
Slug Dimensions and Type 5.1 meters of HQ drillrods filled
Test Date 19-Nov-12

Drill-hole diameter, D 0.096 m
Effective diameter of drillrods, d_e 0.078 m
Top of test zone 56.7 m
Bottom of test zone 84.4 m
Test Length, L 27.7 m

Slug Injected, Time = 0 2:41:45 AM
Initial water level 62.8 m above transducer
Water level after slug 68.3 m above transducer
Change In Water Level, H_0 5.5 m

Transmissivity, T $1E-06$ m²/s
Hydraulic Conductivity, K $5E-08$ m/s

Intercept 1.0



TEST COMMENTS:

Initial water level estimated from water level recovery prior to falling head test.

C:\Users\slabash\Desktop\Rev[PH12-3-3 FH Test 1 186'-277'.xlsx]Hvorslev

REV	DATE	ISSUED WITH REPORT DESCRIPTION	MAS PREP'D	CAS CHK'D	KJB APP'D
0	21OCT13	ISSUED WITH REPORT			

**NEW GOLD INC.
BLACKWATER GOLD PROJECT**

**HYDRAULIC CONDUCTIVITY CALCULATION
USING HVORSLEV (1951) METHOD**

Print 12/04/13 17:02

Project No. VA101-457/6
Field Technician TDS
Analyst MAS

Monitoring Well/Piezometer **PH12-3-3**
Test 2

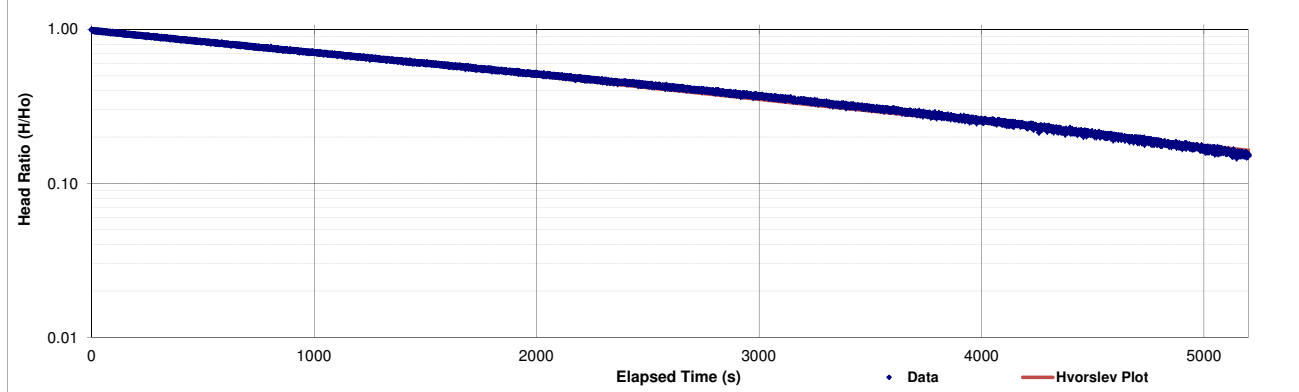
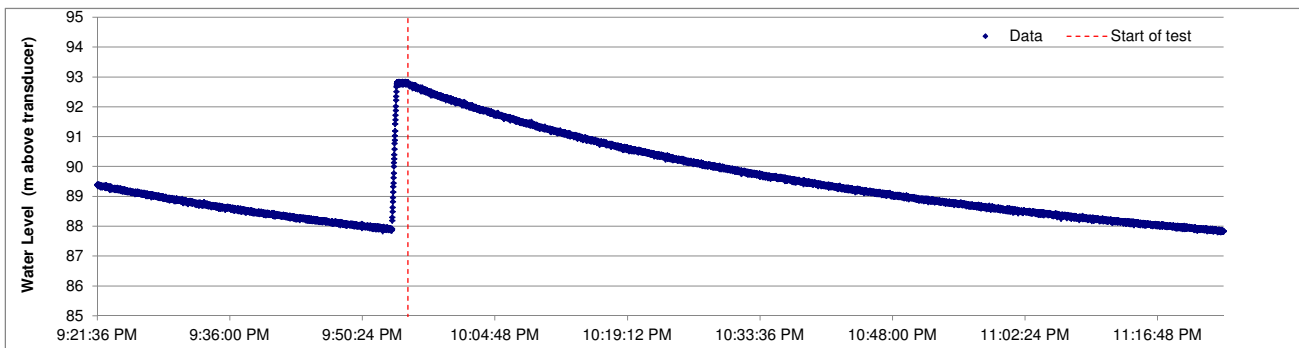
Monitoring Instrument Type Transducer
Slug Dimensions and Type 4.8 meters of HQ drillrods filled
Test Date 19-Nov-12

Drill-hole diameter, D 0.096 m
Effective diameter of drillrods, d_e 0.078 m
Top of test zone 82.6 m
Bottom of test zone 114.9 m
Test Length, L 32.3 m

Slug Injected, Time = 0 9:55:21 PM
Initial water level 87.0 m above transducer
Water level after slug 92.8 m above transducer
Change In Water Level, H_0 5.8 m

Transmissivity, T 2E-06 m²/s
Hydraulic Conductivity, K 5E-08 m/s

Intercept 1.0



TEST COMMENTS:

Initial water level was estimated from water level recovery prior to falling head test.

C:\Users\slabash\Desktop\Rev[PH12-3-3 FH Test 2 271'-377'.xlsx]Hvorslev

REV	DATE	DESCRIPTION	PREP'D	CHK'D	APP'D
0	21OCT13	ISSUED WITH REPORT	FTJ	CAS	KJB

**NEW GOLD INC.
BLACKWATER GOLD PROJECT**

**HYDRAULIC CONDUCTIVITY CALCULATION
USING HVORSLEV (1951) METHOD**

Print 11/22/13 11:07

Project No. VA101-457/6
Field Technician MAS
Analyst MAS

Monitoring Well/Piezometer **PH12-3-3**
Test 3

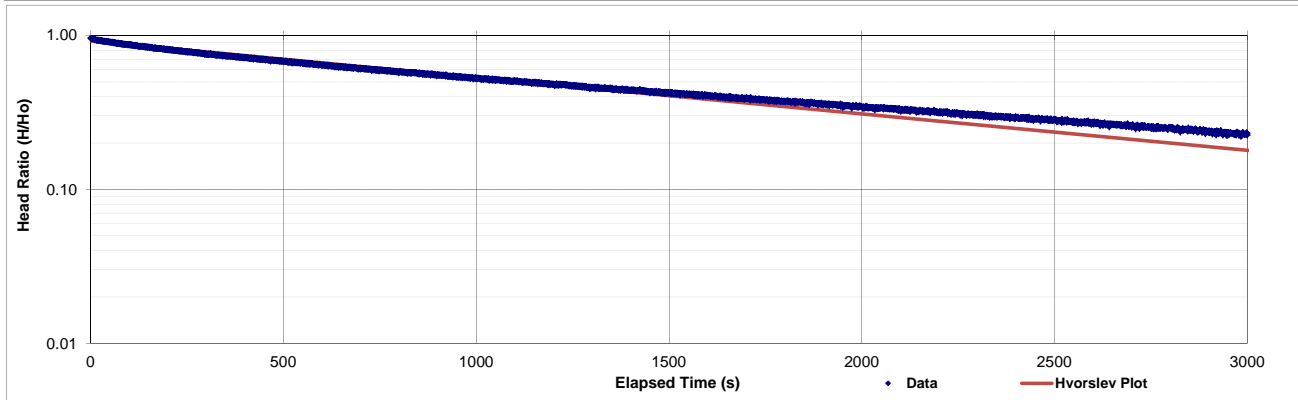
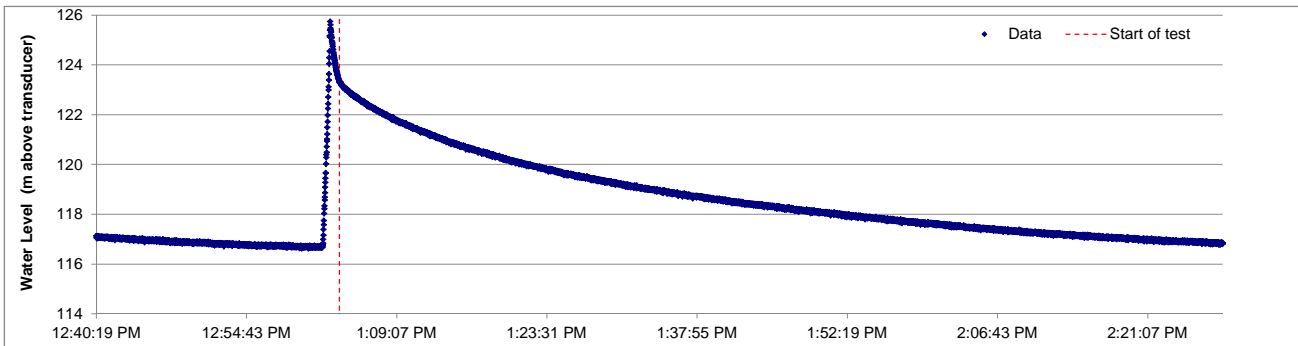
Monitoring Instrument Type Transducer
Slug Dimensions and Type 57.7 litres of water
Test Date 20-Nov-12

Drill-hole diameter, D 0.096 m
Effective diameter of drillrods, d_e 0.078 m
Top of test zone 113.2 m
Bottom of test zone 146.9 m
Test Length, L 33.7 m

Slug Injected, Time = 0 1:03:37 PM
Initial water level 116.2 m above transducer
Water level after slug 123.7 m above transducer
Change In Water Level, H_0 7.5 m

Transmissivity, T $3E-06$ m²/s
Hydraulic Conductivity, K $8E-08$ m/s

Intercept 0.9



TEST COMMENTS:

Initial water level for hydraulic analysis has been estimated from water level recovery prior to falling head test.
The volume of the injected slug of water was measured with a flow meter.

M:\1\01\00457\06\A\Data\Task 206 - Phase 5 - Open Hydrogeological Site Investigation\Observation wells\Hydraulic Testing\Analysis\Reviewed\PW3 location\PH12-3-3_FH\PH12-3-3 FH Test 3 371'-482'.xlsx\Hvorslev

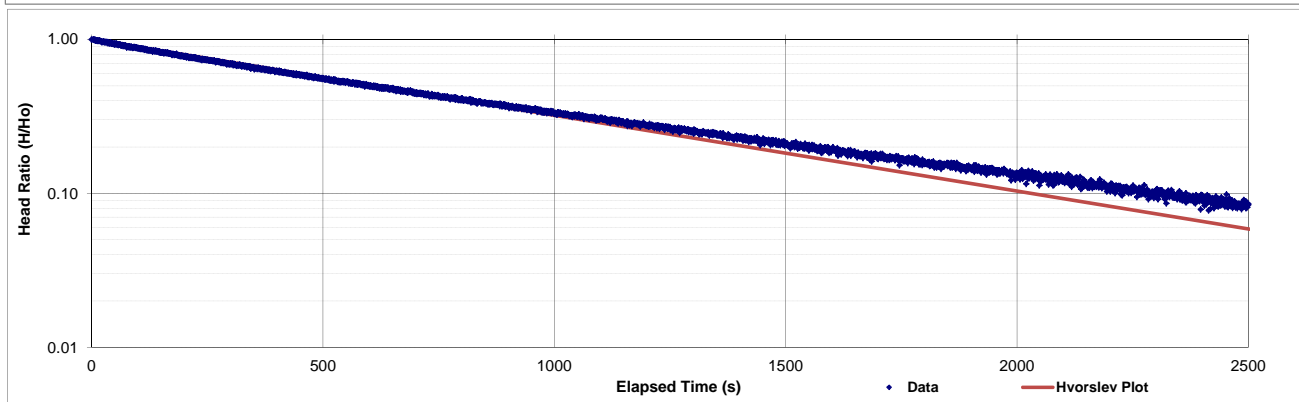
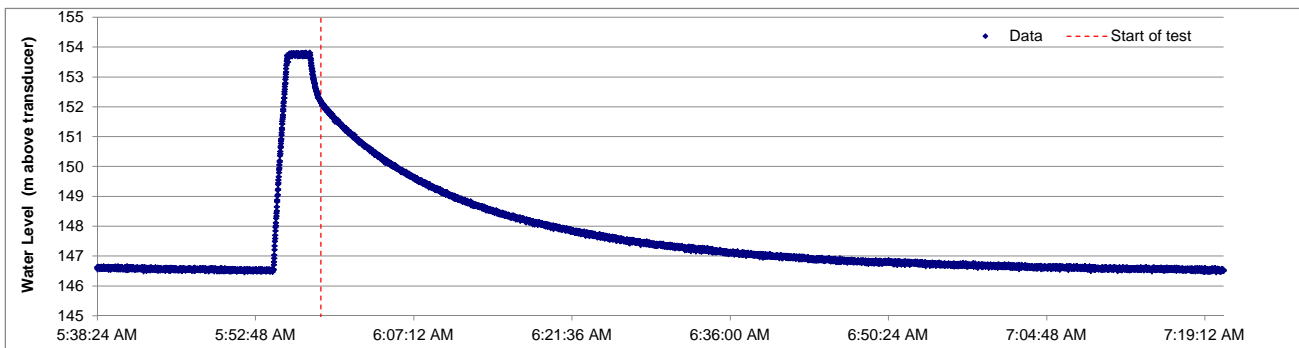
REV	DATE	DESCRIPTION	PREP'D	CHK'D	APP'D
0	21OCT13	ISSUED WITH REPORT	FTJ	CAS	KJB

**NEW GOLD INC.
BLACKWATER GOLD PROJECT**

**HYDRAULIC CONDUCTIVITY CALCULATION
USING HVORSLEV (1951) METHOD**

Print 11/22/13 11:14

Project No.	VA101-457/6	Monitoring Well/Piezometer	PH12-3-3
Field Technician	TDS	Test 4	
Analyst	MAS		
Monitoring Instrument Type	Transducer		
Slug Dimensions and Type	49.0 litres of water		
Test Date	21-Nov-12		
Drill-hole diameter, D	0.096 m	Slug Injected, Time = 0	5:58:45 AM
Effective diameter of drillrods, d_e	0.078 m	Initial water level	146.5 m above transducer
Top of test zone	142.0 m	Water level after slug	152.1 m above transducer
Bottom of test zone	177.4 m	Change In Water Level, H_0	5.6 m
Test Length, L	35.4 m		
Transmissivity, T	6E-06 m ² /s	Intercept	1.0
Hydraulic Conductivity, K	2E-07 m/s		



TEST COMMENTS:

The volume of the injected slug of water was measured with a flow meter.

M:\1\01\00457\06\A\Data\Task 206 - Phase 5 - Open Hydrogeological Site Investigation\Observation wells\Hydraulic Testing\Analysis\Reviewed\PW3 location\PH12-3-3_FH\PH12-3-3 FH Test 4 466'-582'.xlsx\Hvorslev

REV	DATE	DESCRIPTION	PREP'D	CHK'D	APP'D
0	21OCT13	ISSUED WITH REPORT	FTJ	CAS	KJB

**NEW GOLD INC.
BLACKWATER GOLD PROJECT**

**HYDRAULIC CONDUCTIVITY CALCULATION
USING HVORSLEV (1951) METHOD**

Print 11/22/13 11:23

Project No. VA101-457/6
Field Technician MAS
Analyst MAS

Monitoring Well/Piezometer **PH12-3-3**
Test 5

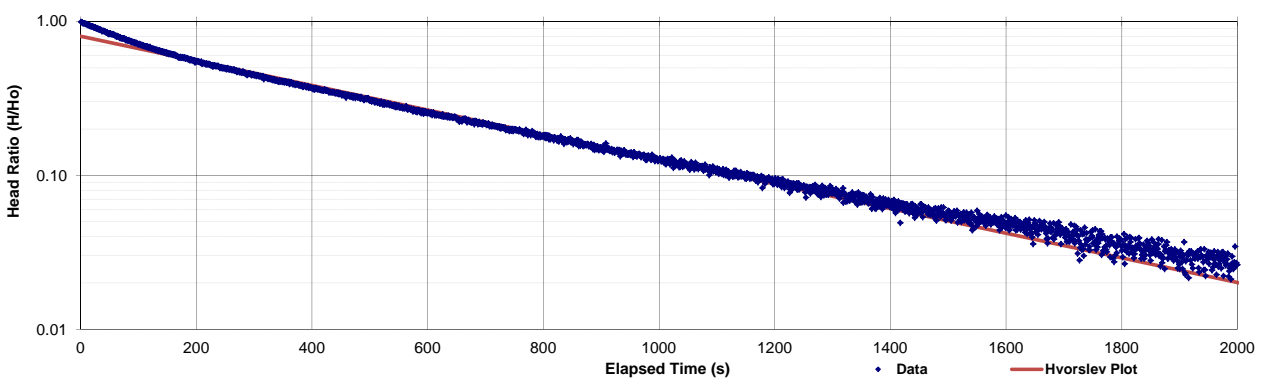
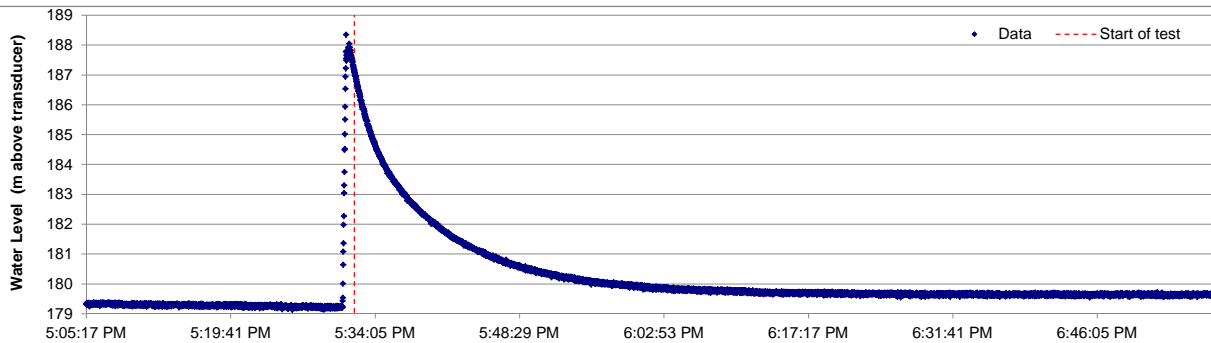
Monitoring Instrument Type Transducer
Slug Dimensions and Type 46.5 litres of water
Test Date 21-Nov-12

Drill-hole diameter, D 0.096 m
Effective diameter of drillrods, d_e 0.078 m
Top of test zone 175.6 m
Bottom of test zone 207.9 m
Test Length, L 32.3 m

Slug Injected, Time = 0 5:32:01 PM
Initial water level 179.1 m above transducer
Water level after slug 186.6 m above transducer
Change In Water Level, H_0 7.5 m

Transmissivity, T 9E-06 m²/s
Hydraulic Conductivity, K 3E-07 m/s

Intercept 0.8



TEST COMMENTS:

M:\1\01\00457\06\A\Data\Task 206 - Phase 5 - Open Hydrogeological Site Investigation\Observation wells\Hydraulic Testing\Analysis\Reviewed\PW3 location\PH12-3-3_FH\PH12-3-3 FH Test 5 576'-682'.xlsx\Hvorslev

REV	DATE	DESCRIPTION	PREP'D	CHK'D	APP'D
0	21OCT13	ISSUED WITH REPORT	FTJ	CAS	KJB

**NEW GOLD INC.
BLACKWATER GOLD PROJECT**

**HYDRAULIC CONDUCTIVITY CALCULATION
USING HVORSLEV (1951) METHOD**

Print 12/04/13 17:03

Project No. VA101-457/6
Field Technician MAS
Analyst MAS

Monitoring Well/Piezometer **PH12-3-3**
Test 6

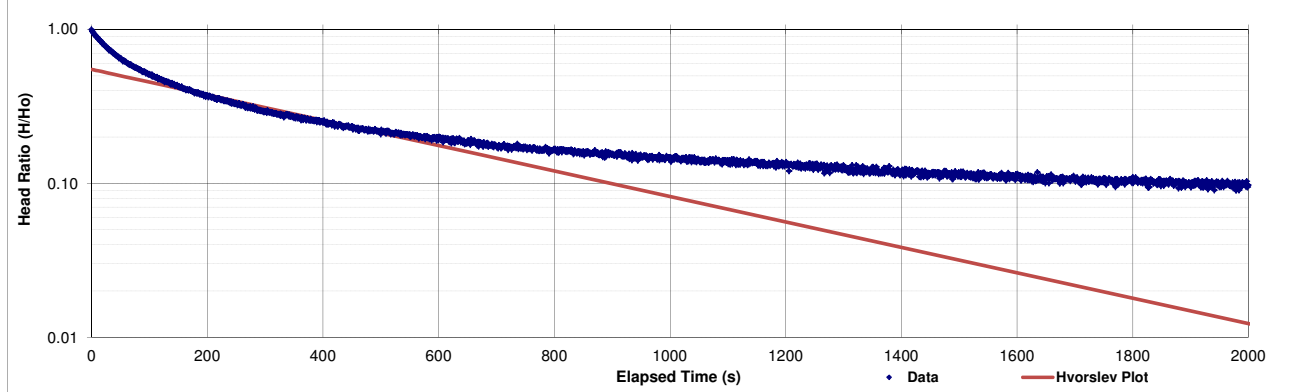
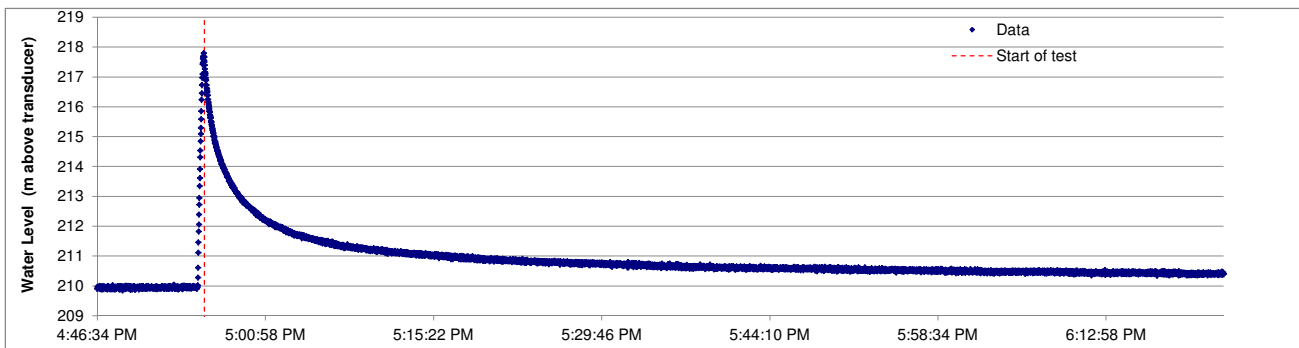
Monitoring Instrument Type Transducer
Slug Dimensions and Type 46.2 litres of water
Test Date 22-Nov-12

Drill-hole diameter, D 0.096 m
Effective diameter of drillrods, d_e 0.078 m
Top of test zone 206.0 m
Bottom of test zone 244.4 m
Test Length, L 38.4 m

Slug Injected, Time = 0 4:55:44 PM
Initial water level 210.0 m above transducer
Water level after slug 217.7 m above transducer
Change In Water Level, H_0 7.7 m

Transmissivity, T $1E-05$ m²/s
Hydraulic Conductivity, K $3E-07$ m/s

Intercept 0.6



TEST COMMENTS:

The volume of the slug of water was measured with a flow meter.

C:\Users\slabash\Desktop\Rev\PH12-3-3 FH Test 6 676'-802'.xlsx\Hvorslev

REV	DATE	ISSUED WITH REPORT	DESCRIPTION	FTJ	CAS	KJB
				PREP'D	CHK'D	APP'D
0	21OCT13	ISSUED WITH REPORT				

**NEW GOLD INC.
BLACKWATER GOLD PROJECT**

**HYDRAULIC CONDUCTIVITY CALCULATION
USING HVORSLEV (1951) METHOD**

Print 11/22/13 11:30

Project No. VA101-457/6
Field Technician MAS
Analyst MAS

Monitoring Well/Piezometer **PH12-3-3**
Test 7

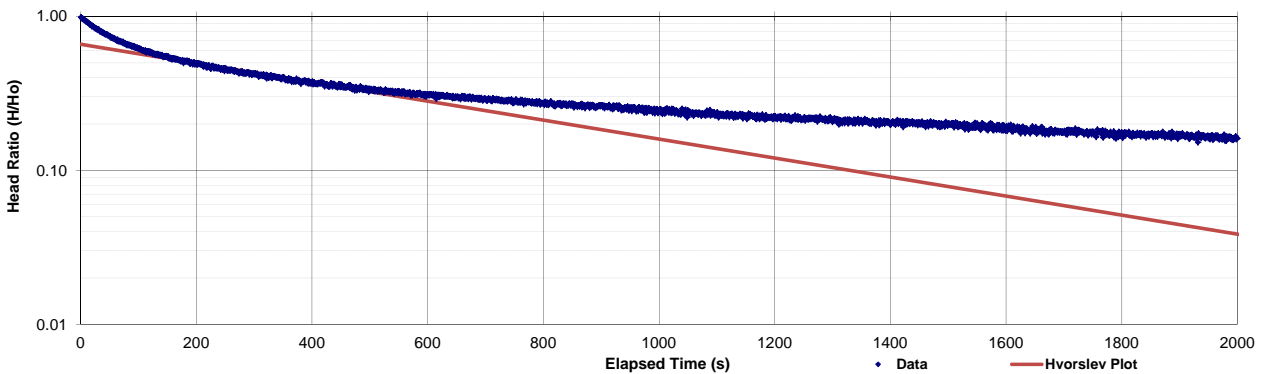
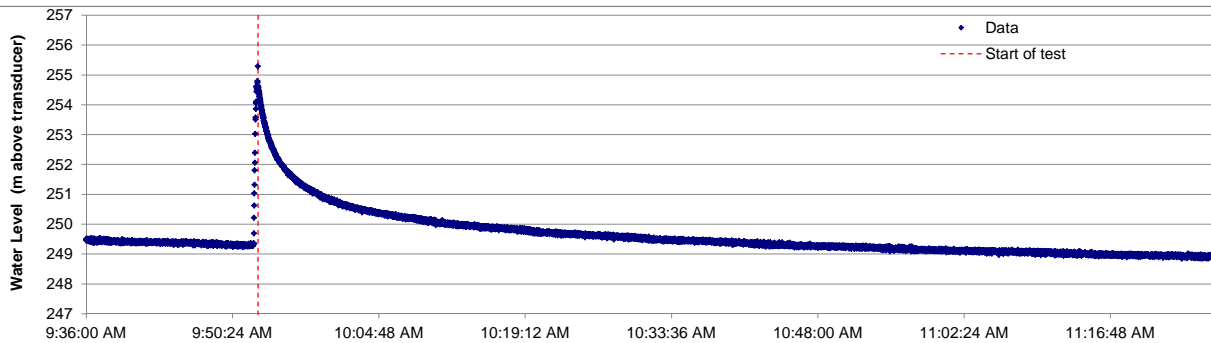
Monitoring Instrument Type Transducer
Slug Dimensions and Type 37.9 litres of water
Test Date 23-Nov-12

Drill-hole diameter, D 0.096 m
Effective diameter of drillrods, d_e 0.078 m
Top of test zone 242.6 m
Bottom of test zone 278.0 m
Test Length, L 35.4 m

Slug Injected, Time = 0 9:52:55 AM
Initial water level 248.7 m above transducer
Water level after slug 254.6 m above transducer
Change In Water Level, H_0 6.0 m

Transmissivity, T $7E-06$ m²/s
Hydraulic Conductivity, K $2E-07$ m/s

Intercept 0.7



TEST COMMENTS:

Initial water level for hydraulic analysis has been estimated from water level recovery prior to falling head test.
The volume of the injected slug of water was measured with a flow meter.

M:\1\01\00457\06\A\Data\Task 206 - Phase 5 - Open Hydrogeological Site Investigation\Observation wells\Hydraulic Testing\Analysis\Reviewed\PW3 location\PH12-3-3_FH\PH12-3-3 FH Test 7 796'-912'.xlsx\Hvorslev

REV	DATE	DESCRIPTION	PREP'D	CHK'D	APP'D
0	21OCTE13	ISSUED WITH REPORT	FTJ	CAS	KJB

**NEW GOLD INC.
BLACKWATER GOLD PROJECT**

**HYDRAULIC CONDUCTIVITY CALCULATION
USING HVORSLEV (1951) METHOD**

Print 11/22/13 11:32

Project No. VA101-457/6
Field Technician MAS
Analyst MAS

Monitoring Well/Piezometer **PH12-3-3**
Test 8

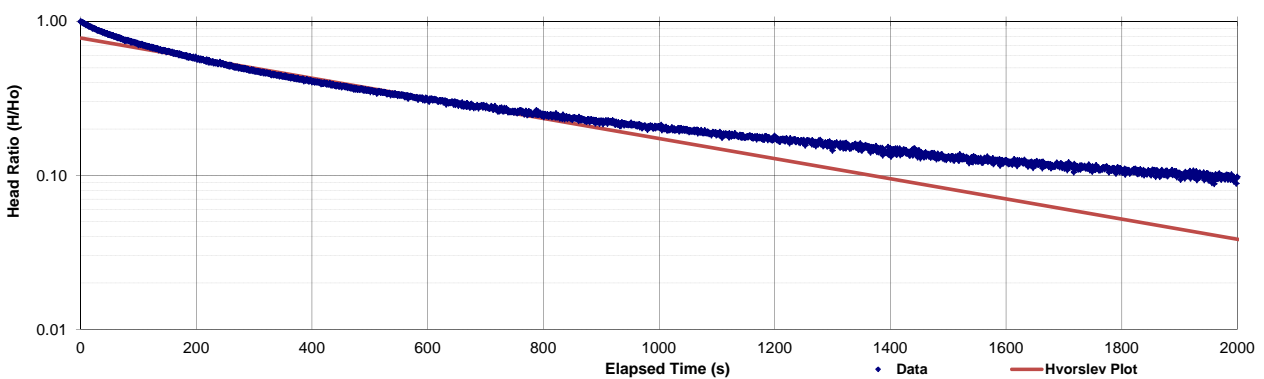
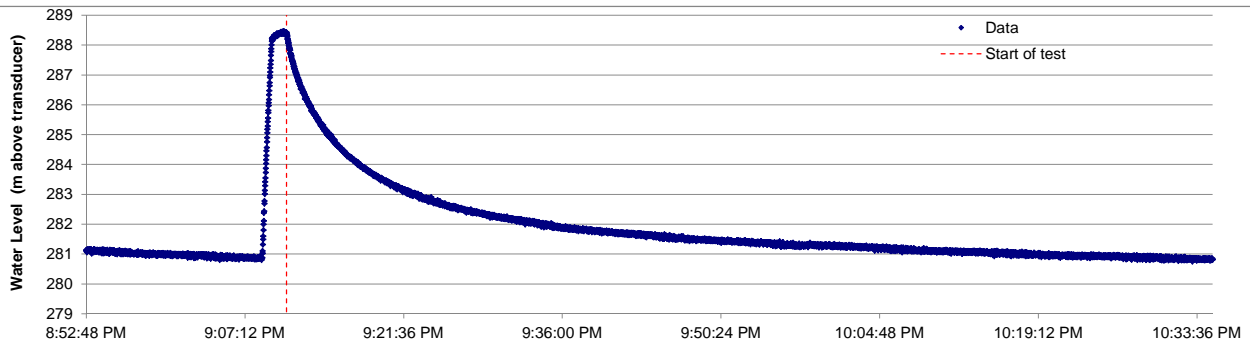
Monitoring Instrument Type Transducer
Slug Dimensions and Type 42.0 litres of water
Test Date 23-Nov-12

Drill-hole diameter, D 0.096 m
Effective diameter of drillrods, d_e 0.078 m
Top of test zone 274.9 m
Bottom of test zone 299.3 m
Test Length, L 24.4 m

Slug Injected, Time = 0 9:10:59 PM
Initial water level 280.9 m above transducer
Water level after slug 288.4 m above transducer
Change In Water Level, H_0 7.5 m

Transmissivity, T $7E-06$ m²/s
Hydraulic Conductivity, K $3E-07$ m/s

Intercept 0.8



TEST COMMENTS:

Initial water level for hydraulic analysis has been estimated from water level recovery prior to falling head test.
The volume of the injected slug of water was measured with a flow meter.

M:\1\01\00457\06\A\Data\Task 206 - Phase 5 - Open Hydrogeological Site Investigation\Observation wells\Hydraulic Testing\Analysis\Reviewed\PW3 location\PH12-3-3_FH\PH12-3-3 FH Test 8 906'-982' EOH.xlsx\Hvorslev

0	21OCT13	ISSUED WITH REPORT	FTJ	CAS	KJB
REV	DATE	DESCRIPTION	PREP'D	CHK'D	APP'D

**NEW GOLD INC.
BLACKWATER GOLD PROJECT**

**HYDRAULIC CONDUCTIVITY CALCULATION
USING HVORSLEV (1951) METHOD**

Print 11/25/13 9:58

Project No. VA101-457/6
Field Technician MAS
Analyst MAS

Monitoring Well/Piezometer **PH12-4-1**
Test 1

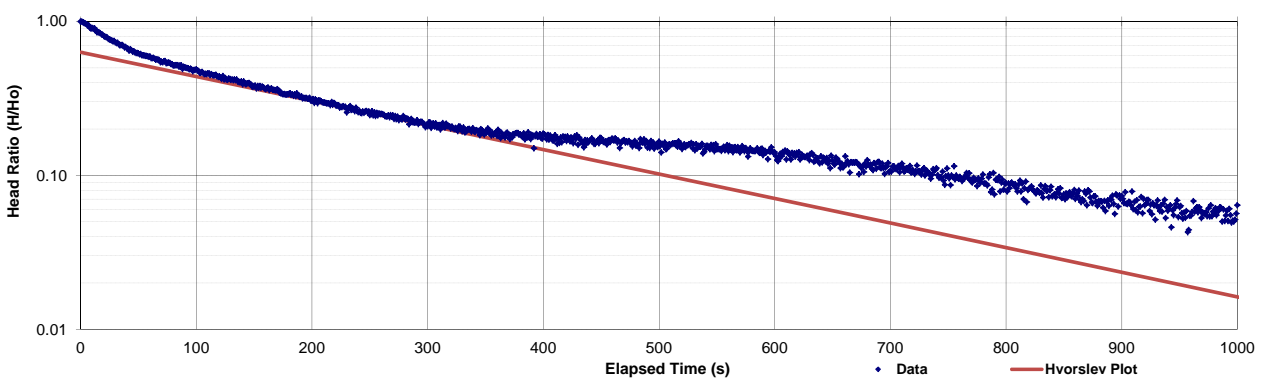
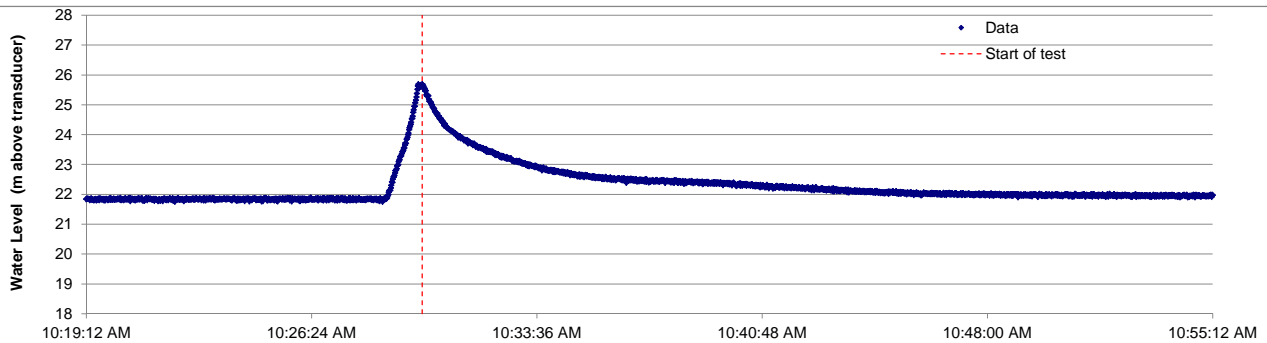
Monitoring Instrument Type Transducer
Slug Dimensions and Type 32.7 litres of water
Test Date 22-Nov-12

Drill-hole diameter, D 0.096 m
Effective diameter of drillrods, d_e 0.078 m
Top of test zone 13.7 m
Bottom of test zone 43.0 m
Test Length, L 29.3 m

Slug Injected, Time = 0 10:29:56 AM
Initial water level 21.8 m above transducer
Water level after slug 25.7 m above transducer
Change In Water Level, H_0 3.9 m

Transmissivity, T 2E-05 m²/s
Hydraulic Conductivity, K 6E-07 m/s

Intercept 0.6



TEST COMMENTS:

The volume of the injected slug of water was measured with a flow meter.

M:\1\01\00457\06\A\Data\Task 206 - Phase 5 - Open Hydrogeological Site Investigation\Observation wells\Hydraulic Testing\Analysis\Reviewed\PW4 location\PH12-4-1_FH and Airlift recovery\PH12-4-1 FH Test 1 45'-141'.xlsx\Hvorslev

REV	DATE	DESCRIPTION	PREP'D	CHK'D	APP'D
0	21OCT13	ISSUED WITH REPORT	FTJ	CAS	KJB

**NEW GOLD INC.
BLACKWATER GOLD PROJECT**

**HYDRAULIC CONDUCTIVITY CALCULATION
USING HVORSLEV (1951) METHOD**

Print 11/25/13 10:01

Project No. VA101-457/6
Field Technician TDS
Analyst MAS

Monitoring Well/Piezometer **PH12-4-1**
Test 2

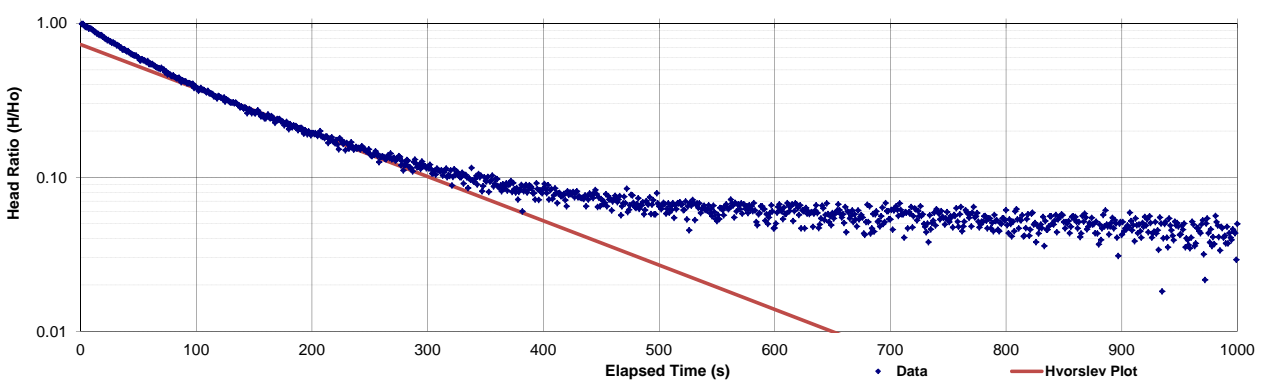
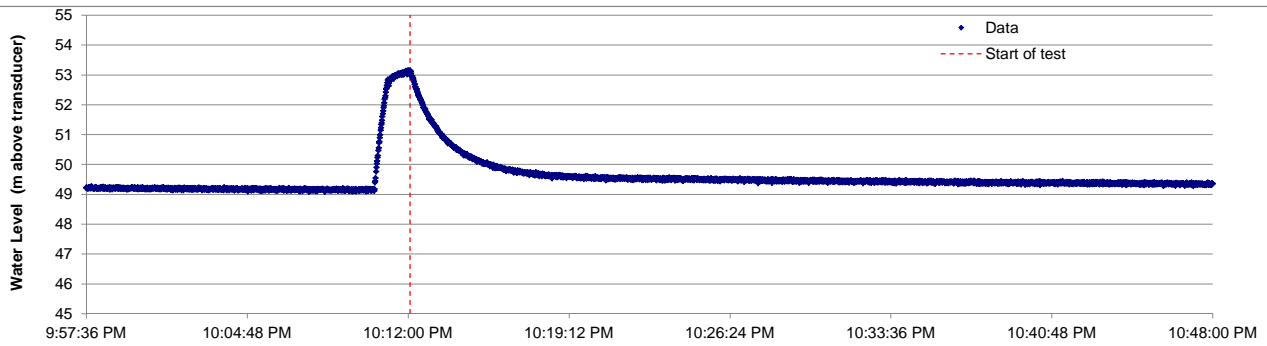
Monitoring Instrument Type Transducer
Slug Dimensions and Type 4.2 m of rods filled
Test Date 22-Nov-12

Drill-hole diameter, D 0.096 m
Effective diameter of drillrods, d_e 0.078 m
Top of test zone 41.1 m
Bottom of test zone 73.5 m
Test Length, L 32.3 m

Slug Injected, Time = 0 10:12:05 PM
Initial water level 49.3 m above transducer
Water level after slug 53.1 m above transducer
Change In Water Level, H_0 3.8 m

Transmissivity, T $3E-05$ m²/s
Hydraulic Conductivity, K $1E-06$ m/s

Intercept 0.7



TEST COMMENTS:

Initial water level for hydraulic analysis has been estimated from water level prior to falling head test.

M:\11\01\00457\06\A\Data\Task 206 - Phase 5 - Open Hydrogeological Site Investigation\Observation wells\Hydraulic Testing\Analysis\Reviewed\PW4 location\PH12-4-1_FH and Airlift recovery\PH12-4-1 FH Test 2 135'-241'.xlsx\Hvorslev

REV	DATE	DESCRIPTION	PREP'D	CHK'D	APP'D
0	21OCT13	ISSUED WITH REPORT	FTJ	CAS	KJB

**NEW GOLD INC.
BLACKWATER GOLD PROJECT**

**HYDRAULIC CONDUCTIVITY CALCULATION
USING HVORSLEV (1951) METHOD**

Print 11/25/13 10:03

Project No. VA101-457/6
Field Technician MAS
Analyst MAS

Monitoring Well/Piezometer **PH12-4-1**
Test 3

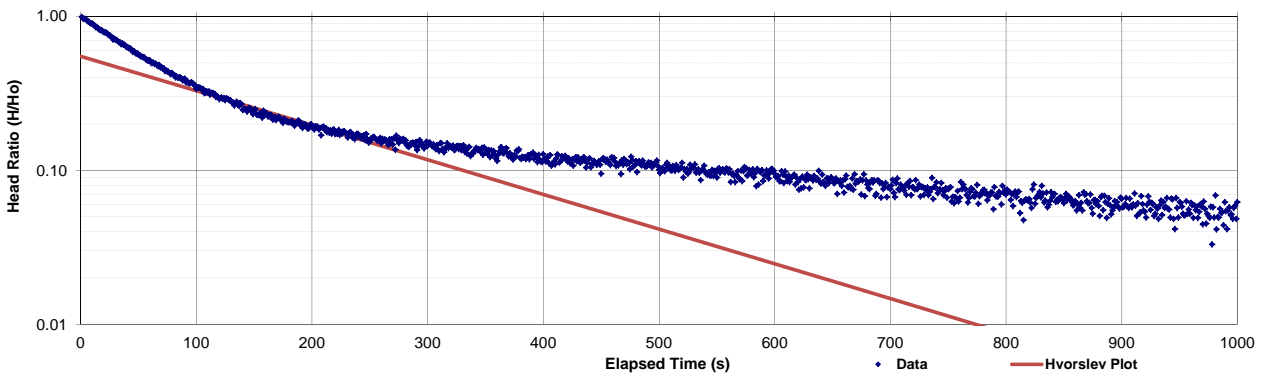
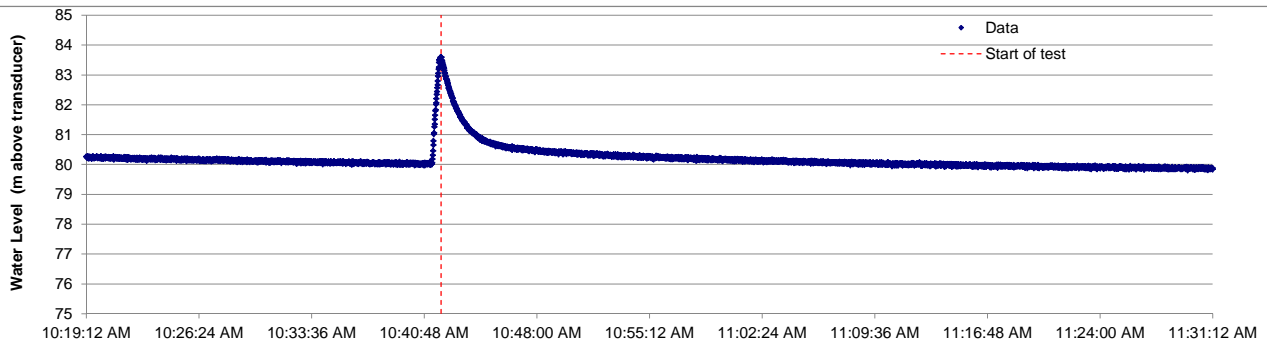
Monitoring Instrument Type Transducer
Slug Dimensions and Type 20 litres of water
Test Date 23-Nov-12

Drill-hole diameter, D 0.096 m
Effective diameter of drillrods, d_e 0.078 m
Top of test zone 71.6 m
Bottom of test zone 108.5 m
Test Length, L 36.9 m

Slug Injected, Time = 0 10:41:53 AM
Initial water level 80.0 m above transducer
Water level after slug 83.6 m above transducer
Change In Water Level, H_0 3.6 m

Transmissivity, T $3E-05$ m²/s
Hydraulic Conductivity, K $7E-07$ m/s

Intercept 0.6



TEST COMMENTS:

Initial water level for hydraulic analysis has been estimated from the water level prior to falling head test.
The volume of the injected slug of water was measured with a flow meter.

M:\1\01\00457\06\A\Data\Task 206 - Phase 5 - Open Hydrogeological Site Investigation\Observation wells\Hydraulic Testing\Analysis\Reviewed\PW4 location\PH12-4-1_FH and Airlift recovery\PH12-4-1 FH Test 3 235'-356'.xlsx\Hvorslev

REV	DATE	DESCRIPTION	PREP'D	CHK'D	APP'D
0	21OCT13	ISSUED WITH REPORT	FTJ	CAS	KJB

**NEW GOLD INC.
BLACKWATER GOLD PROJECT**

**HYDRAULIC CONDUCTIVITY CALCULATION
USING HVORSLEV (1951) METHOD**

Print 11/25/13 10:04

Project No. VA101-457/6
Field Technician MAS
Analyst MAS

Monitoring Well/Piezometer **PH12-4-1**
Test 4

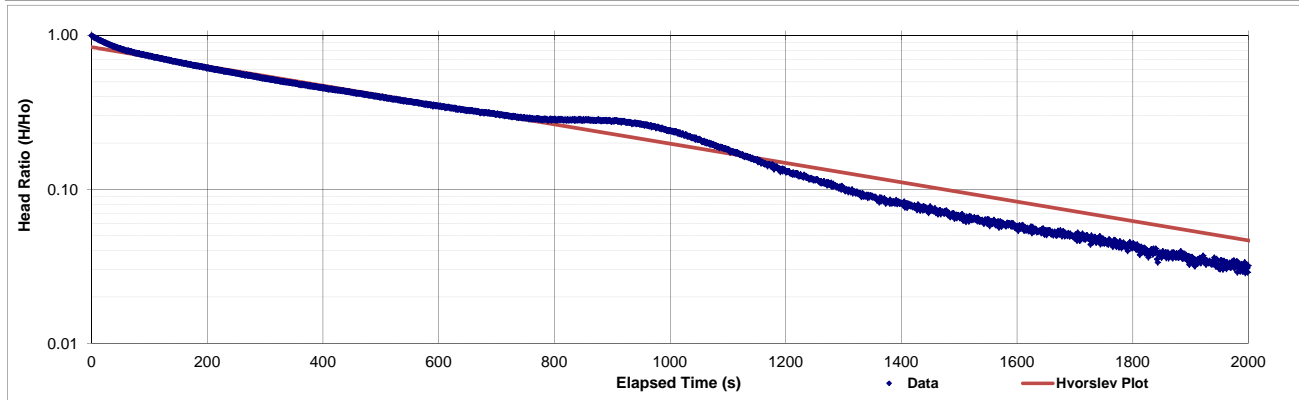
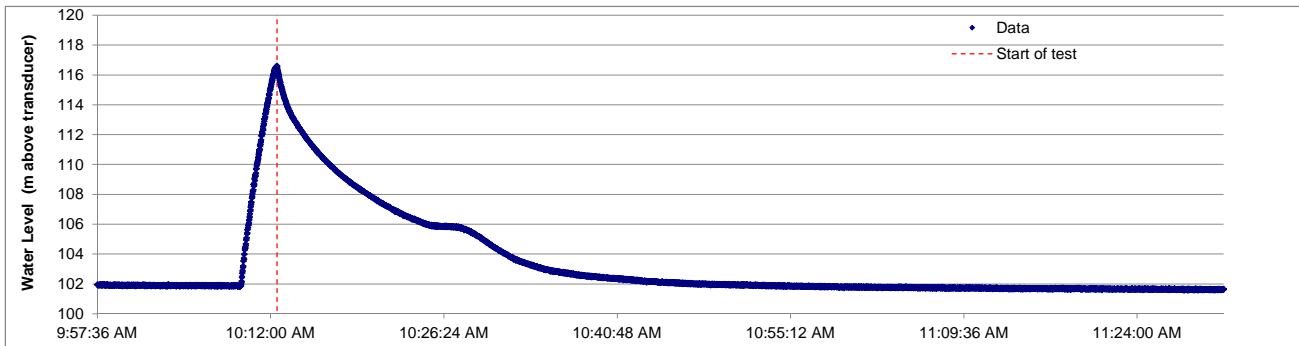
Monitoring Instrument Type Transducer
Slug Dimensions and Type 120 litres of water
Test Date 24-Nov-12

Drill-hole diameter, D 0.096 m
Effective diameter of drillrods, d_e 0.078 m
Top of test zone 106.7 m
Bottom of test zone 157.3 m
Test Length, L 50.6 m

Slug Injected, Time = 0 10:12:32 AM
Initial water level 101.6 m above transducer
Water level after slug 116.6 m above transducer
Change In Water Level, H_0 15.0 m

Transmissivity, T 8E-06 m²/s
Hydraulic Conductivity, K 2E-07 m/s

Intercept 0.8



TEST COMMENTS:

The volume of the injected slug of water was measured with a flow meter.

M:\1\01\00457\06\A\Data\Task 206 - Phase 5 - Open Hydrogeological Site Investigation\Observation wells\Hydraulic Testing\Analysis\Reviewed\PW4 location\PH12-4-1_FH and Airlift recovery\PH12-4-1 FH Test 4 350'-511'.xlsx\Hvorslev

REV	DATE	DESCRIPTION	PREP'D	CHK'D	APP'D
0	21OCT13	ISSUED WITH REPORT	FTJ	CAS	KJB

**NEW GOLD INC.
BLACKWATER GOLD PROJECT**

**HYDRAULIC CONDUCTIVITY CALCULATION
USING HVORSLEV (1951) METHOD**

Print 11/25/13 10:06

Project No. VA101-457/6
Field Technician TDS
Analyst MAS

Monitoring Well/Piezometer **PH12-4-1**
Test 5

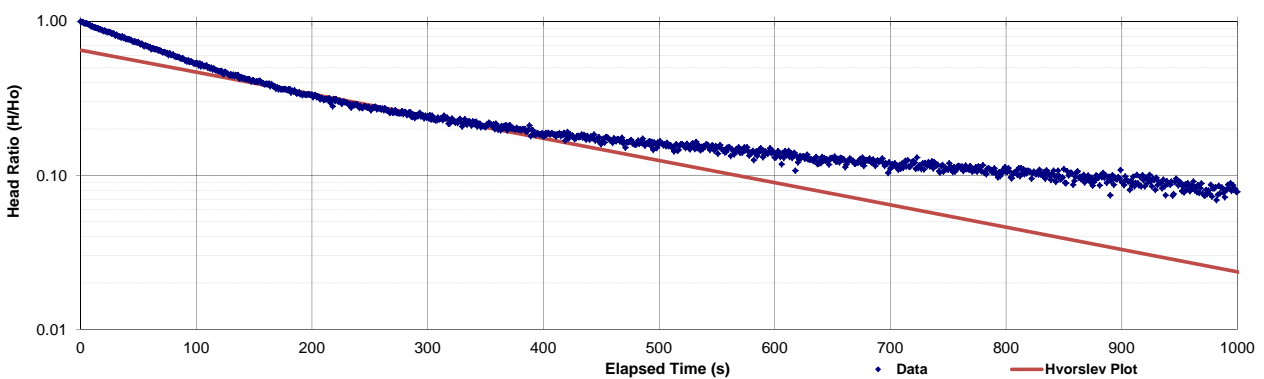
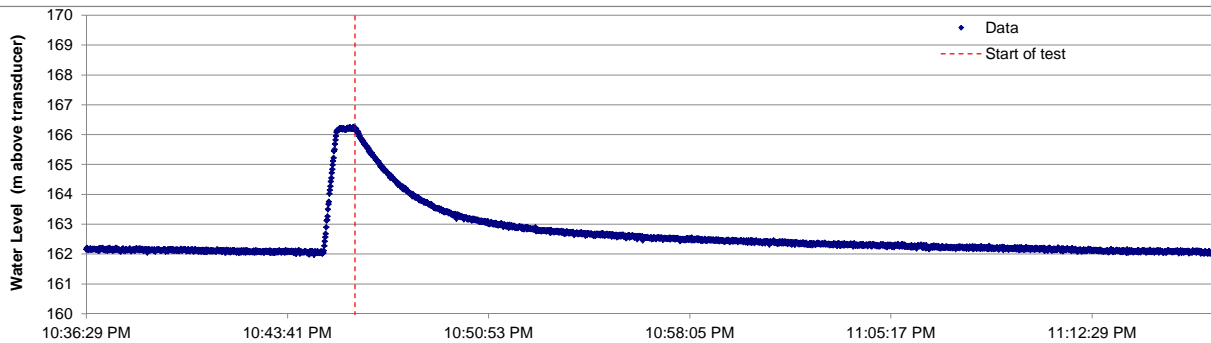
Monitoring Instrument Type Transducer
Slug Dimensions and Type 22.4 litres of water
Test Date 24-Nov-12

Drill-hole diameter, D 0.096 m
Effective diameter of drillrods, d_e 0.078 m
Top of test zone 157.0 m
Bottom of test zone 189.3 m
Test Length, L 32.3 m

Slug Injected, Time = 0 10:46:06 PM
Initial water level 162.0 m above transducer
Water level after slug 166.2 m above transducer
Change In Water Level, H_0 4.2 m

Transmissivity, T 2E-05 m²/s
Hydraulic Conductivity, K 5E-07 m/s

Intercept 0.7



TEST COMMENTS:

Initial water level for hydraulic analysis has been estimated from water level prior to falling head test.
The volume of the injected slug of water was measured with a flow meter.

M:\1\01\00457\06\A\Data\Task 206 - Phase 5 - Open Hydrogeological Site Investigation\Observation wells\Hydraulic Testing\Analysis\Reviewed\PW4 location\PH12-4-1_FH and Airlift recovery\PH12-4-1 FH Test 5 516'-621'.xlsx\Hvorslev

REV	DATE	DESCRIPTION	PREP'D	CHK'D	APP'D
0	21OCT13	ISSUED WITH REPORT	FTJ	CAS	KJB

**NEW GOLD INC.
BLACKWATER GOLD PROJECT**

**AIRLIFT PUMPING RECOVERY TEST
USING THIS METHOD (1935)**

26/11/2013 11:16

Project No. VA101-457/6
Field Technician MAS
Analyst CAS
Test Date 25-Nov-12
Drill-hole Diameter 0.096 m (HQ)
Stinger Diameter 0.019 m
Top of Test Zone 189.3 mbgs
Bottom of Test Zone 250.2 mbgs
Test Length 61.0 m
Stinger Depth 64.6 mbgs

Drill-hole **PH12-4-1**
Test 6

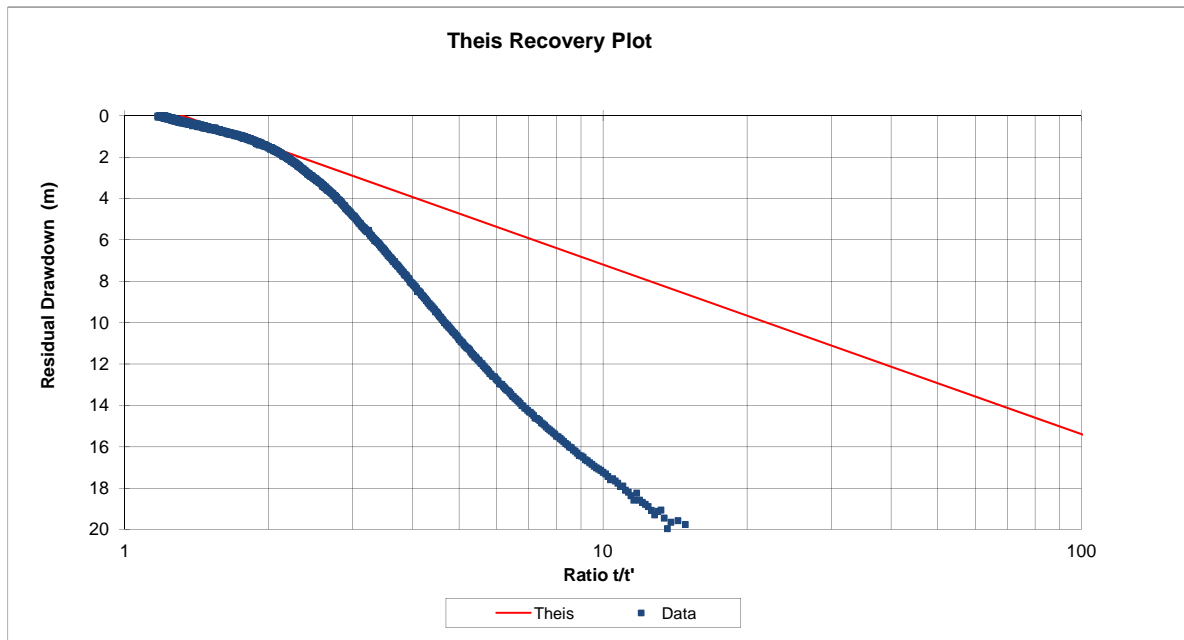
Start Airlifting 10:23 AM Final Water Level 54.3 m above transducer
End Airlifting 10:35 AM Initial Water Level 33.3 m above transducer
Drawdown 20.9 m

Well No.	Description	Distance (m)	Start (s)	Pumping Rate (m ³ /s)
1	Start Airlifting	0.05	0	3.6E-04
1	End Airlifting	0.05	720	-3.6E-04

Air Compressor Rating 400 cfm
Air Pressure During Test 20 to 50 psi

Hydraulic Conductivity, K 1E-07 m/s
Transmissivity, T 8E-06 m²/s

Storativity, S 1E-04
Offset 0



TEST COMMENTS:

M:\1\01\00457\06\A\Data\Task 206 - Phase 5 - Open Hydrogeological Site Investigation\Observation wells\Hydraulic Testing\Analysis\Reviewed\PW4 location\PH12-4-1_FH and Airlift recovery\PH12-4-1 Test 6 Airlift 621'-821'.xlsx\This Recovery Analysis

REV	DATE	DESCRIPTION	PREP'D	CHK'D	APP'D
0	21OCT'13	ISSUED WITH REPORT	FTJ	CAS	KJB

**NEW GOLD INC.
BLACKWATER GOLD PROJECT**

**HYDRAULIC CONDUCTIVITY CALCULATION
USING HVORSLEV (1951) METHOD**

Print 11/25/13 10:29

Project No. VA101-457/6
Field Technician MAS
Analyst FTJ

Observation Well **PH12-4-1**
Test 7

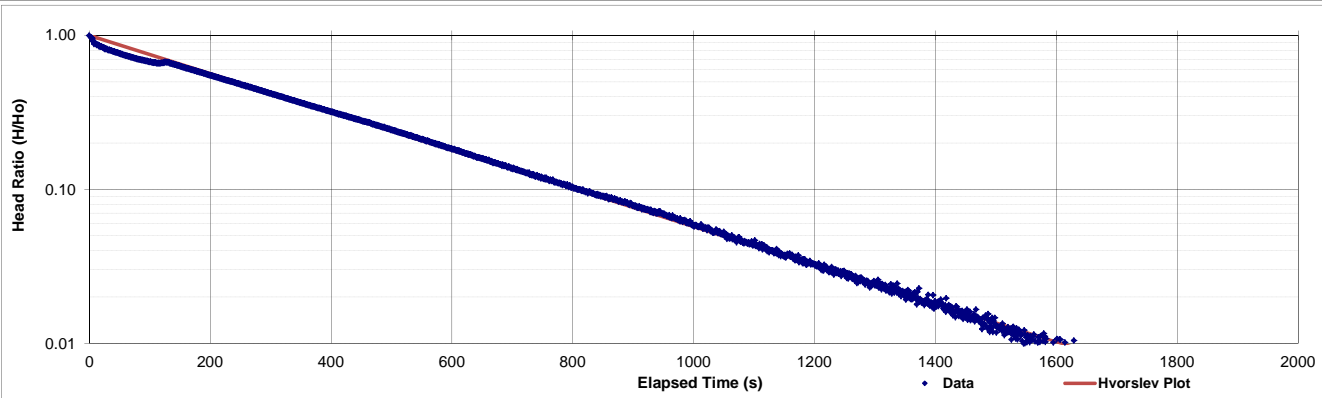
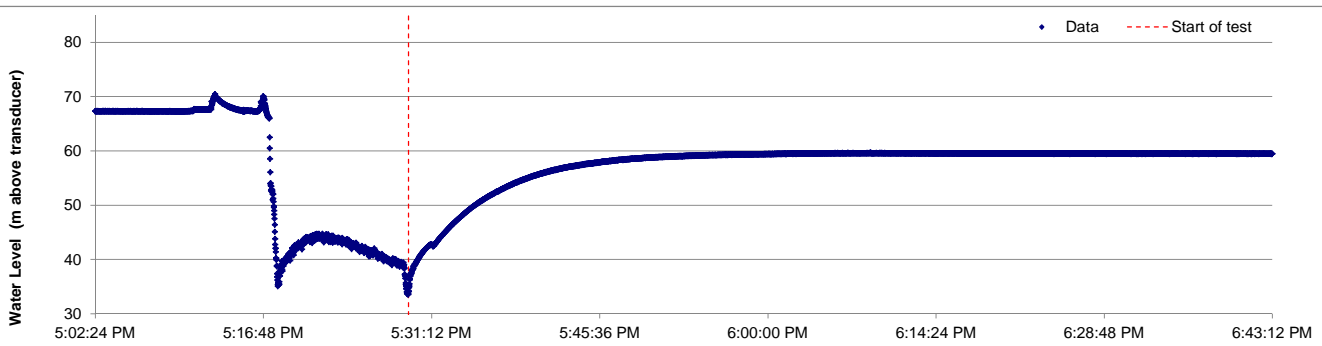
Monitoring Instrument Type Transducer
Slug Dimensions and Type Airlift Water Level Depression
Test Date 27-Nov-12

Drill-hole diameter, D 0.096 m
Effective diameter of drillrods, d_e 0.078 m
Top of test zone 247.2 m
Bottom of test zone 315.8 m
Test Length, L 68.6 m

Slug Injected, Time = 0 5:29:14 PM
Initial water level 59.5 m above transducer
Water level after slug 34.2 m above transducer
Change In Water Level, H_0 -25.3 m

Transmissivity, T $2E-05$ m²/s
Hydraulic Conductivity, K $2E-07$ m/s

Intercept 1.0



TEST COMMENTS:

Static water level was estimated from post-test water level.
Discharge rate at end of airlifting test was 0.3L/s.

M:\1\01\00457\06\A\Data\Task 206 - Phase 5 - Open Hydrogeological Site Investigation\Observation wells\Hydraulic Testing\Analysis\Reviewed\PW4 location\PH12-4-1_FH and Airlift recovery\PH12-4-1 Test 7 Airlift 811'-1036'.xlsx\Hvorslev

0	21OCT13	ISSUED WITH REPORT	FTJ	CAS	KJB
REV	DATE	DESCRIPTION	PREP'D	CHK'D	APP'D

**NEW GOLD INC.
BLACKWATER GOLD PROJECT**

**HYDRAULIC CONDUCTIVITY CALCULATION
USING HVORSLEV (1951) METHOD**

Print 11/25/13 10:44

Project No. VA101-457/6
Field Technician MAS
Analyst FTJ

Observation Well **PH12-4-1**
Test 8

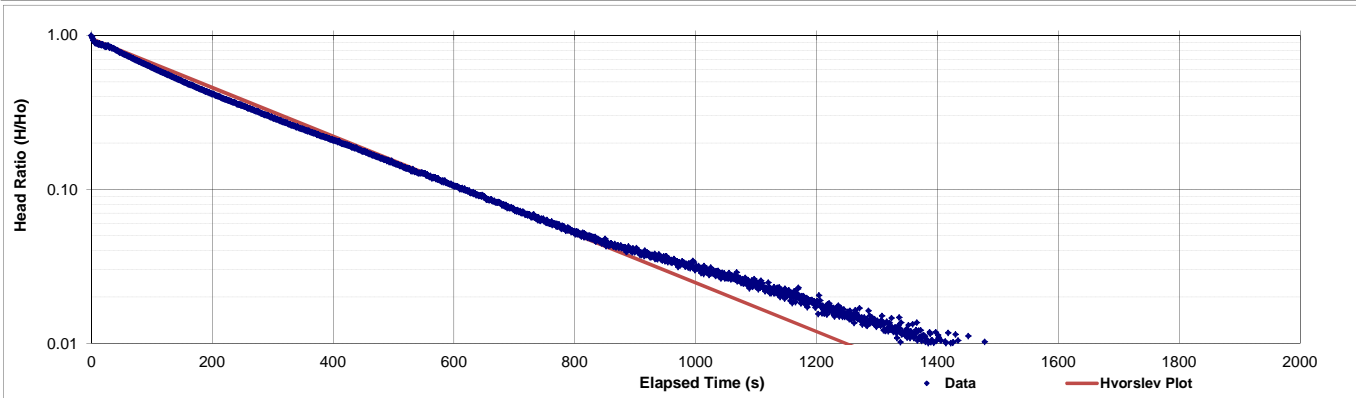
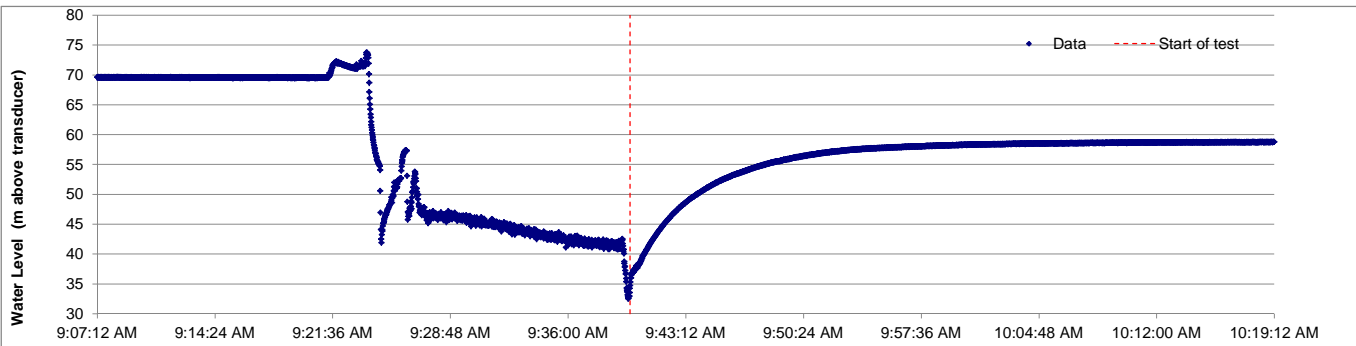
Monitoring Instrument Type Transducer
Slug Dimensions and Type Airlift Water Level Depression
Test Date 28-Nov-12

Drill-hole diameter, D 0.096 m
Effective diameter of drillrods, d_e 0.078 m
Top of test zone 314.2 m
Bottom of test zone 349.3 m
Test Length, L 35.1 m

Slug Injected, Time = 0 9:39:47 AM
Initial water level 58.7 m above transducer
Water level after slug 34.2 m above transducer
Change In Water Level, H_0 -24.5 m

Transmissivity, T $2E-05$ m²/s
Hydraulic Conductivity, K $5E-07$ m/s

Intercept 1.0



TEST COMMENTS:

Static water level was estimated from post-test water level.
Discharge rate at end of airlifting test was 0.4L/s.

M:\1\01\00457\06\A\Data\Task 206 - Phase 5 - Open Hydrogeological Site Investigation\Observation wells\Hydraulic Testing\Analysis\Reviewed\PW4 location\PH12-4-1_FH and Airlift recovery\PH12-4-1 Test 8 Airlift 1031'-EOH.xlsx\Hvorslev

0	21OCT13	ISSUED WITH REPORT	FTJ	CAS	FTJ
REV	DATE	DESCRIPTION	PREP'D	CHK'D	APP'D

**NEW GOLD INC.
BLACKWATER GOLD PROJECT**

**HYDRAULIC CONDUCTIVITY CALCULATION
USING HVORSLEV (1951) METHOD**

Print 11/25/13 14:40

Project No. VA101-457/6
Field Technician LEP
Analyst MAS

Observation Well **PH12-4-2**
Test 1

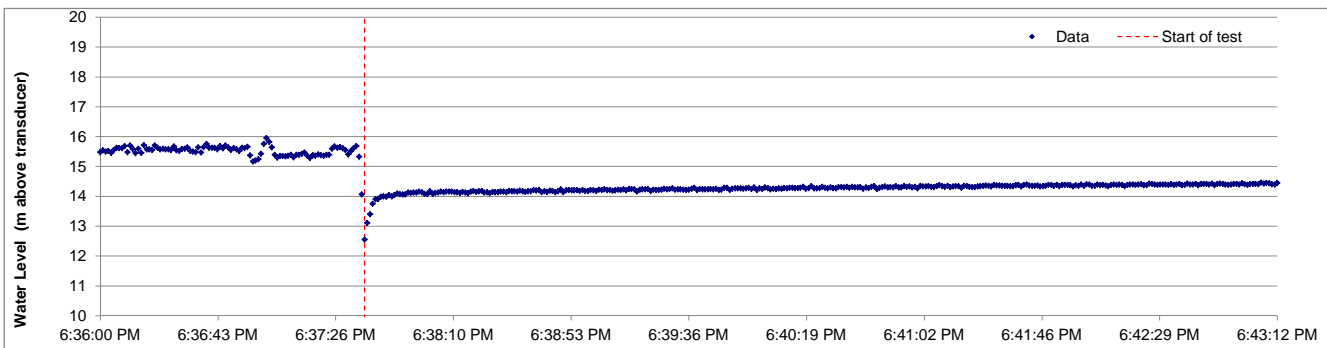
Monitoring Instrument Type Transducer
Slug Dimensions and Type Airlift Waterlevel Depression
Test Date 30-Nov-12

Drill-hole diameter, D 0.096 m
Effective diameter of drillrods, d_e 0.078 m
Top of test zone 18.9 m
Bottom of test zone 76.8 m
Test Length, L 57.9 m

Slug Injected, Time = 0 6:37:37 PM
Initial water level 16.5 m above transducer
Water level after slug 12.5 m above transducer
Change In Water Level, H_0 -4.0 m

Transmissivity, T m^2/s
Hydraulic Conductivity, K m/s

Intercept



TEST COMMENTS:

No analysis possible, no water discharge from the borehole.

M:\1\01\00457\06\A\Data\Task 206 - Phase 5 - Open Hydrogeological Site Investigation\Observation wells\Hydraulic Testing\Analysis\Reviewed\PW4 location\PH12-4-2_Airlift recovery\PH12-4-2 Test 1 Hvorslev.xlsx\Hvorslev

0	21OCT13	ISSUED WITH REPORT	FTJ	CAS	KJB
REV	DATE	DESCRIPTION	PREP'D	CHK'D	APP'D

**NEW GOLD INC.
BLACKWATER GOLD PROJECT**

**AIRLIFT PUMPING RECOVERY TEST
USING THEIS METHOD (1935)**

26/11/2013 11:15

Project No. VA101-457/6
Field Technician MAS
Analyst CM
Test Date 01-Dec-12
Drill-hole Diameter 0.096 m (HQ)
Stinger Diameter 0.019 m
Top of Test Zone 67.7 mbgs
Bottom of Test Zone 128.6 mbgs
Test Length 61.0 m
Stinger Depth 61.6 mbgs

Drill-hole **PH12-4-2**
Test 2

Start Airlifting 11:20 AM Final Water Level 44.0 m above transducer
End Airlifting 11:50 AM Initial Water Level 22.7 m above transducer
Drawdown 21.3 m

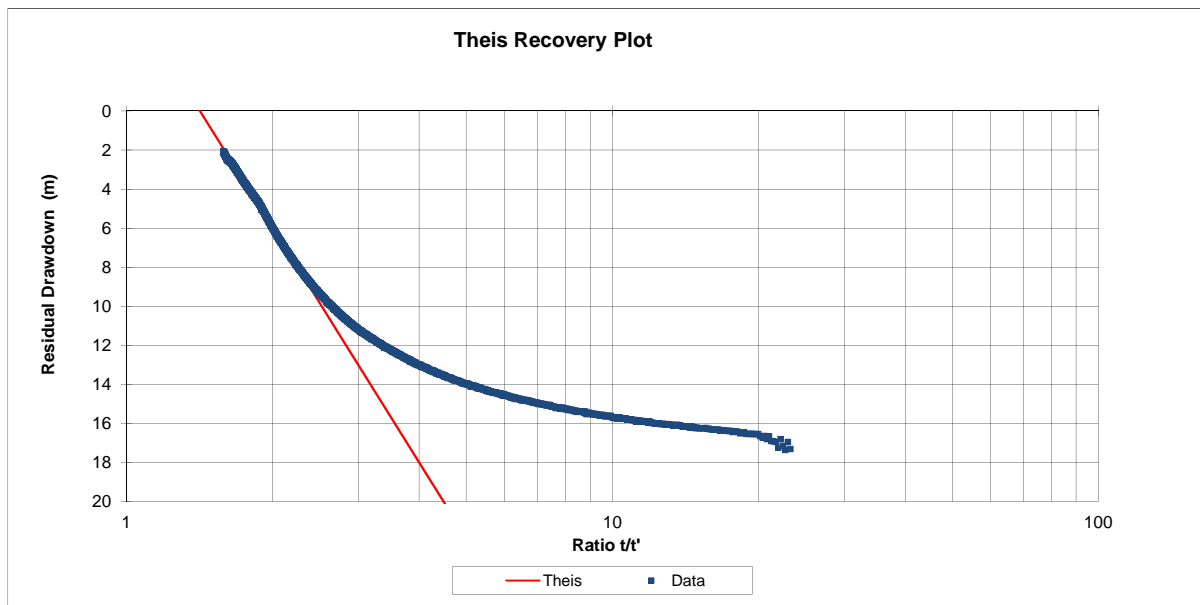
Well No.	Description	Distance (m)	Start (s)	Pumping Rate (m ³ /s)
1	Start Airlifting	0.05	0	1.2E-04
1	End Airlifting	0.05	1,800	-1.2E-04

Air Compressor Rating 400 cfm
Air Pressure During Test 55 psi

Hydraulic Conductivity, K 9E-09 m/s
Transmissivity, T 6E-07 m²/s

Storativity, S 1E-04
Offset 1.8

Theis Recovery Plot



TEST COMMENTS:

M:\1\01\00457\06\A\Data\Task 206 - Phase 5 - Open Hydrogeological Site Investigation\Observation wells\Hydraulic Testing\Analysis\Reviewed\PW4 location\PH12-4-2_Airlift recovery\PH12-4-2 Airlift 2 222'-422'.xlsx]Theis Recovery Analysis

REV	DATE	DESCRIPTION	PREP'D	CHK'D	APP'D
0	21OCT13	ISSUED WITH REPORT	FTJ	CAS	KJB

**NEW GOLD INC.
BLACKWATER GOLD PROJECT**

**HYDRAULIC CONDUCTIVITY CALCULATION
USING HVORSLEV (1951) METHOD**

Print 12/04/13 17:04

Project No. VA101-457/6
Field Technician MAS
Analyst FTJ

Observation Well **PH12-4-2**
Test 3

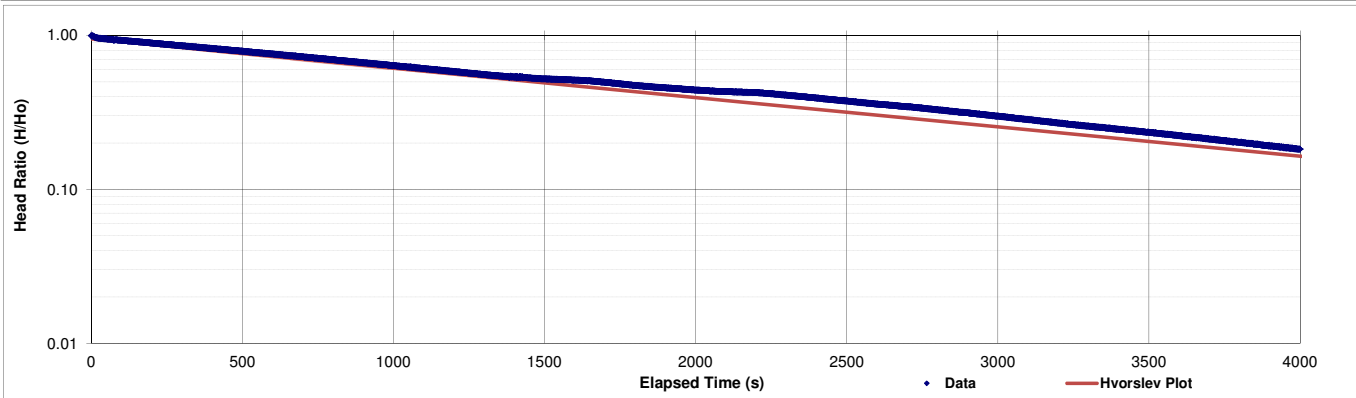
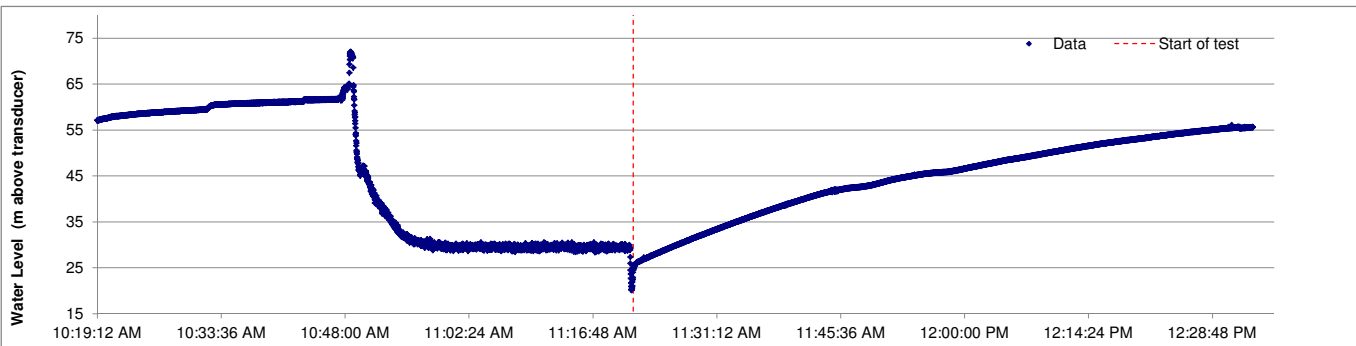
Monitoring Instrument Type Transducer
Slug Dimensions and Type Airlift Water Level Depression
Test Date 2-Dec-12

Drill-hole diameter, D 0.096 m
Effective diameter of drillrods, d_e 0.078 m
Top of test zone 128.6 m
Bottom of test zone 181.7 m
Test Length, L 53.1 m

Slug Injected, Time = 0 11:21:29 AM
Initial water level 61.7 m above transducer
Water level after slug 24.7 m above transducer
Change In Water Level, H_0 -37.0 m

Transmissivity, T 2E-06 m²/s
Hydraulic Conductivity, K 4E-08 m/s

Intercept 1.0



TEST COMMENTS:

The initial water level was estimated from the water level recovery prior to the test
Discharge rate at end of airlifting test was 0.08L/s.

C:\Users\slabrash\Desktop\Rev\PH12-4-2 Airlift 3 416'-596'.xlsx\Hvorslev

REV	DATE	DESCRIPTION	PREP'D	CHK'D	APP'D
0	21OCT13	ISSUED WITH REPORT	FTJ	CAS	FTJ

**NEW GOLD INC.
BLACKWATER GOLD PROJECT**

**HYDRAULIC CONDUCTIVITY CALCULATION
USING HVORSLEV (1951) METHOD**

Print 12/04/13 17:05

Project No. VA101-457/6
Field Technician MAS
Analyst FTJ

Observation Well **PH12-4-2**
Test 4

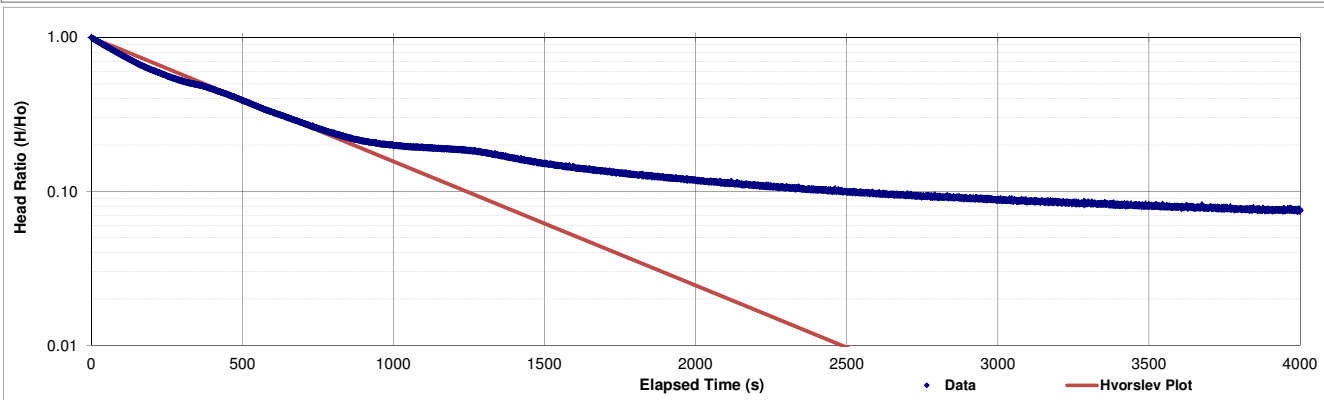
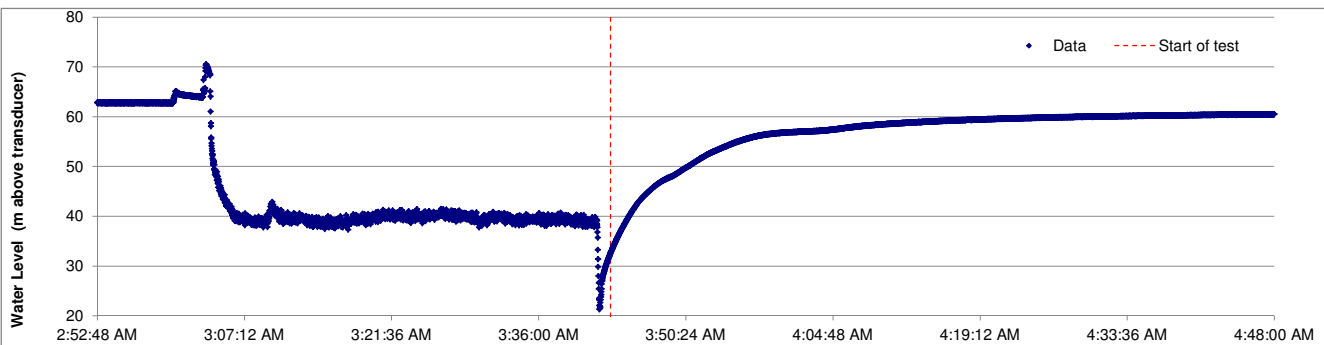
Monitoring Instrument Type Transducer
Slug Dimensions and Type Airlift Water Level Depression
Test Date 3-Dec-12

Drill-hole diameter, D 0.096 m
Effective diameter of drillrods, d_e 0.078 m
Top of test zone 178.9 m
Bottom of test zone 227.7 m
Test Length, L 48.8 m

Slug Injected, Time = 0 3:43:02 AM
Initial water level 62.8 m above transducer
Water level after slug 32.6 m above transducer
Change In Water Level, H_0 -30.2 m

Transmissivity, T $1E-05$ m²/s
Hydraulic Conductivity, K $2E-07$ m/s

Intercept 1.0



TEST COMMENTS:

Discharge rate at end of airlifting test was 0.05L/s.

C:\Users\slabrash\Desktop\Rev\[PH12-4-2 Airlift 4 597-747].xlsx\Hvorslev

0	21OCT13	ISSUED WITH REPORT	FTJ	CAS	FTJ
REV	DATE	DESCRIPTION	PREP'D	CHK'D	APP'D

**NEW GOLD INC.
BLACKWATER GOLD PROJECT**

**AIRLIFT PUMPING RECOVERY TEST
USING THIS METHOD (1935)**

25/11/2013 11:31

Project No. VA101-457/6
Field Technician LEP
Analyst MAS
Test Date 04-Dec-12

Drill-hole **PH12-4-2**
Test 5

Drill-hole Diameter 0.096 m (HQ)
Stinger Diameter 0.019 m
Top of Test Zone 227.7 mbgs
Bottom of Test Zone 294.7 mbgs
Test Length 67.1 m
Stinger Depth 61.6 mbgs

Start Airlifting 9:25 AM
End Airlifting 10:08 AM

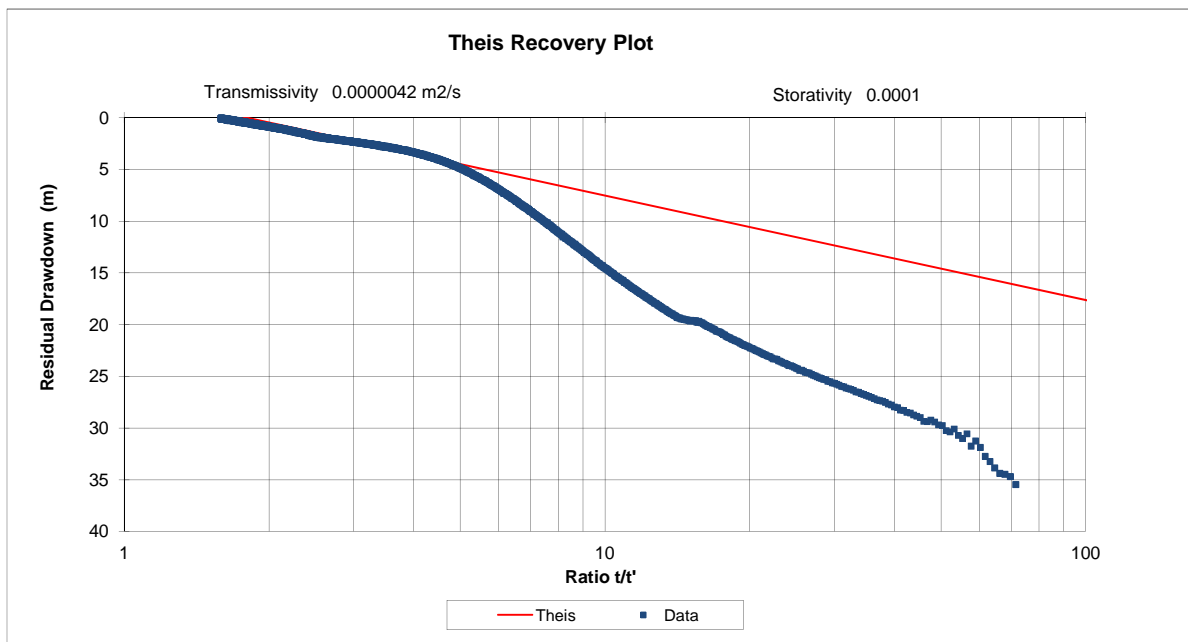
Final Water Level 59.3 m above transducer
Initial Water Level 38.0 m above transducer
Drawdown 21.3 m

Well No.	Description	Distance (m)	Start (s)	Pumping Rate (m ³ /s)
1	Start Airlifting	0.05	0	2.32E-04
1	End Airlifting	0.05	2,610	-2.32E-04

Air Compressor Rating 400 cfm
Air Pressure During Test 100 psi

Hydraulic Conductivity, K 6E-08 m/s
Transmissivity, T 4E-06 m²/s

Storativity, S 1E-04
Offset 1.0



TEST COMMENTS:

M:\1\01\00457\06\A\Data\Task 206 - Phase 5 - Open Hydrogeological Site Investigation\Observation wells\Hydraulic Testing\Analysis\Reviewed\PW4 location\PH12-4-2_Airlift recovery\PH12-4-2 Airlift 5 747'-967'.xlsx\This Recovery Analysis

REV	DATE	ISSUED WITH REPORT DESCRIPTION	FTJ PREPD	CAS CHKD	KJB APPD
0	21OCT13	ISSUED WITH REPORT			

**NEW GOLD INC.
BLACKWATER GOLD PROJECT**

**HYDRAULIC CONDUCTIVITY CALCULATION
USING HVORSLEV (1951) METHOD**

Print 12/04/13 17:06

Project No. VA101-457/6
Field Technician MAS
Analyst FTJ

Observation Well **PH12-4-3**
Test 1

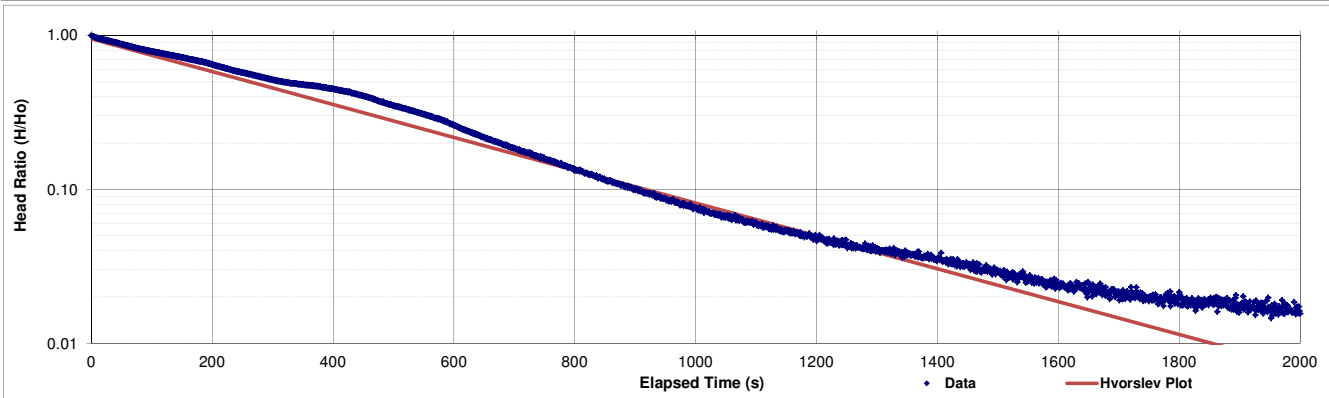
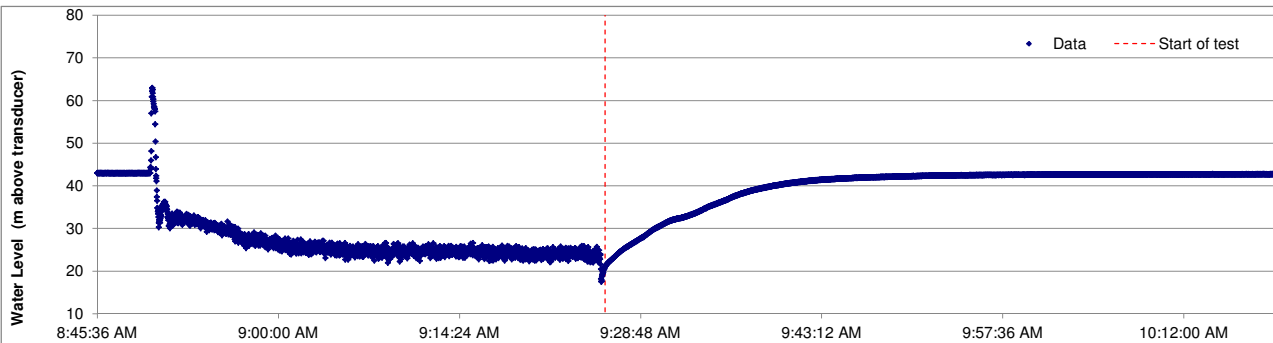
Monitoring Instrument Type Transducer
Slug Dimensions and Type Airlift Water Level Depression
Test Date 7-Dec-12

Drill-hole diameter, D 0.096 m
Effective diameter of drillrods, d_e 0.078 m
Top of test zone 39.9 m
Bottom of test zone 85.6 m
Test Length, L 45.7 m

Slug Injected, Time = 0 9:25:58 AM
Initial water level 43.0 m above transducer
Water level after slug 20.9 m above transducer
Change In Water Level, H_0 -22.1 m

Transmissivity, T $1E-05$ m²/s
Hydraulic Conductivity, K $3E-07$ m/s

Intercept 1.0



TEST COMMENTS:

Discharge rate at end of airlifting test was 0.2L/s.

C:\Users\slabrash\Desktop\Rev\PH12-4-3 Airlift 1 131'-281'.xlsx\Hvorslev

0	21OCT13	ISSUED WITH REPORT	FTJ	CAS	FTJ
REV	DATE	DESCRIPTION	PREP'D	CHK'D	APP'D

**NEW GOLD INC.
BLACKWATER GOLD PROJECT**

**HYDRAULIC CONDUCTIVITY CALCULATION
USING HVORSLEV (1951) METHOD**

Print 11/25/13 13:11

Project No. VA101-457/6
Field Technician TDS
Analyst FTJ

Observation Well **PH12-4-3**
Test 2

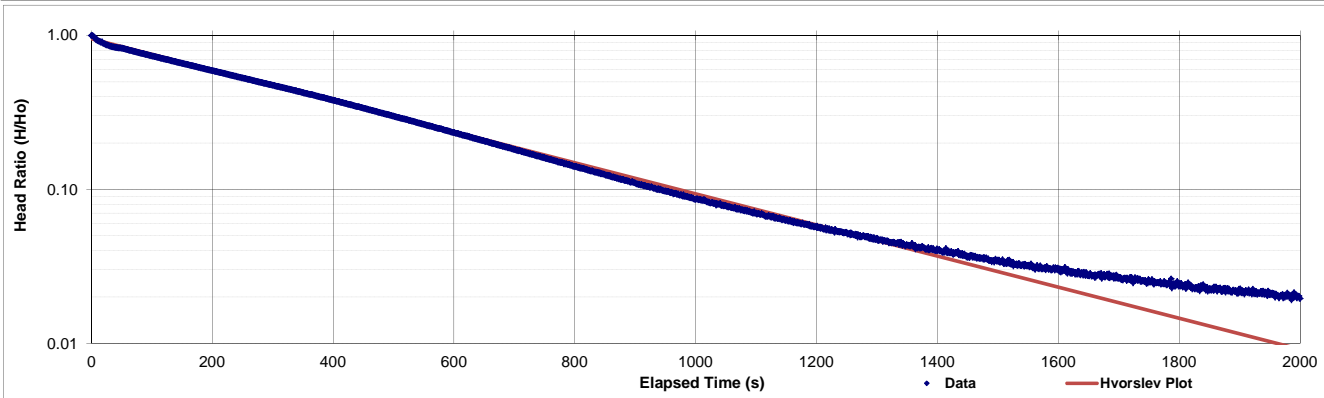
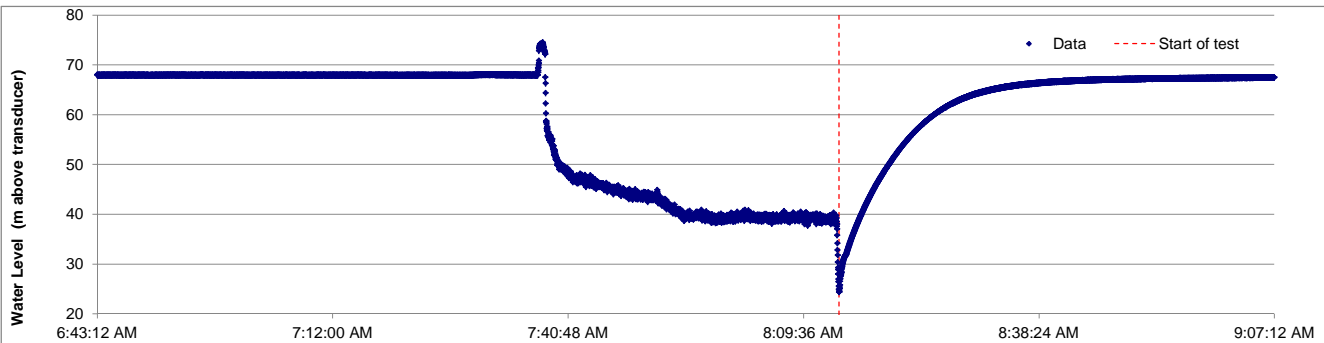
Monitoring Instrument Type Transducer
Slug Dimensions and Type Airlift Water Level Depression
Test Date 08-Dec-12

Drill-hole diameter, D 0.096 m
Effective diameter of drillrods, d_e 0.078 m
Top of test zone 85.6 m
Bottom of test zone 161.8 m
Test Length, L 76.2 m

Slug Injected, Time = 0 8:13:57 AM
Initial water level 68.0 m above transducer
Water level after slug 24.4 m above transducer
Change In Water Level, H_0 -43.6 m

Transmissivity, T $1E-05$ m²/s
Hydraulic Conductivity, K $2E-07$ m/s

Intercept 1.0



TEST COMMENTS:

Discharge rate at end of airlifting test was 0.2L/s.

M:\1\01\00457\06\A\Data\Task 206 - Phase 5 - Open Hydrogeological Site Investigation\Observation wells\Hydraulic Testing\Analysis\Reviewed\PW4 location\PH12-4-3_Airlift recovery\PH12-4-3 Airlift 2 281 - 531'.xlsx\Hvorslev

REV	DATE	ISSUED WITH REPORT DESCRIPTION	PREP'D	CHK'D	APP'D
0	21OCT13	ISSUED WITH REPORT	FTJ	CAS	FTJ

**NEW GOLD INC.
BLACKWATER GOLD PROJECT**

**HYDRAULIC CONDUCTIVITY CALCULATION
USING HVORSLEV (1951) METHOD**

Print 11/28/13 8:32

Project No. VA101-457/6
Field Technician TDS
Analyst FTJ

Observation Well **PH12-4-3**
Test 3

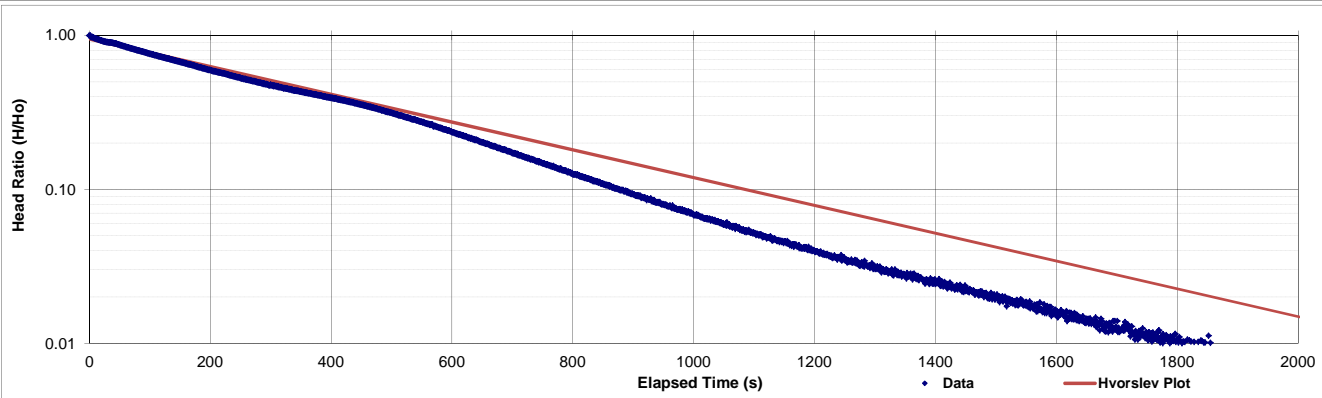
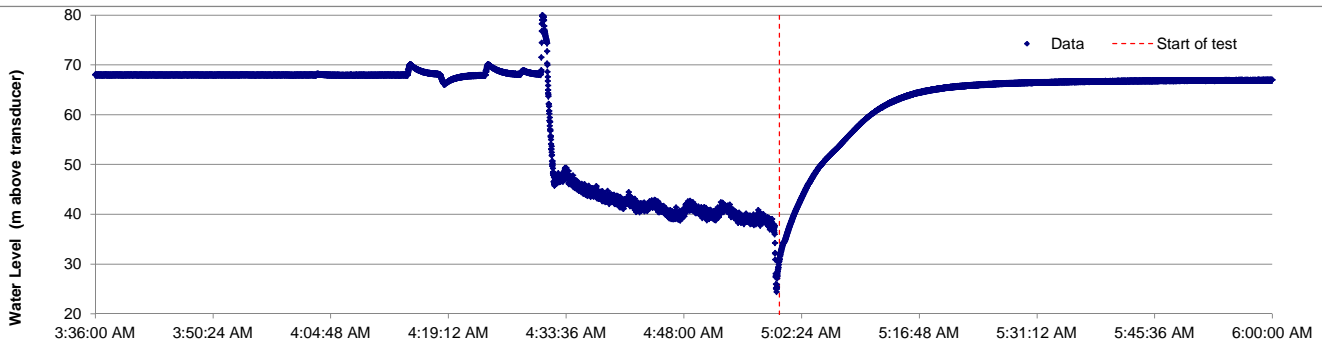
Monitoring Instrument Type Transducer
Slug Dimensions and Type Airlift Water Level Depression
Test Date 09-Dec-12

Drill-hole diameter, D 0.096 m
Effective diameter of drillrods, d_e 0.078 m
Top of test zone 161.8 m
Bottom of test zone 228.9 m
Test Length, L 67.1 m

Slug Injected, Time = 0 4:59:42 AM
Initial water level 66.8 m above transducer
Water level after slug 30.9 m above transducer
Change In Water Level, H_0 -35.9 m

Transmissivity, T $1E-05$ m²/s
Hydraulic Conductivity, K $2E-07$ m/s

Intercept 1.0



TEST COMMENTS:

Discharge rate at end of airlifting test was 0.4L/s.

M:\1\01\00457\06\A\Data\Task 206 - Phase 5 - Open Hydrogeological Site Investigation\Observation wells\Hydraulic Testing\Analysis\Reviewed\PW4 location\PH12-4-3_Airlift recovery\PH12-4-3 Airlift 3 531 - 751'.xlsx\Hvorslev

REV	DATE	ISSUED WITH REPORT DESCRIPTION	PREP'D	CHK'D	APP'D
0	21OCT13	ISSUED WITH REPORT	FTJ	CAS	FTJ

**NEW GOLD INC.
BLACKWATER GOLD PROJECT**

**HYDRAULIC CONDUCTIVITY CALCULATION
USING HVORSLEV (1951) METHOD**

Print 11/25/13 13:31

Project No. VA101-457/6
Field Technician TDS
Analyst FTJ

Observation Well **PH12-4-3**
Test 4

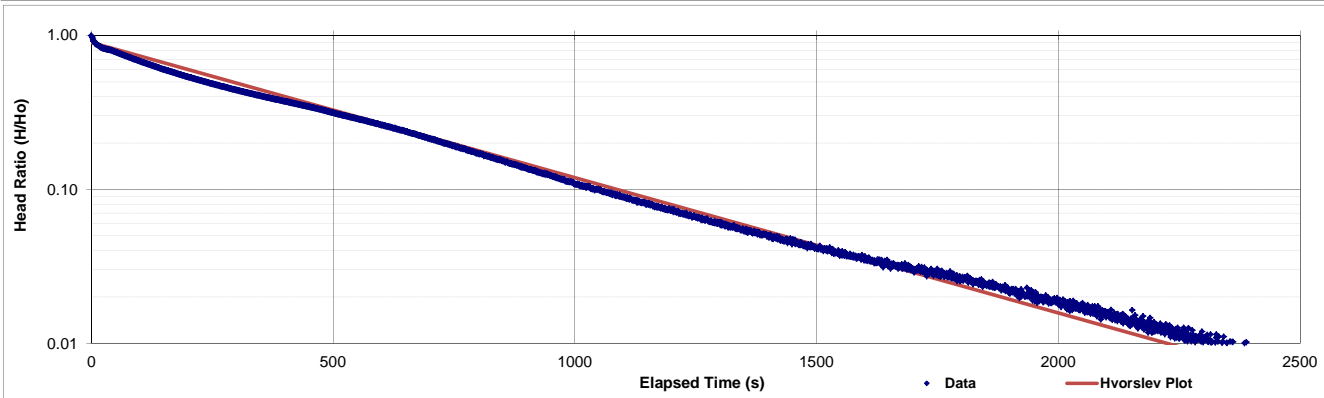
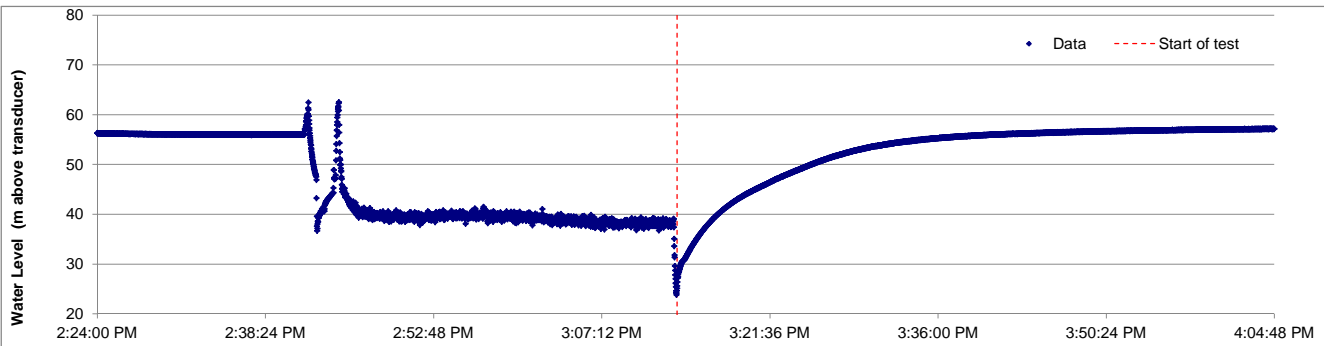
Monitoring Instrument Type Transducer
Slug Dimensions and Type Airlift Water Level Depression
Test Date 10-Dec-12

Drill-hole diameter, D 0.096 m
Effective diameter of drillrods, d_e 0.078 m
Top of test zone 228.9 m
Bottom of test zone 289.9 m
Test Length, L 61.0 m

Slug Injected, Time = 0 3:13:38 PM
Initial water level 57.1 m above transducer
Water level after slug 24.6 m above transducer
Change In Water Level, H_0 -32.5 m

Transmissivity, T $1E-05$ m²/s
Hydraulic Conductivity, K $2E-07$ m/s

Intercept 0.9



TEST COMMENTS:

Discharge rate at end of airlifting test was 0.2L/s.

M:\1\01\00457\06\A\Data\Task 206 - Phase 5 - Open Hydrogeological Site Investigation\Observation wells\Hydraulic Testing\Analysis\Reviewed\PW4 location\PH12-4-3_Airlift recovery\PH12-4-3 Airlift 4 751 - 951'.xlsx\Hvorslev

REV	DATE	ISSUED WITH REPORT DESCRIPTION	PREP'D	CHK'D	APP'D
0	21OCT13	ISSUED WITH REPORT	FTJ	CAS	FTJ

**NEW GOLD INC.
BLACKWATER GOLD PROJECT**

**HYDRAULIC CONDUCTIVITY CALCULATION
USING HVORSLEV (1951) METHOD**

Print 12/04/13 15:37

Project No. VA101-457/6
Field Technician LEP
Analyst FTJ

Observation Well **PH12-4-3**
Test 5

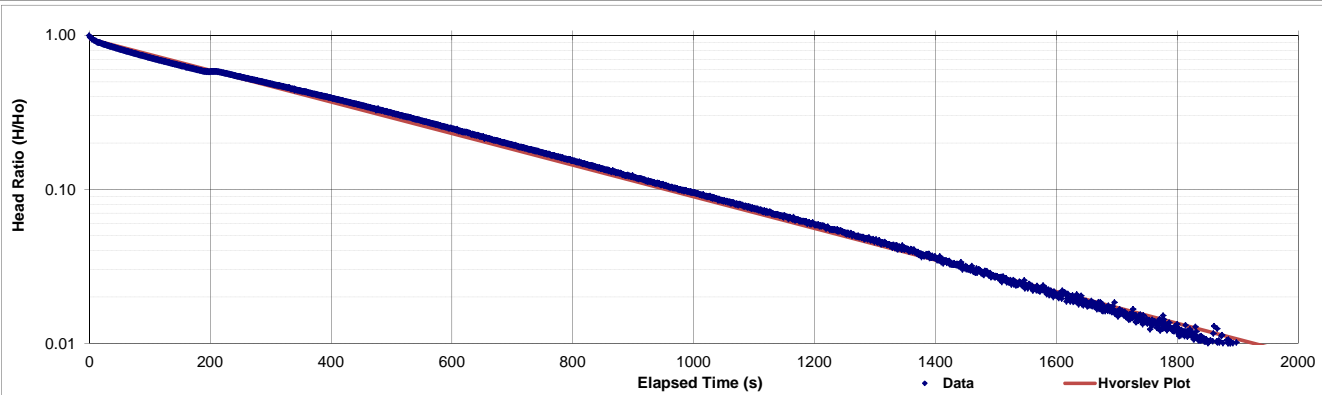
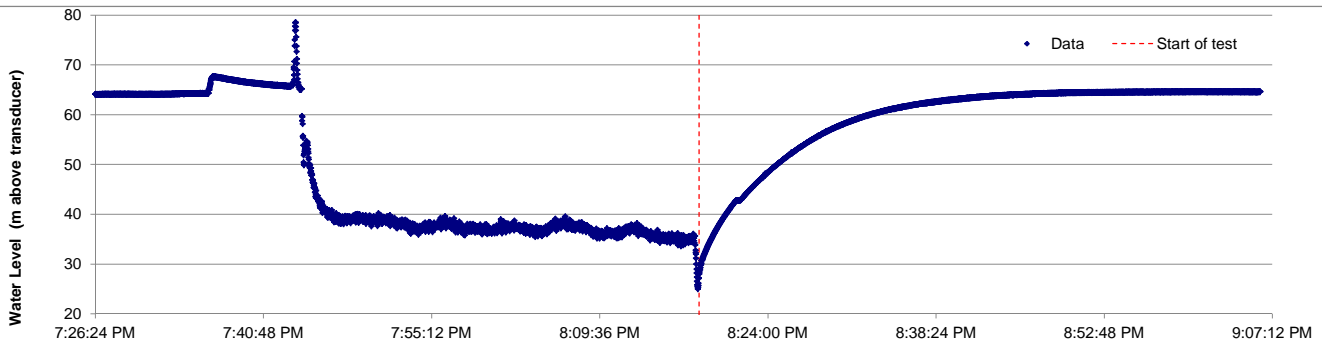
Monitoring Instrument Type Transducer
Slug Dimensions and Type Airlift Water Level Depression
Test Date 11-Dec-12

Drill-hole diameter, D 0.096 m
Effective diameter of drillrods, d_e 0.078 m
Top of test zone 289.9 m
Bottom of test zone 350.8 m
Test Length, L 60.9 m

Slug Injected, Time = 0 8:18:06 PM
Initial water level 64.8 m above transducer
Water level after slug 27.1 m above transducer
Change In Water Level, H_0 -37.7 m

Transmissivity, T $1E-05$ m²/s
Hydraulic Conductivity, K $2E-07$ m/s

Intercept 1.0



TEST COMMENTS:

Static water level estimated from post-test water level recovery
Discharge rate at end of airlifting test was 0.1L/s.

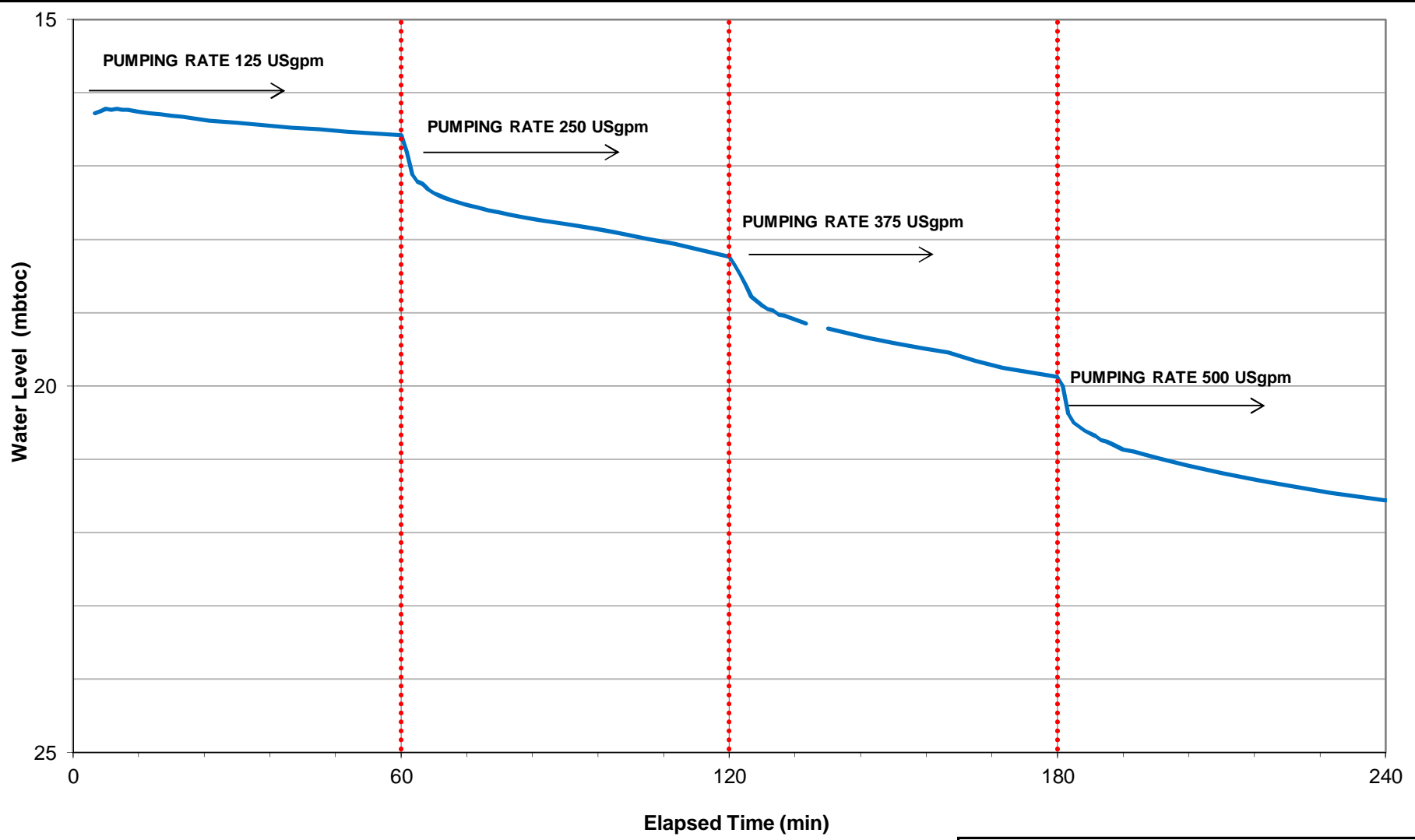
M:\1\01\00457\06\A\Report\9 - Open Pit Water Management Plan\Appendices\B - Hydraulic Testing\B.2 Hydraulic Testing - Observation Wells\Rev\PH12-4-3 Airlift 5 951' - 1151'.xlsx\Hvorslev

REV	DATE	ISSUED WITH REPORT DESCRIPTION	PREP'D	CHK'D	APP'D
0	21OCT13	ISSUED WITH REPORT	FTJ	CAS	FTJ

APPENDIX B3

PUMPING WELL PW13-1 HYDRAULIC RESULTS AND ANALYSIS SHEETS

(Pages B3-1 to B3-21)

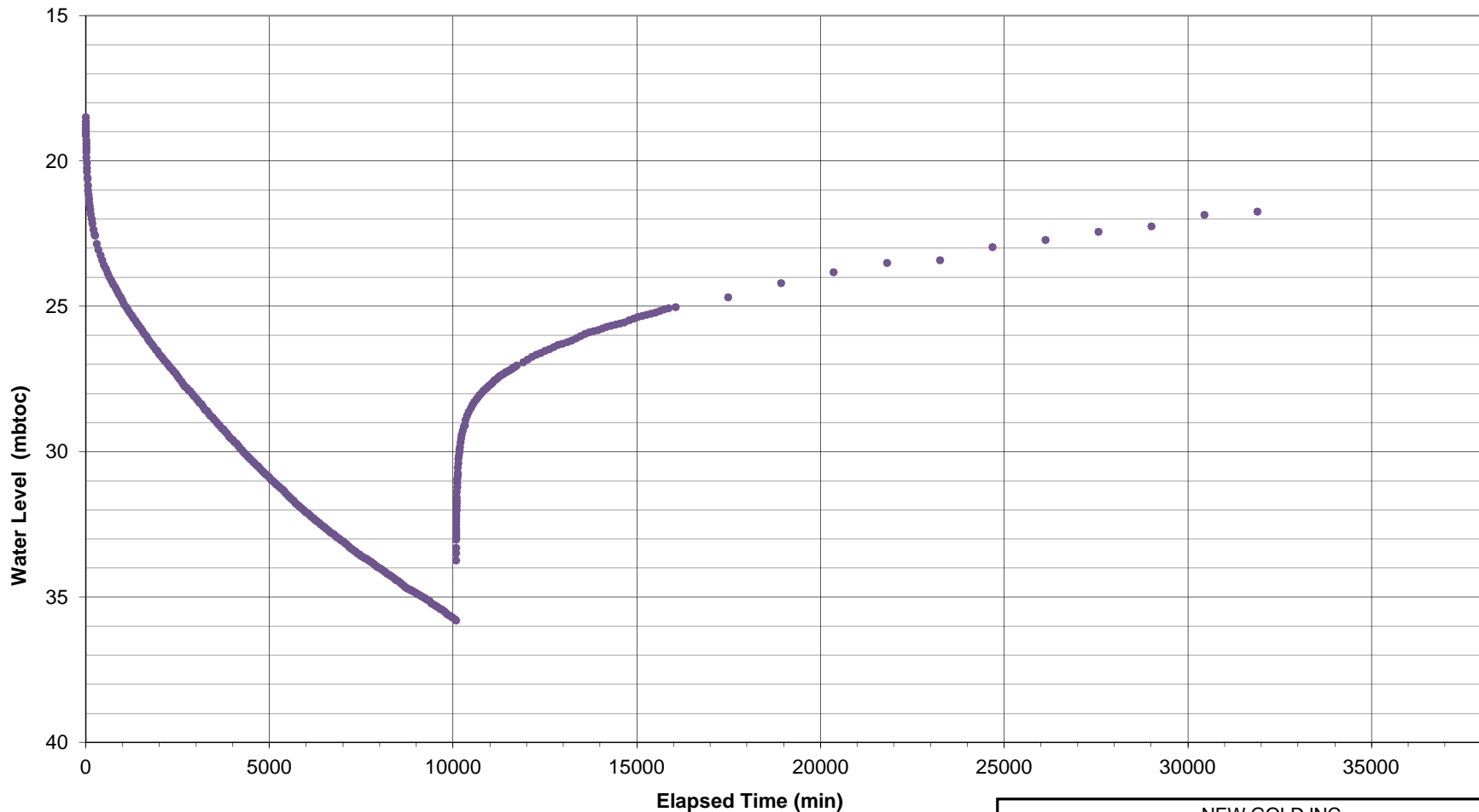


NOTES:

1. PUMP TESTING COMPLETED BY PRECISION PUMPING SERVICES ON 25 JULY 2013. RECOVERY MONITORED BY PRECISION PUMPING SERVICES AND NEW GOLD INC STAFF.
2. MANUAL WATER LEVEL MEASUREMENTS WERE TAKEN FROM SET REFERENCE POINT USING AN RST WATER LEVEL METER.

NEW GOLD INC.	
BLACKWATER GOLD PROJECT	
PW13-1 STEP TEST (125 - 500 USGPM)	
<i>Knight Piésold</i> CONSULTING	P/A NO. VA101-00457/6
	REF. NO. 9
FIGURE B3.1	
REV 0	

0	23AUG'13	ISSUED WITH REPORT	FTJ	CAS	KJB
REV	DATE	DESCRIPTION	PREP'D	CHK'D	APP'D

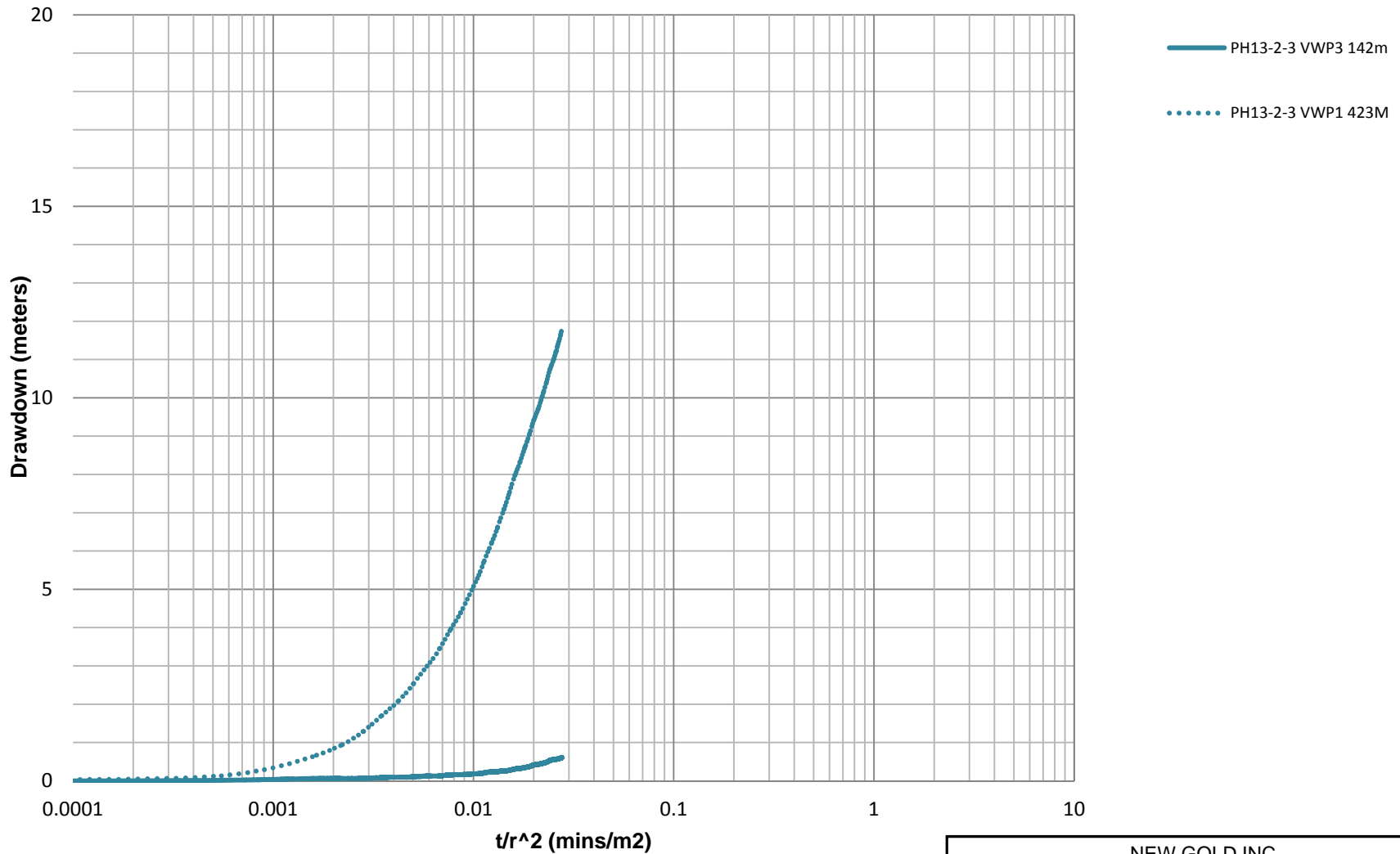


NOTES:

1. PUMP TEST AT PW13-1 AT A RATE OF 0.0315 M³/SECOND FOR 168 HOURS
2. PUMP TESTING COMPLETED BY PRECISION PUMPING SERVICES BETWEEN 26 JULY 2013 AND 2 AUGUST 2013. RECOVERY MONITORED BY PRECISION PUMPING SERVICES AND NEW GOLD INC STAFF.
3. MANUAL WATER LEVEL MEASUREMENTS WERE TAKEN FROM SET REFERENCE POINT USING AN RST WATER LEVEL METER.

NEW GOLD INC.	
BLACKWATER GOLD PROJECT	
PW13-1 PUMPING WELL DRAWDOWN CONSTANT RATE PUMPING TEST	
<i>Knight Piésold</i> CONSULTING	P/A NO. VA101-00457/6 REF. NO. 9 FIGURE B3.2
	REV 0

REV	DATE	DESCRIPTION	PREPD	CHK'D	APPD
0	23AUG'13	ISSUED WITH REPORT	FTJ	CAS	KJB

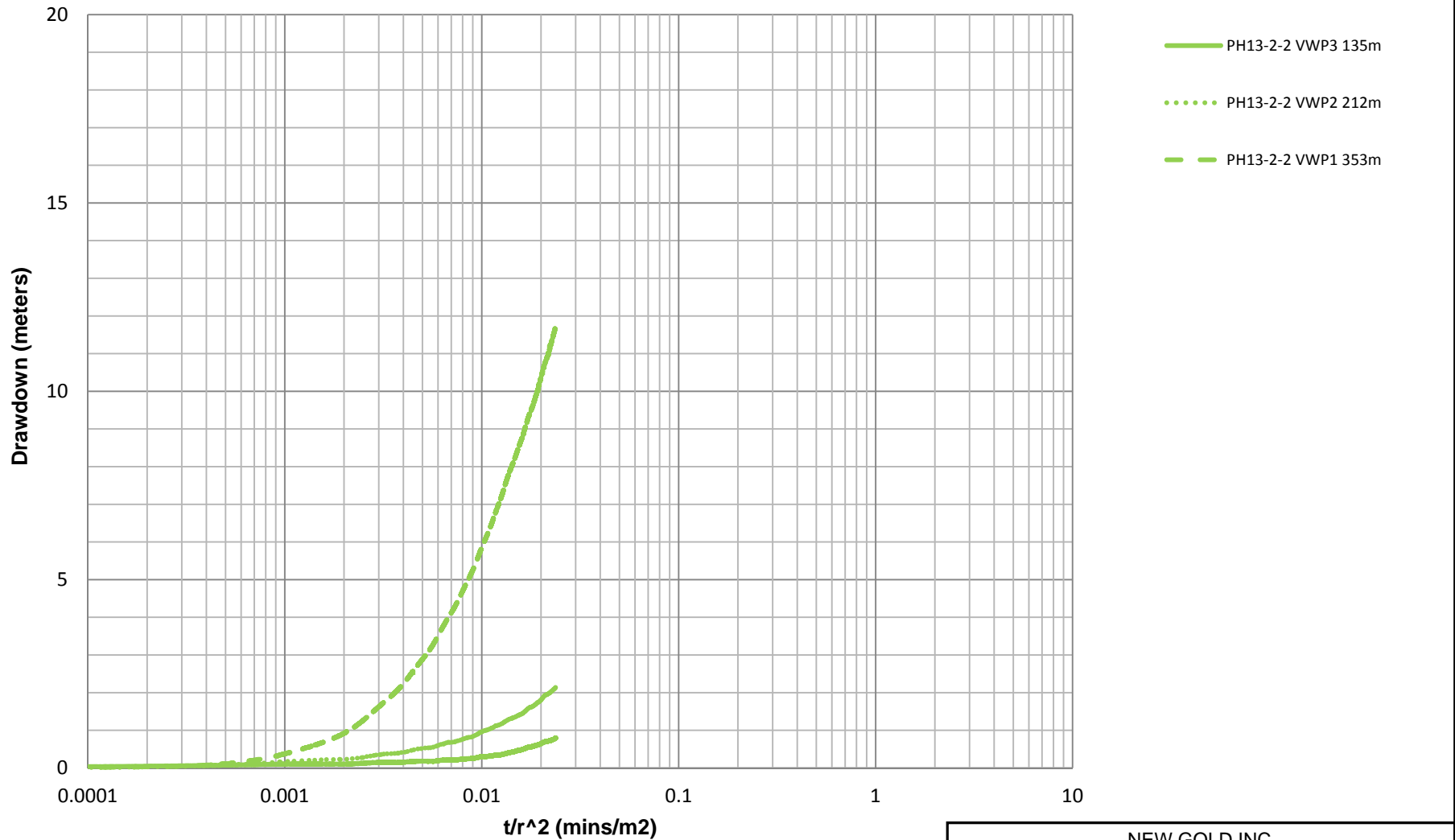


NOTES:

1. DRAWDOWN FROM VWP DATA IN OBSERVATION WELL.
2. ALL VWP DEPTHS ARE METERS BELOW GROUND LEVEL.
3. VWP DATA IS NOT INCLUDED IF NO DRAWDOWN WAS NOTED DURING PUMPING TEST.

NEW GOLD INC.		
BLACKWATER GOLD PROJECT		
OBSERVATION VWP PH13-2-3 DATA PLOT FROM PUMP TEST AT PW13-1		
<i>Knight Piésold</i> CONSULTING	P/A NO. VA101-00457/6	REF. NO. 9
	FIGURE B3.3	
		REV 0

0	23AUG'13	ISSUED WITH REPORT	FTJ	CAS	KJB
REV	DATE	DESCRIPTION	PREP'D	CHK'D	APP'D

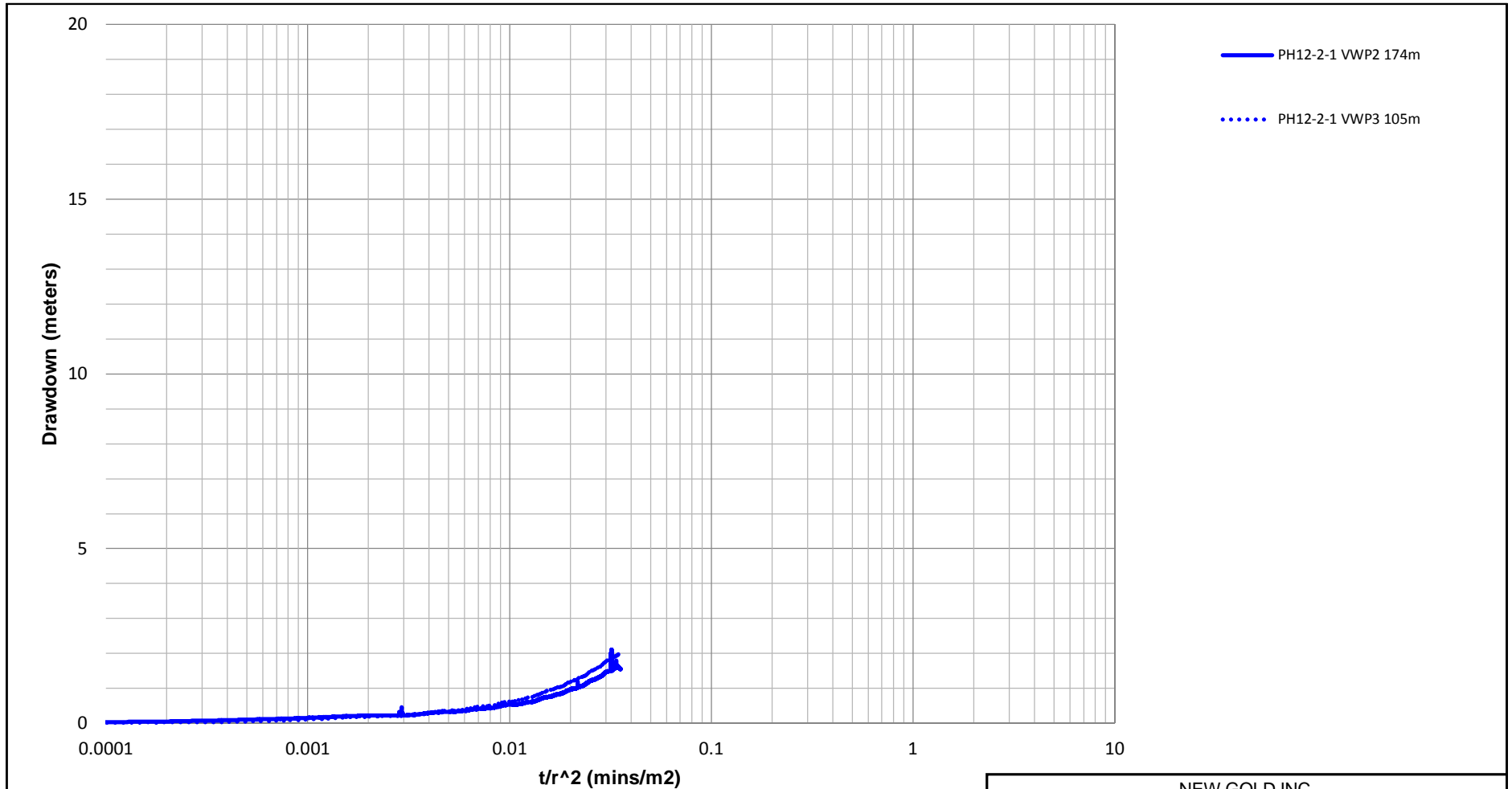


NOTES:

1. DRAWDOWN FROM VWP DATA IN OBSERVATION WELL.
2. ALL VWP DEPTHS ARE METERS BELOW GROUND LEVEL.
3. VWP DATA IS NOT INCLUDED IF NO DRAWDOWN WAS NOTED DURING PUMPING TEST.

NEW GOLD INC.		
BLACKWATER GOLD PROJECT		
OBSERVATION VWP PH13-2-2 DATA PLOT FROM PUMP TEST AT PW13-1		
<i>Knight Piésold</i> CONSULTING	P/A NO. VA101-00457/6	REF. NO. 9
	FIGURE B3.4	
REV 0		

0	23AUG'13	ISSUED WITH REPORT	FTJ	CAS	KJB
REV	DATE	DESCRIPTION	PREP'D	CHK'D	APP'D

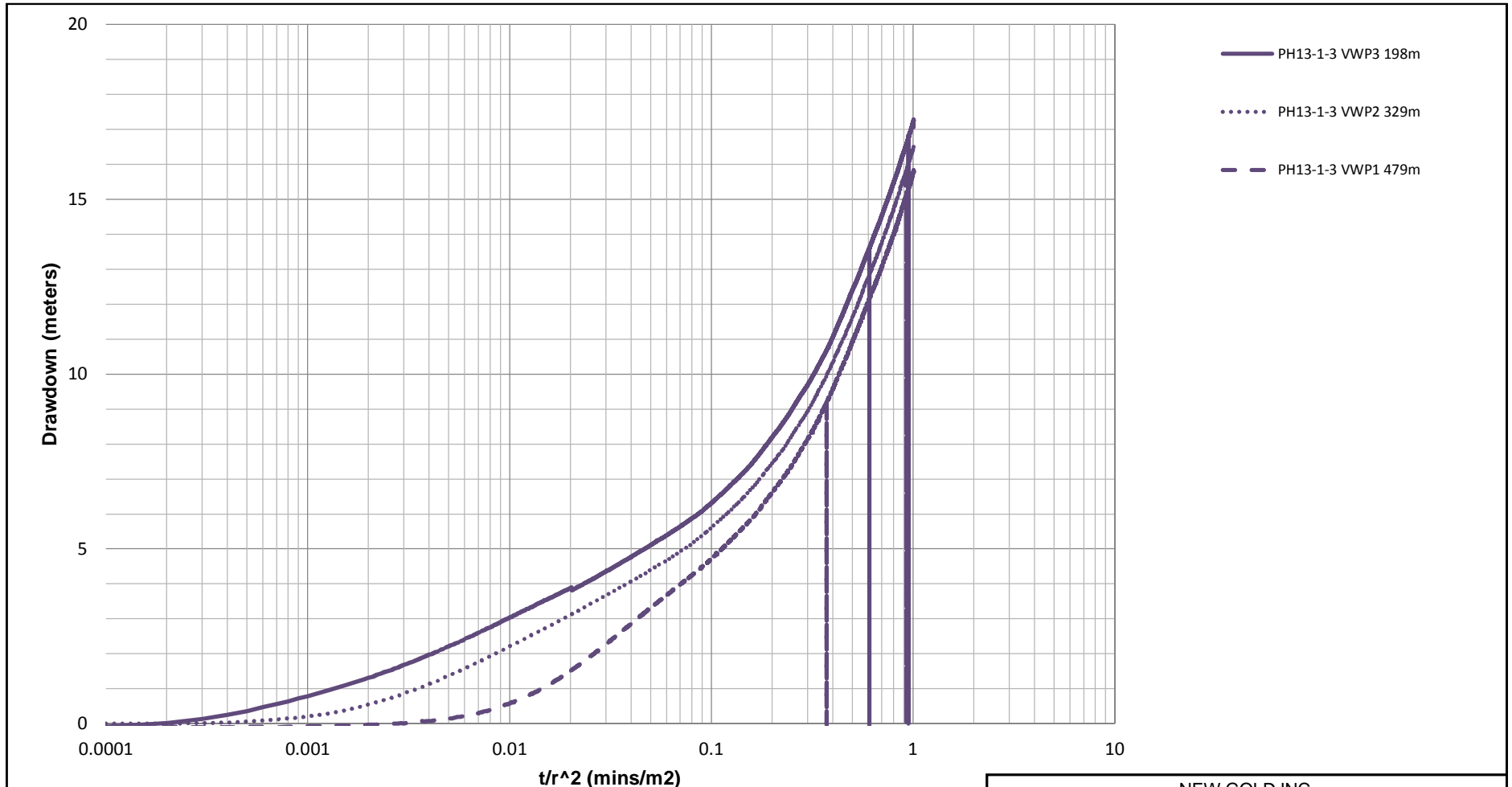


NOTES:

1. DRAWDOWN FROM VWP DATA IN OBSERVATION WELL.
2. ALL VWP DEPTHS ARE METERS BELOW GROUND LEVEL.
3. VWP DATA IS NOT INCLUDED IF NO DRAWDOWN WAS NOTED DURING PUMPING TEST.

NEW GOLD INC.	
BLACKWATER GOLD PROJECT	
OBSERVATION WELL PH12-2-1 RESPONSE FROM PUMP TEST AT PW13-1	
<i>Knight Piésold</i> CONSULTING	P/A NO. VA101-00457/6
REF. NO. 9	
FIGURE B3.5	
REV 0	

0	23AUG'13	ISSUED WITH REPORT	FTJ	CAS	KJB
REV	DATE	DESCRIPTION	PREPD	CHKD	APPD

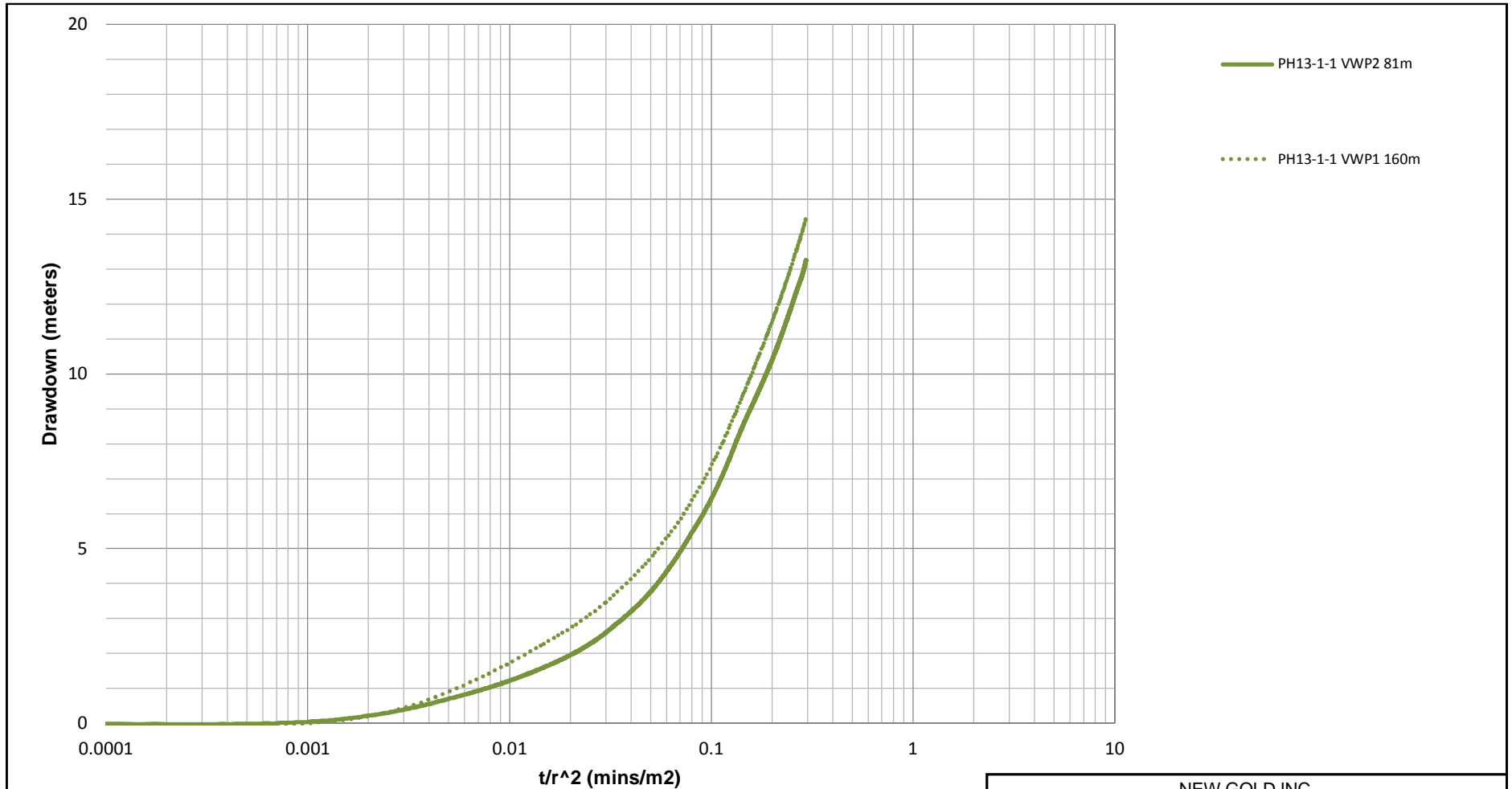


NOTES:

1. DRAWDOWN FROM VWP DATA IN OBSERVATION WELL.
2. ALL VWP DEPTHS ARE METERS BELOW GROUND LEVEL.

NEW GOLD INC.	
BLACKWATER GOLD PROJECT	
OBSERVATION WELL PH13-1-3 RESPONSE FROM PUMP TEST AT PW13-1	
<i>Knight Piésold</i> CONSULTING	P/A NO. VA101-00457/6
REF. NO. 9	
FIGURE B3.6	
REV 0	

0	23AUG'13	ISSUED WITH REPORT	FTJ	CAS	KJB
REV	DATE	DESCRIPTION	PREPD	CHK'D	APPD

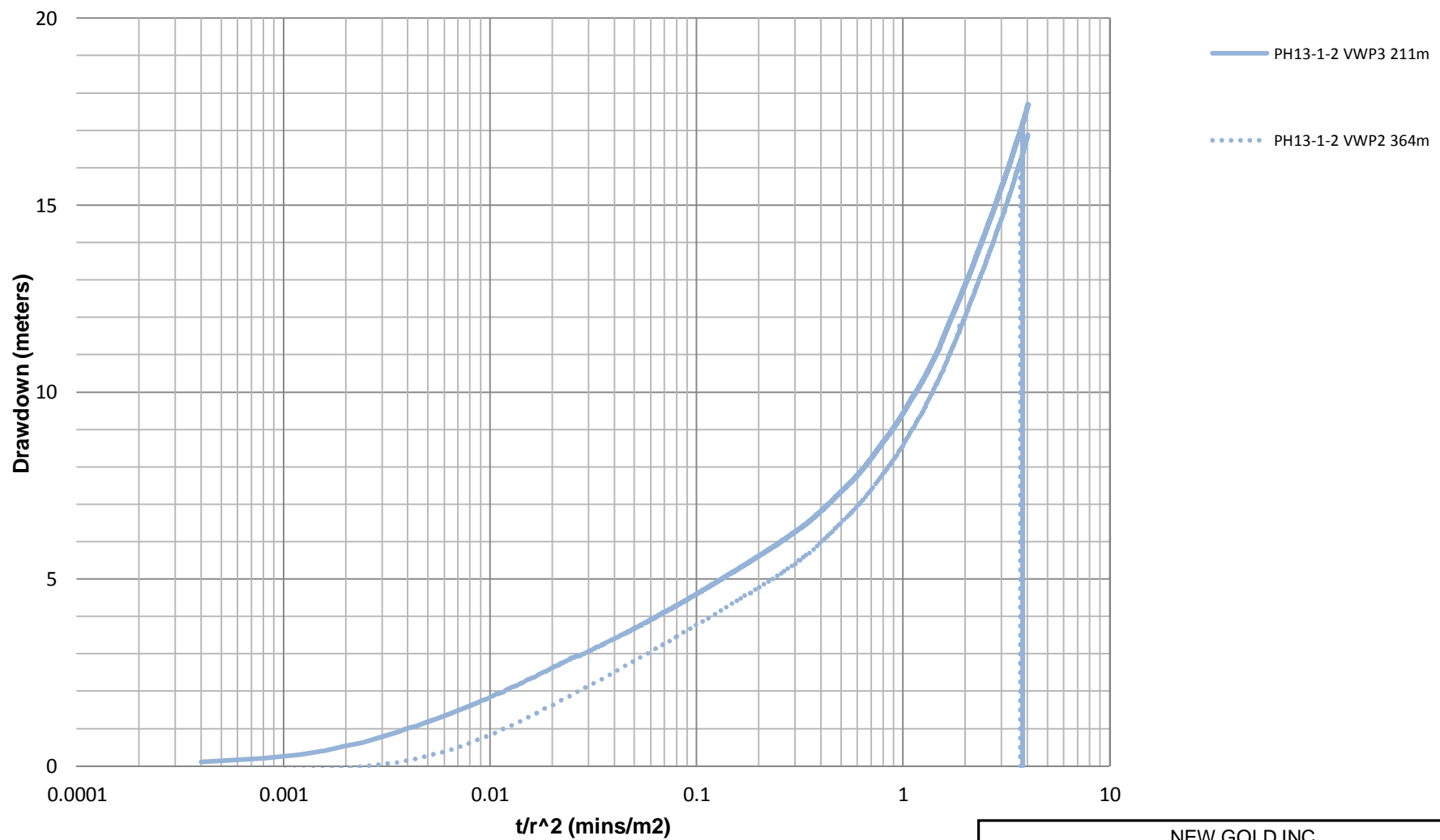


NOTES:

1. DRAWDOWN FROM VWP DATA IN OBSERVATION WELL.
2. ALL VWP DEPTHS ARE METERS BELOW GROUND LEVEL.
3. VWP DATA IS NOT INCLUDED IF NO DRAWDOWN WAS NOTED DURING PUMPING TEST.

NEW GOLD INC.	
BLACKWATER GOLD PROJECT	
OBSERVATION WELL PH13-1-1 RESPONSE FROM PUMP TEST AT PW13-1	
<i>Knight Piésold</i> CONSULTING	P/A NO. VA101-00457/6 REF. NO. 9 FIGURE B3.7 REV 0

0	23AUG'13	ISSUED WITH REPORT	FTJ	CAS	KJB
REV	DATE	DESCRIPTION	PREPD	CHK'D	APPD

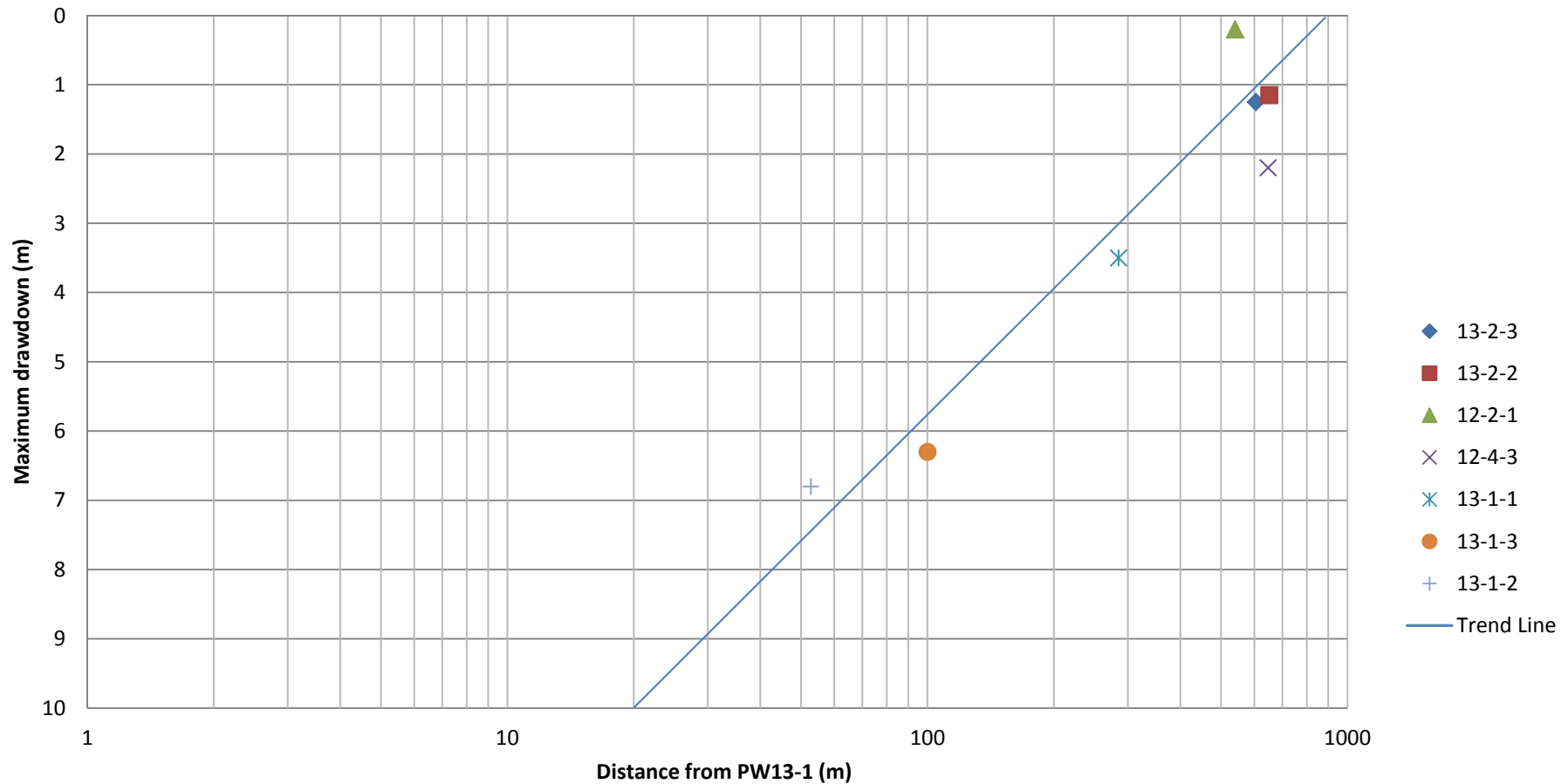


NOTES:

1. DRAWDOWN FROM VWP DATA IN OBSERVATION WELL.
2. ALL VWP DEPTHS ARE METERS BELOW GROUND LEVEL.
3. VWP DATA IS NOT INCLUDED IF NO DRAWDOWN WAS NOTED DURING PUMPING TEST.

NEW GOLD INC.	
BLACKWATER GOLD PROJECT	
OBSERVATION WELL PH13-1-2 RESPONSE FROM PUMP TEST AT PW13-1	
<i>Knight Piésold</i> CONSULTING	P/A NO. VA101-00457/6 REF. NO. 9 FIGURE B3.8
REV 0	REV 0

0	23AUG'13	ISSUED WITH REPORT	FTJ	CAS	KJB
REV	DATE	DESCRIPTION	PREP'D	CHK'D	APP'D



NOTES:

1. DATA POINTS REPRESENT THE MAXIMUM DRAWDOWN RECORDED BY VWPS IN EACH OBSERVATION WELL AT 1000 MINS AFTER PUMPING STARTED FOR THE CONSTANT RATE TEST.
2. TRANSMISSIVITY WAS CALCULATED USING THE HEAD CHANGE OVER ONE LOG CYCLE OF THE TRENDLINE.

NEW GOLD INC.	
BLACKWATER GOLD PROJECT	
DISTANCE-DRAWDOWN PLOT FOR CONSTANT RATE PUMPING TEST AT PW13-1	
<i>Knight Piésold</i> CONSULTING	P/A NO. VA101-00457/6
	REF. NO. 9
FIGURE B3.9	
REV 0	

0	30NOV'13	ISSUED WITH REPORT	FTJ	CAS	KJB
REV	DATE	DESCRIPTION	PREP'D	CHK'D	APP'D

**NEW GOLD INC.
BLACKWATER GOLD PROJECT**

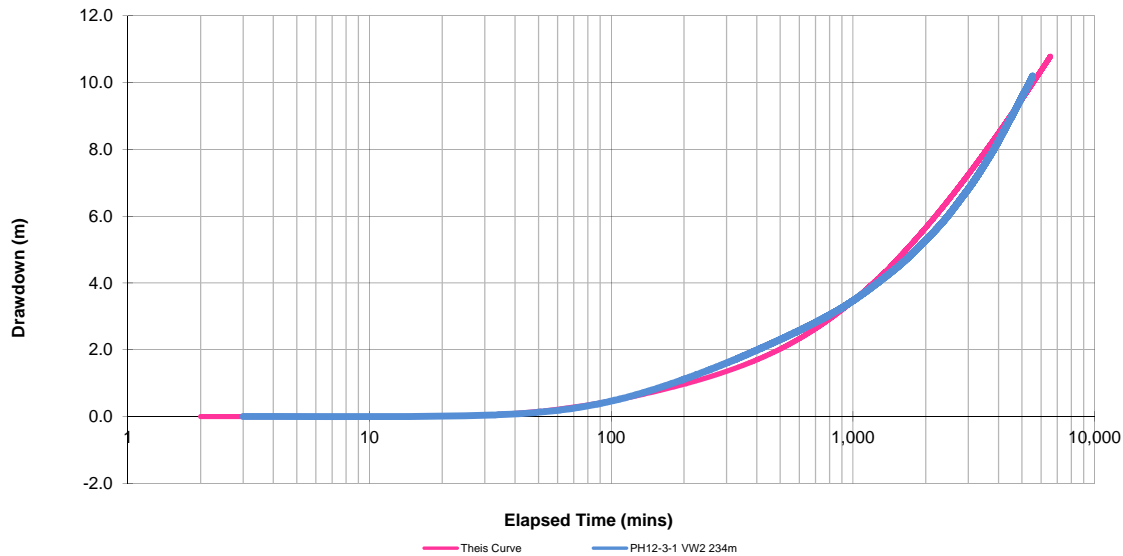
**HYDRAULIC PROPERTIES CALCULATION
USING THEIS METHOD (1935)**

21/11/2013 10:26

Pumping Well: PW13-1
Measurement Well: PH13-1-1
Distance: 185 m
VWP depth: 160 m
Transmissivity: 2E-03 m²/s
Storativity: 1E-03
Hydraulic Conductivity: 5.E-06 m/sec

Test start: 7/26/13 7:30 AM
Test stop: 8/2/13 7:30 AM
Test duration: 604800 sec
Field technician: FTJ
Analyst: FTJ

Well No.	Description	Distance (m)	start (s)	pumping rate (m3/s)
1	PH13-1-1	185	0	3.15E-02
2		0	0	0.00E+00
3	Image well 1	600	0	3.15E-02
4		0	0	0.00E+00
5	Image well 2	800	0	3.15E-02
6		0	0	0.00E+00
7	Image well 3	800	0	3.15E-02
8		0	0	0.00E+00
9	Image well 4	800	0	3.15E-02
10		0	0	0.00E+00



TEST COMMENTS:

Image wells were used in the analysis to assess the potential impact of flow boundaries on results. Each image well represents a flow boundary.

M:\1\01\00457\06\A\Report\9 - Open Pit Water Management Plan\Appendices\B - Hydraulic Testing\B.2 Pumping Test Analysis\This analysis\PH13-1-1.xls]This PH13-1-1

0	28/07/2011	ISSUED WITH REPORT	FTJ	CAS	KJB
REV	DATE	DESCRIPTION	PREP'D	CHK'D	APP'D

**NEW GOLD INC.
BLACKWATER GOLD PROJECT**

**PUMPING RECOVERY TEST
USING THIS METHOD (1935)**

21/11/2013 10:28

Project No. VA101-00457/6
Field Technician FTJ
Analyst FTJ
Test Date 26-Jul-13
Drill-hole Diameter 0.20 m
Top of Test Zone 0 mbgs
Bottom of Test Zone 500 mbgs
Test Length 500 m

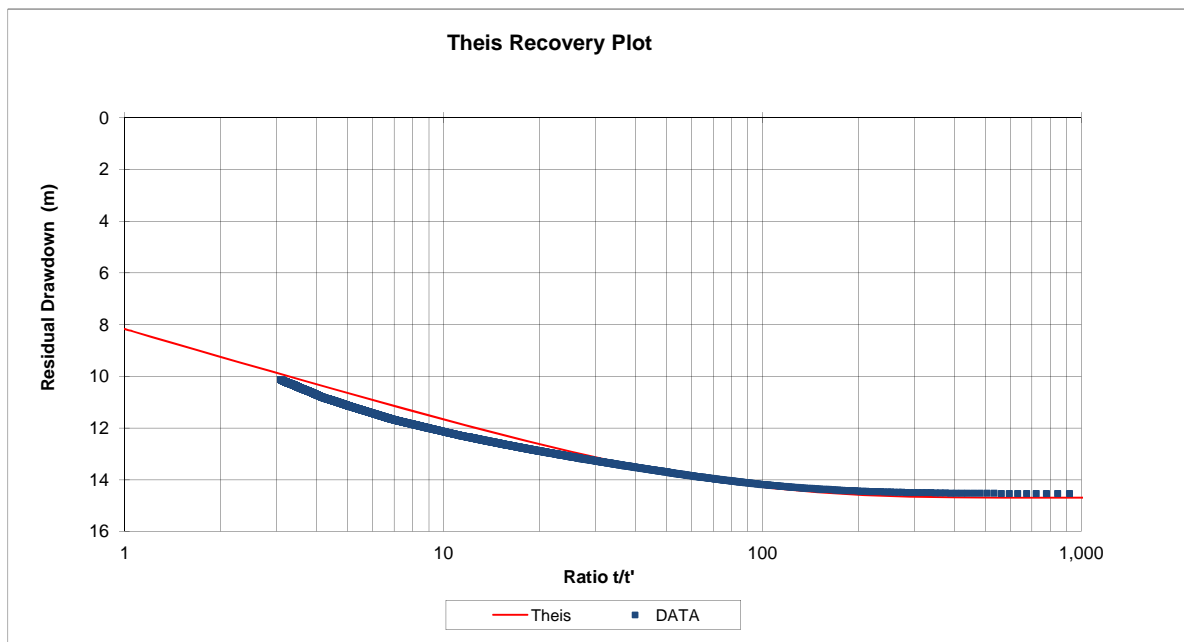
Drill-hole **PH13-1-1**
Test #1

Start Airlifting 26/07/2013 7:30
End Airlifting 02/08/2013 7:30
Final Water Level 79.4 mbgl
Initial Water Level 64.9 mbgl
Drawdown 14.5 m

Well No.	Description	Distance (m)	Start (s)	Pumping Rate (m ³ /s)
1	Constant rate test	185	0	3.15E-02
1	Recovery	185	604,800	-3.15E-02

Hydraulic Conductivity, K 3E-06 m/s
Transmissivity, T 2E-03 m²/s

Storativity, S 1E-03
Offset 2.1



TEST COMMENTS:

M:\1\01\00457\06\VA\Report\9 - Open Pit Water Management Plan\Appendices\B - Hydraulic Testing\B.2 Pumping Test Analysis\Theis analysis\Theis Recovery\PW13-1\PH13-1-1 (160m).xlsx\Theis Recovery Analysis - 160m

REV	DATE	DESCRIPTION	PREP'D	CHK'D	APP'D
0	OCT'13	ISSUED WITH REPORT	FTJ	CAS	KJB

**NEW GOLD INC.
BLACKWATER GOLD PROJECT**

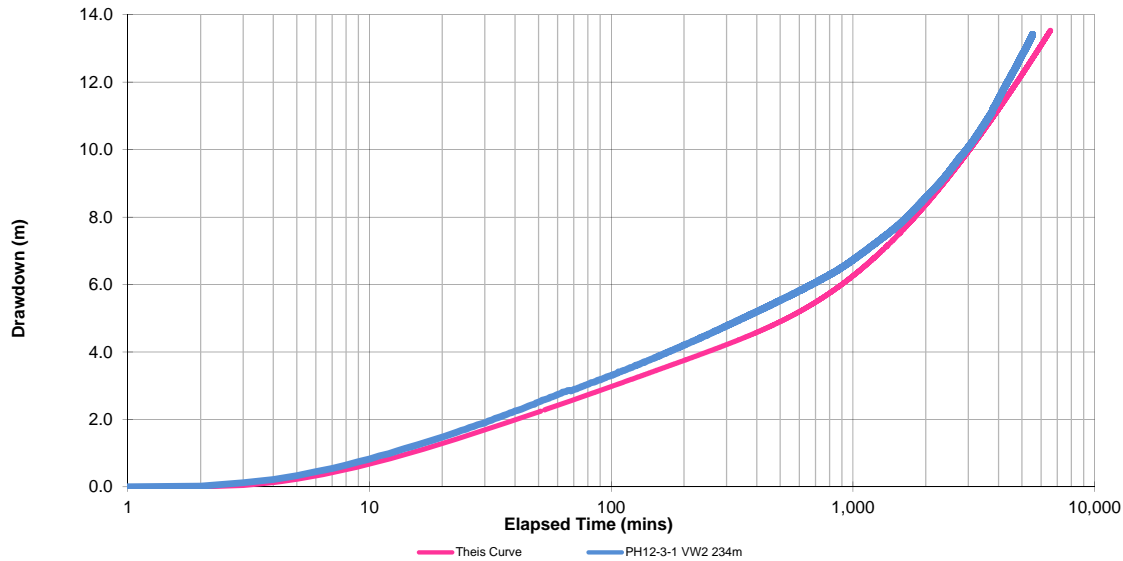
**HYDRAULIC PROPERTIES CALCULATION
USING THEIS METHOD (1935)**

21/11/2013 11:07

Pumping Well: PW13-1
Measurement Well: PH13-1-2
Distance: 53 m
VWP depth: 211 m
Transmissivity: 2E-03 m²/s
Storativity: 8E-04
Hydraulic Conductivity: 4.E-06 m/sec

Test start: 7/26/13 7:30 AM
Test stop: 8/2/13 7:30 AM
Test duration: 604800 sec
Field technician: FTJ
Analyst: FTJ

Well No.	Description	Distance (m)	start (s)	pumping rate (m3/s)
1	PH13-1-2	53	0	3.15E-02
2		53	0	0.00E+00
3	Image well 1	900	0	3.15E-02
4		900	0	0.00E+00
5	Image well 2	900	0	3.15E-02
6		900	0	0.00E+00
7	Image well 3	900	0	3.15E-02
8		900	0	0.00E+00
9	Image well 4	900	0	3.15E-02
10		900	0	0.00E+00



TEST COMMENTS:

Image wells were used in the analysis to assess the potential impact of flow boundaries on results. Each image well represents a potential flow boundary.

M:\1\01\00457\06\A\Report\9 - Open Pit Water Management Plan\Appendices\B - Hydraulic Testing\B.2 Pumping Test Analysis\This analysis\PH13-1-2.xls]Theis PH13-1-2

0	28/07/2011	ISSUED WITH REPORT	FTJ	CAS	KJB
REV	DATE	DESCRIPTION	PREP'D	CHK'D	APP'D

**NEW GOLD INC.
BLACKWATER GOLD PROJECT**

**PUMPING RECOVERY TEST
USING THIS METHOD (1935)**

28/10/2013 9:07

Project No. VA101-00457/6
Field Technician FTJ
Analyst FTJ
Test Date 26-Jul-13
Drill-hole Diameter 0.2 m
Top of Test Zone 0 mbgs
Bottom of Test Zone 500 mbgs
Test Length 500 m

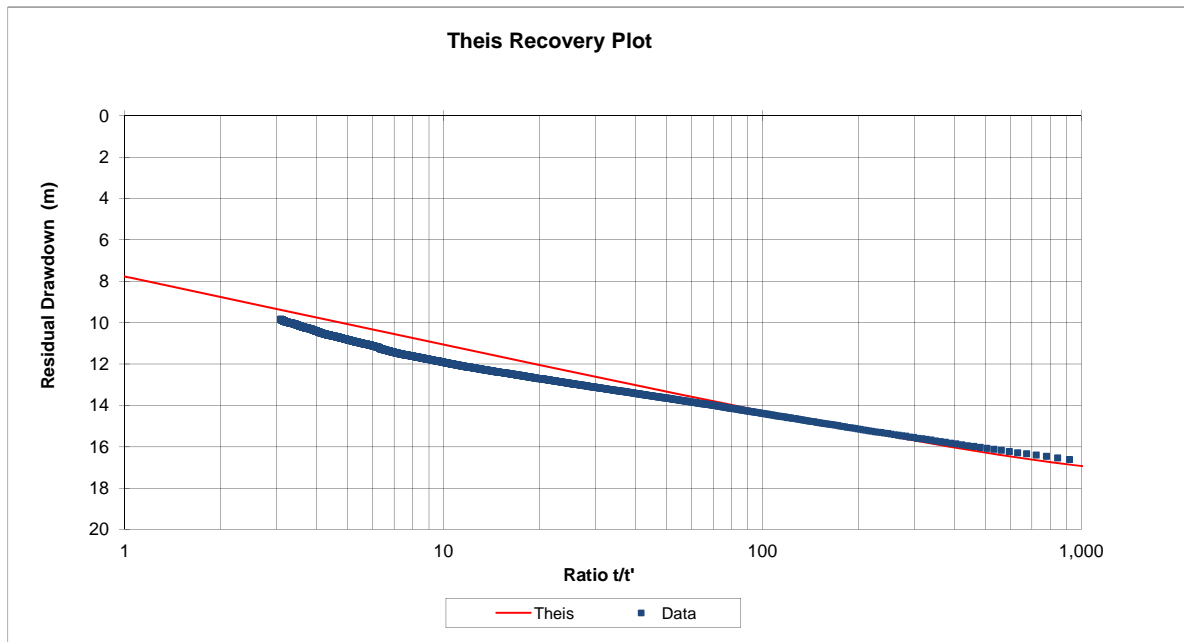
Drill-hole **PH13-1-2**
Test #1

Start Airlifting 26/07/2013 7:30
End Airlifting 02/08/2013 7:30
Final Water Level 39.4 mbgl
Initial Water Level 21.8 mbgl
Drawdown 17.6 m

Well No.	Description	Distance (m)	Start (s)	Pumping Rate (m ³ /s)
1	Constant rate test	50	0	3.15E-02
1	Recovery	50	604,800	-3.15E-02

Hydraulic Conductivity, K 4E-06 m/s
Transmissivity, T 2E-03 m²/s

Storativity, S 1E-03
Offset 2.1



TEST COMMENTS:

M:\1\01\00457\06\A\Report\9 - Blackwater pit dewatering\Appendix\B - Hydraulic Testing\B.2 Pumping Test Analysis\Theis analysis\Theis Recovery\PW13-1\PH13-1-2 (211m).xlsx\Theis Recovery Analysis - 160m

REV	DATE	DESCRIPTION	PREP'D	CHK'D	APP'D
0	20OCT13	ISSUED WITH REPORT	FTJ	CAS	KJB

**NEW GOLD INC.
BLACKWATER GOLD PROJECT**

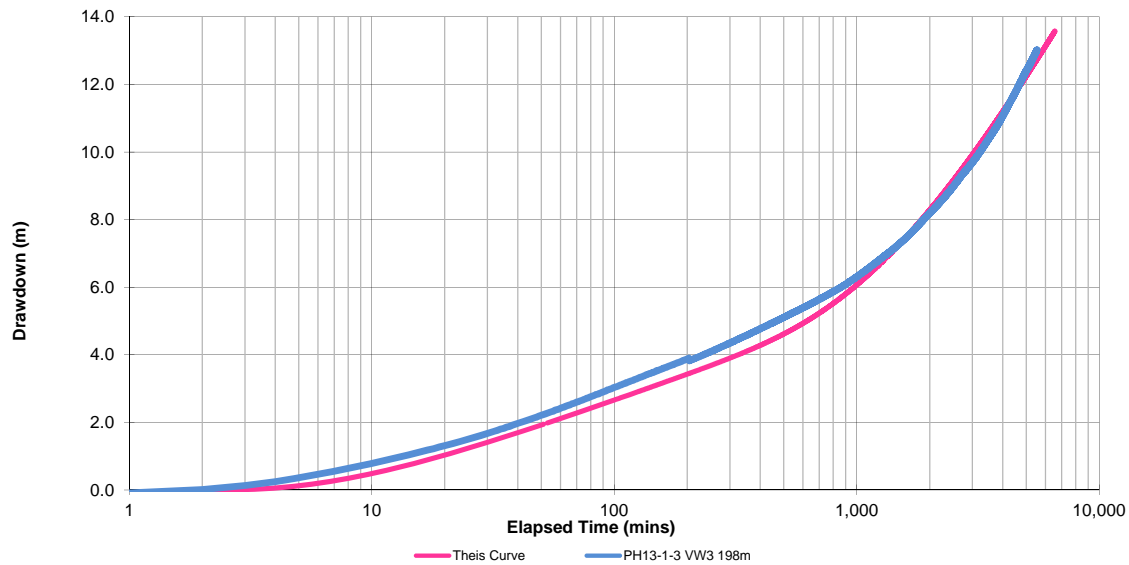
**HYDRAULIC PROPERTIES CALCULATION
USING THEIR METHOD (1935)**

21/11/2013 11:16

Pumping Well:	PW13-1	
Measurement Well:	PH13-1-3	
Distance:	100	m
VWP depth:	198	m
Transmissivity:	2E-03	m ² /s
Storativity:	3E-04	
Hydraulic Conductivity	4.E-06	m/sec

Test start:	7/26/13 7:30 AM	
Test stop:	8/2/13 7:30 AM	
Test duration:	604800	sec
Field technician:	FTJ	
Analyst:	FTJ	

Well No.	Description	Distance (m)	start (s)	pumping rate (m3/s)
1	PH13-1-3	100	0	3.15E-02
2		100	0	0.00E+00
3	Image well 1	1400	0	3.15E-02
4		1400	0	0.00E+00
5	Image well 2	1400	0	3.15E-02
6		1400	0	0.00E+00
7	Image well 3	1400	0	3.15E-02
8		1400	0	0.00E+00
9	Image well 4	1400	0	3.15E-02
10		1400	0	0.00E+00



TEST COMMENTS:

Image wells were used in the analysis to assess the potential impact of flow boundaries on results. Each image well represents a potential flow boundary.

M:\1\01\00457\06\A\Report\9 - Open Pit Water Management Plan\Appendices\B - Hydraulic Testing\B.2 Pumping Test Analysis\This analysis\PH13-1-3.xls]This PH13-1-3

A	28/07/201	ISSUED WITH REPORT	FTJ	CAS	KJB
REV	DATE	DESCRIPTION	PREPD	CHKD	APPD

**NEW GOLD INC.
BLACKWATER GOLD PROJECT**

**PUMPING RECOVERY TEST
USING THIS METHOD (1935)**

21/11/2013 11:21

Project No. VA101-00457/6
Field Technician FTJ
Analyst FTJ
Test Date 26-Jul-13
Drill-hole Diameter 0.2 m
Top of Test Zone 0 mbgs
Bottom of Test Zone 500 mbgs
Test Length 500 m

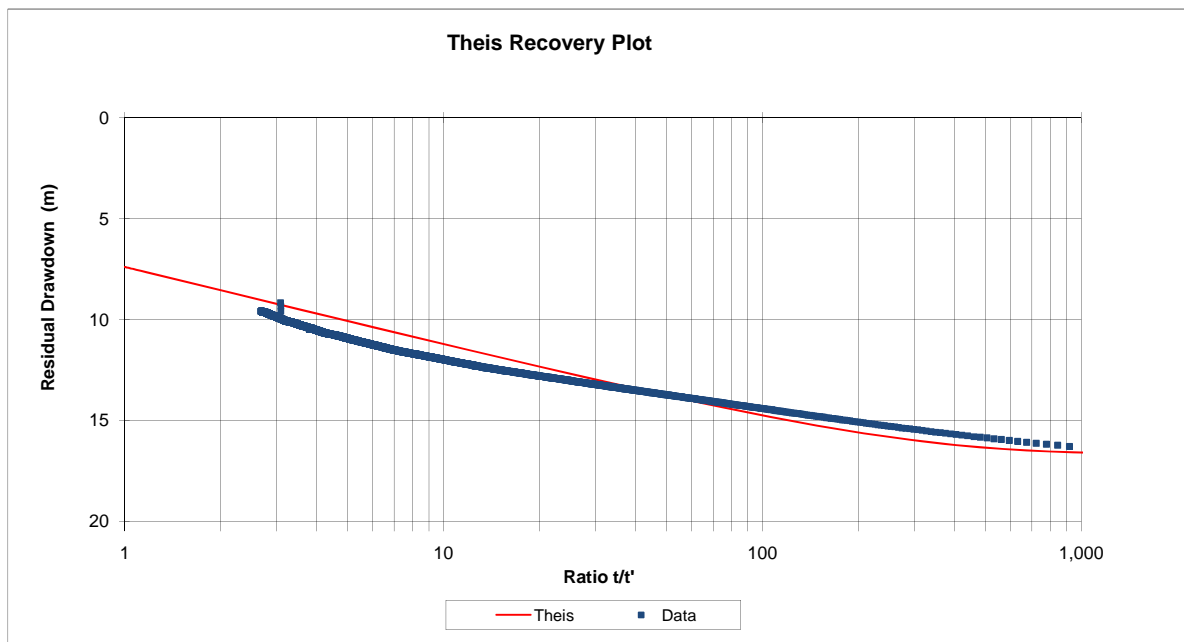
Drill-hole **PH13-1-3**
Test #1

Start Airlifting 26/07/2013 7:30
End Airlifting 02/08/2013 7:30
Final Water Level 58.0 mbgl
Initial Water Level 40.7 mbgl
Drawdown 17.3 m

Well No.	Description	Distance (m)	Start (s)	Pumping Rate (m ³ /s)
1	Constant rate test	100	0	3.15E-02
1	Recovery	100	604,800	-3.15E-02

Hydraulic Conductivity, K 3E-06 m/s
Transmissivity, T 2E-03 m²/s

Storativity, S 8E-04
Offset 2.0



TEST COMMENTS:

M:\1\01\00457\06\VA\Report\9 - Open Pit Water Management Plan\Appendices\B - Hydraulic Testing\B.2 Pumping Test Analysis\Theis analysis\Theis Recovery\PW13-1\PH13-1-3 (198m).xlsx\Theis Recovery Analysis - 198m

REV	DATE	DESCRIPTION	PREP'D	CHK'D	APP'D
0	OCT'13	ISSUED WITH REPORT	FTJ	CAS	KJB

**NEW GOLD INC.
BLACKWATER GOLD PROJECT**

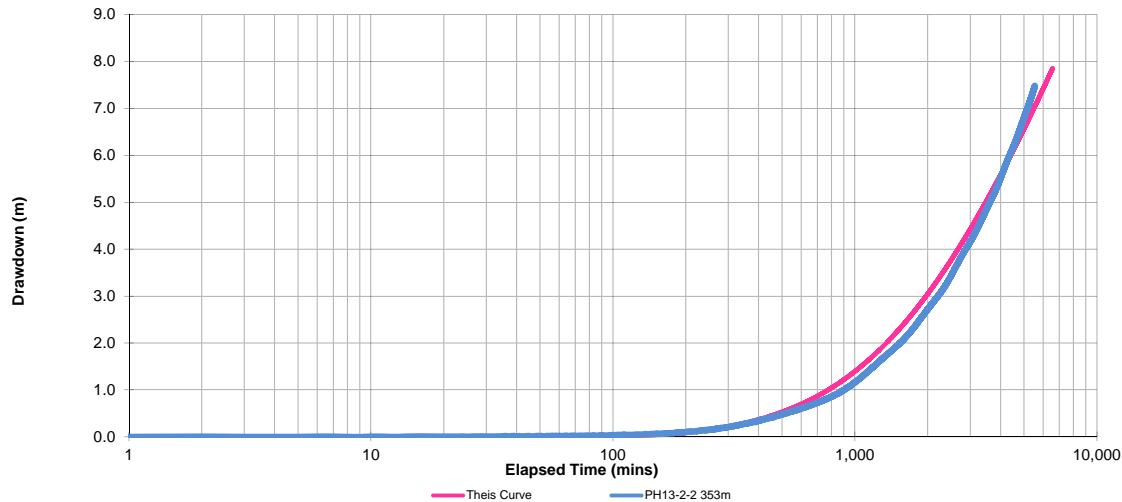
**HYDRAULIC PROPERTIES CALCULATION
USING THEIS METHOD (1935)**

21/11/2013 11:19

Pumping Well: PW13-1
Measurement Well: PH13-2-2
Distance: 651 m
VWP depth: 353 m
Transmissivity: 2E-03 m²/s
Storativity: 4E-03
Hydraulic Conductivity: 4.E-06 m/sec

Test start: 7/26/13 7:30 AM
Test stop: 8/2/13 7:30 AM
Test duration: 604800 sec
Field technician: FTJ
Analyst: FTJ

Well No.	Description	Distance (m)	start (s)	pumping rate (m3/s)
1	PH13-2-2	651	0	3.15E-02
2		651	0	0.00E+00
3	Image well 1	200	0	3.15E-02
4		200	0	0.00E+00
5	Image well 2	420	0	3.15E-02
6		420	0	0.00E+00
7	Image well 3	420	0	3.15E-02
8		420	0	0.00E+00
9	Image well 4	420	0	3.15E-02
10		420	0	0.00E+00



TEST COMMENTS:

Image wells were used in the analysis to assess the potential impact of flow boundaries on results. Each image well represents a potential flow boundary.

M:\1\01\00457\06\A\Report\9 - Open Pit Water Management Plan\Appendices\B - Hydraulic Testing\B.2 Pumping Test Analysis\Thisis analysis\[PH13-2-2.xls]Thisis PH13-2-2_353m

0	28/07/2013	ISSUED WITH REPORT	FTJ	CAS	KJB
REV	DATE	DESCRIPTION	PREPD	CHKD	APPD

**NEW GOLD INC.
BLACKWATER GOLD PROJECT**

**PUMPING RECOVERY TEST
USING THIS METHOD (1935)**

21/11/2013 11:22

Project No. VA101-00457/6
Field Technician FTJ
Analyst FTJ
Test Date 26-Jul-13
Drill-hole Diameter 0.200 m
Top of Test Zone 0 mbgs
Bottom of Test Zone 500 mbgs
Test Length 500 m

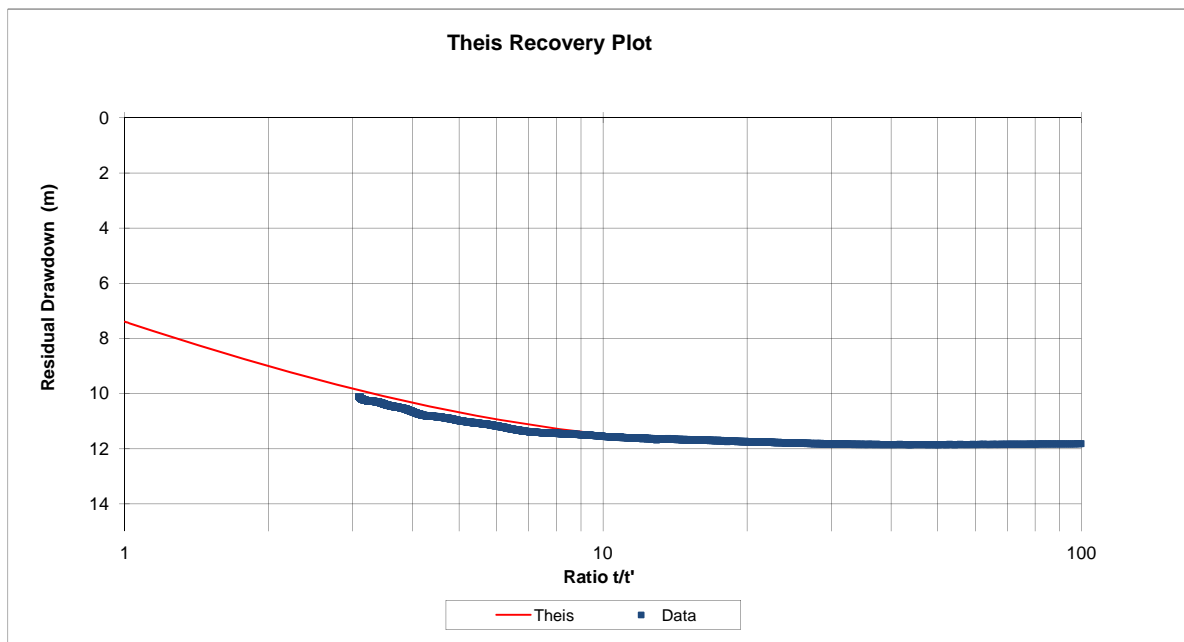
Drill-hole **PH13-2-2**
Test #1

Start Airlifting 7:30 AM
End Airlifting 7:30 AM
Final Water Level 53.8 mbgl
Initial Water Level 42.0 mbgl
Drawdown 11.8 m

Well No.	Description	Distance (m)	Start (s)	Pumping Rate (m ³ /s)
1	Constant rate test	651.00	0	3.15E-02
1	Recovery	651.00	604,800	-3.15E-02

Hydraulic Conductivity, K 2E-06 m/s
Transmissivity, T 1E-03 m²/s

Storativity, S 6E-04
Offset 2.0



TEST COMMENTS:

M:\1\01\00457\06\VA\Report\9 - Open Pit Water Management Plan\Appendices\B - Hydraulic Testing\B.2 Pumping Test Analysis\Theis analysis\Theis Recovery\PW13-1\PH13-2-2 (353m).xlsx\Theis Recovery Analysis - 423m

REV	DATE	DESCRIPTION	PREP'D	CHK'D	APP'D
0	20DEC12		MAS	-	-

**NEW GOLD INC.
BLACKWATER GOLD PROJECT**

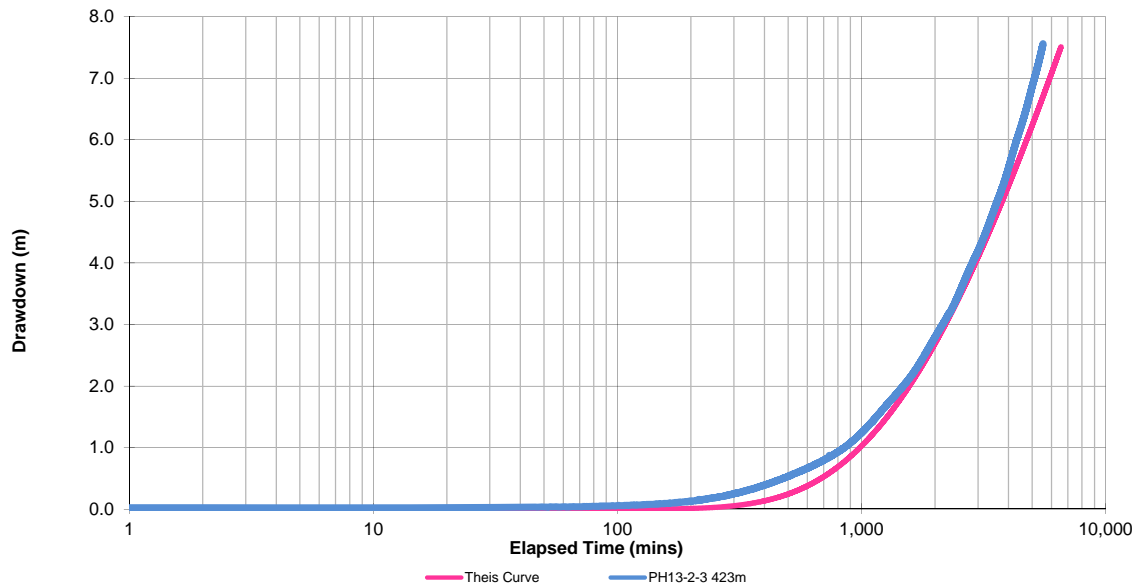
**HYDRAULIC PROPERTIES CALCULATION
USING THEIS METHOD (1935)**

21/11/2013 11:23

Pumping Well: PH13-1
Measurement Well: PH13-2-3
Distance: 605 m
VWP depth: 423 m
Transmissivity: 2E-03 m²/s
Storativity: 4E-03
Hydraulic Conductivity: 4.E-06 m/sec

Test start: 7/26/13 7:30 AM
Test stop: 8/2/13 7:30 AM
Test duration: 604800 sec
Field technician: FTJ
Analyst: FTJ

Well No.	Description	Distance (m)	start (s)	pumping rate (m3/s)
1	PH13-1-2	604	0	3.15E-02
2	Image well 1	300	0	3.15E-02
3	Image well 2	400	0	3.15E-02
4	Image well 3	420	0	3.15E-02
5	Image well 4	420	0	3.15E-02



TEST COMMENTS:

Image wells were used in the analysis to assess the potential impact of flow boundaries on results. Each image well represents a potential flow boundary.

M:\1\01\00457\06\A\Report\9 - Open Pit Water Management Plan\Appendices\B - Hydraulic Testing\B.2 Pumping Test Analysis\Theis analysis\PH13-2-3.xls]Theis PH13

0	28/07/201	ISSUED WITH REPORT	FTJ	CAS	KJB
REV	DATE	DESCRIPTION	PREP'D	CHK'D	APP'D

**NEW GOLD INC.
BLACKWATER GOLD PROJECT**

**PUMPING RECOVERY TEST
USING THIS METHOD (1935)**

29/11/2013 11:30

Project No. VA101-00457/6
Field Technician FTJ
Analyst FTJ
Test Date 26-Jul-13
Drill-hole Diameter 0.2 m
Top of Test Zone 119 mbgs
Bottom of Test Zone 296 mbgs
Test Length 500 m

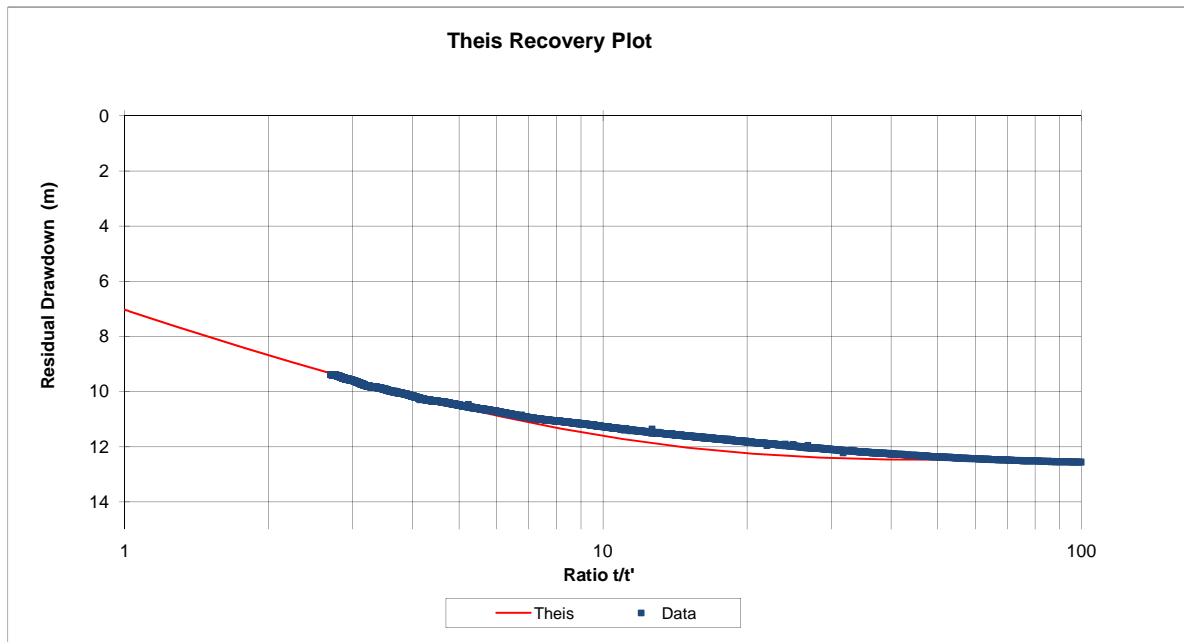
Drill-hole **PH12-4-3**
Test #1

Start Airlifting 26/07/2013 7:30
End Airlifting 02/08/2013 7:30
Final Water Level 105.4 mbgl
Initial Water Level 92.9 mbgl
Drawdown 12.5 m

Well No.	Description	Distance (m)	Start (s)	Pumping Rate (m ³ /s)
1	Constant rate test	647	0	3.15E-02
1	Recovery	647	604,800	-3.15E-02

Hydraulic Conductivity, K 2E-06 m/s
Transmissivity, T 1E-03 m²/s

Storativity, S 4E-04
Offset 2.0



TEST COMMENTS:

M:\1\01\00457\06\A\Report\9 - Open Pit Water Management Plan\Appendices\B - Hydraulic Testing\B.2 Pumping Test Analysis\This analysis\This Recovery\PW13-1\PH12-4-3 (342m).xlsx\This Recovery Analysis - 353m

A	DATE	ISSUED WITH REPORT	PREP'D	CHK'D	APP'D
	OCT'13		FTJ	CAS	KJB

**NEW GOLD INC.
BLACKWATER GOLD PROJECT**

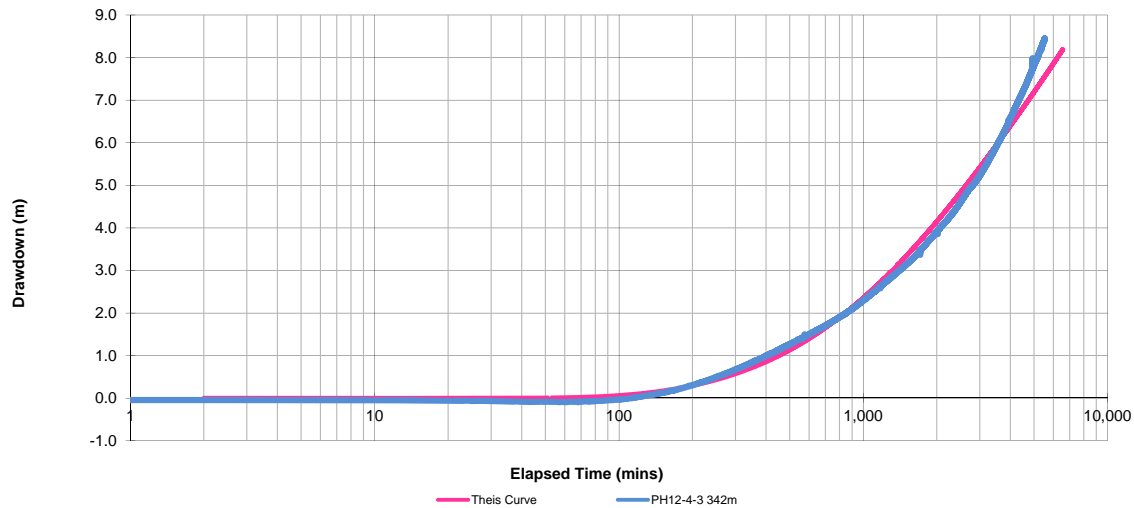
**HYDRAULIC PROPERTIES CALCULATION
USING THEIS METHOD (1935)**

21/11/2013 11:32

Pumping Well: PW13-1
Measurement Well: PH12-4-3
Distance: 647 m
VWP depth: 342 m
Transmissivity: 3E-03 m²/s
Storativity: 2E-03
Hydraulic Conductivity: 6.E-06 m/sec

Test start: 7/26/13 7:30 AM
Test stop: 8/2/13 7:30 AM
Test duration: 604800 sec
Field technician: FTJ
Analyst: FTJ

Well No.	Description	Distance (m)	start (s)	pumping rate (m3/s)
1	PH12-4-3	647	0	3.15E-02
2		0	0	0.00E+00
3	Image well 1	250	0	3.15E-02
4		0	0	0.00E+00
5	Image well 2	350	0	3.15E-02
6		0	0	0.00E+00
7	Image well 3	500	0	3.15E-02
8		0	0	0.00E+00
9	Image well 4	700	0	3.15E-02
10		0	0	0.00E+00



TEST COMMENTS:

Image wells were used in the analysis to assess the potential impact of flow boundaries on results. Each image well represents a potential flow boundary.

M:\1\01\00457\06\A\Report\9 - Open Pit Water Management Plan\Appendices\B - Hydraulic Testing\B.2 Pumping Test Analysis\This analysis\[PH12-4-3.xls]This PH12-4-3_342m

REV	DATE	DESCRIPTION	PREPD	CHKD	APPD
0	28/07/2013	ISSUED WITH REPORT	FTJ	CAS	KJB

**NEW GOLD INC.
BLACKWATER GOLD PROJECT**

**PUMPING RECOVERY TEST
USING THEIS METHOD (1935)**

21/11/2013 11:33

Project No. VA101-00457/6
Field Technician FTJ
Analyst FTJ
Test Date 26-Jul-13
Drill-hole Diameter 0.200 m
Top of Test Zone 120 mbgs
Bottom of Test Zone 300 mbgs
Test Length 180 m

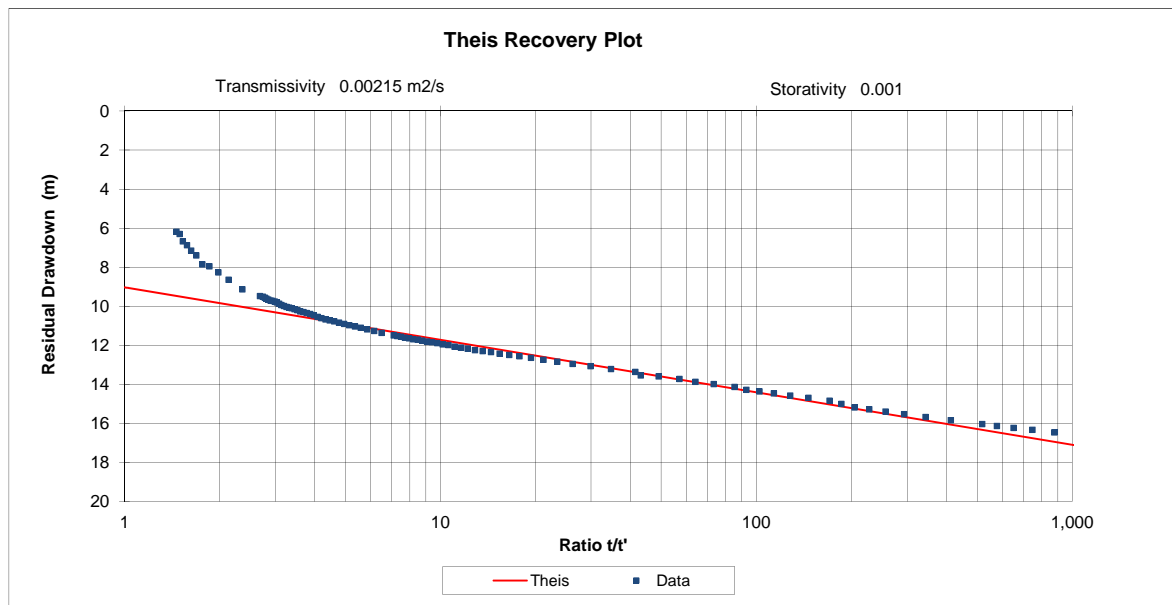
Drill-hole **PW13-1**
Test #1

Start Airlifting 7:30 AM
End Airlifting 7:30 AM
Final Water Level 33.7 mbgl
Initial Water Level 15.6 mbgl
Drawdown 18.2 m

Well No.	Description	Distance (m)	Start (s)	Pumping Rate (m ³ /s)
1	Constant rate test	0.01	0	3.15E-02
1	Recovery	0.01	604,830	-3.15E-02

Hydraulic Conductivity, K 1E-05 m/s
Transmissivity, T 2E-03 m²/s

Storativity, S 1E-03
Offset 2.2



TEST COMMENTS:

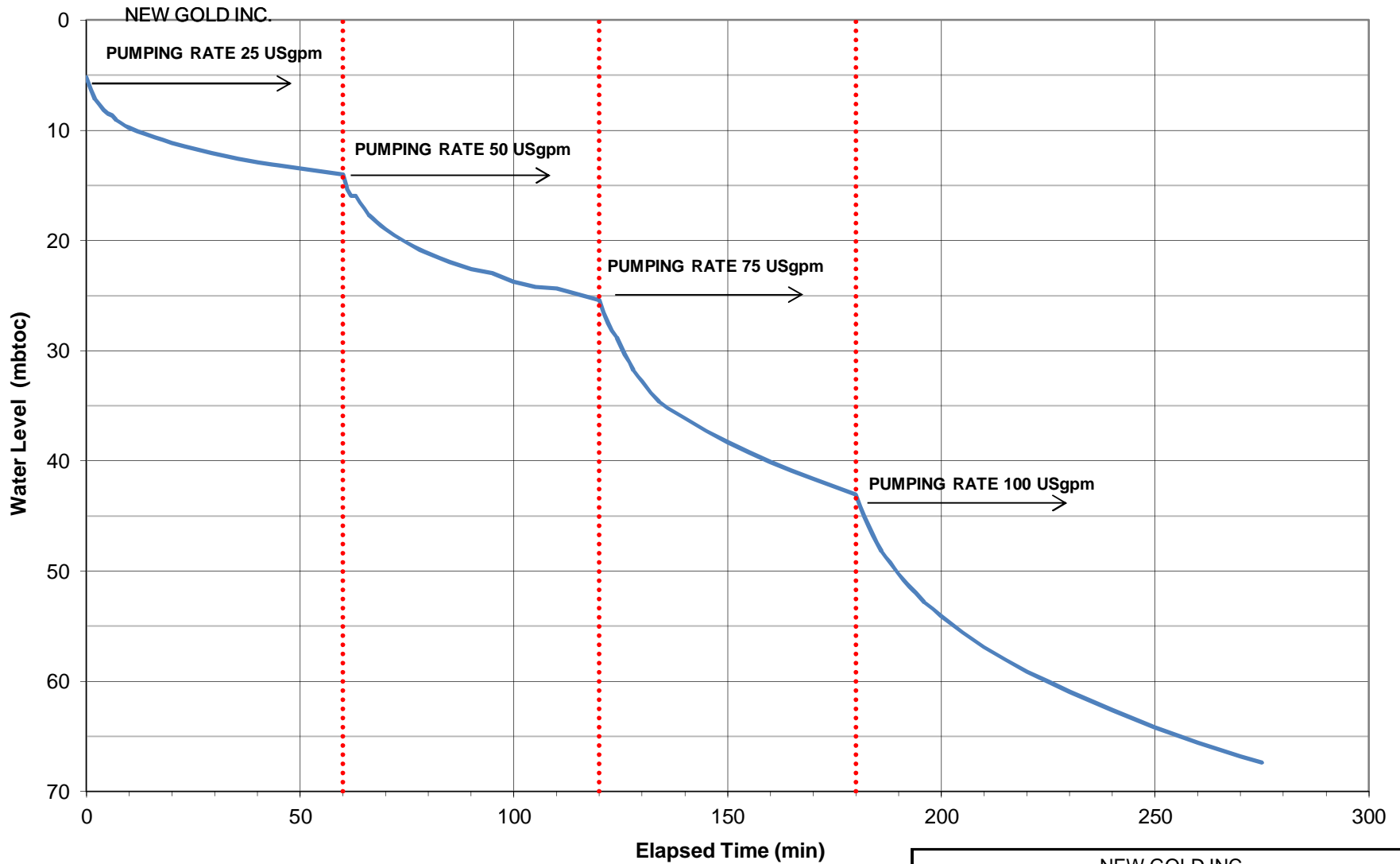
M:\1\01\00457\06\A\Report\9 - Open Pit Water Management Plan\Appendices\B - Hydraulic Testing\B.2 Pumping Test Analysis\Theis analysis\Theis Recovery\PW13-1\PW13-1.xlsx]Theis Recovery Analysis - 105m

REV	DATE	DESCRIPTION	PREPD	CHKD	APPD
0	20OCT13	ISSUED WITH REPORT	FTJ	CAS	KJB

APPENDIX B4

PUMPING WELL PW13-3 HYDRAULIC RESULTS AND ANALYSIS SHEETS

(Pages B4-1 to B4-13)

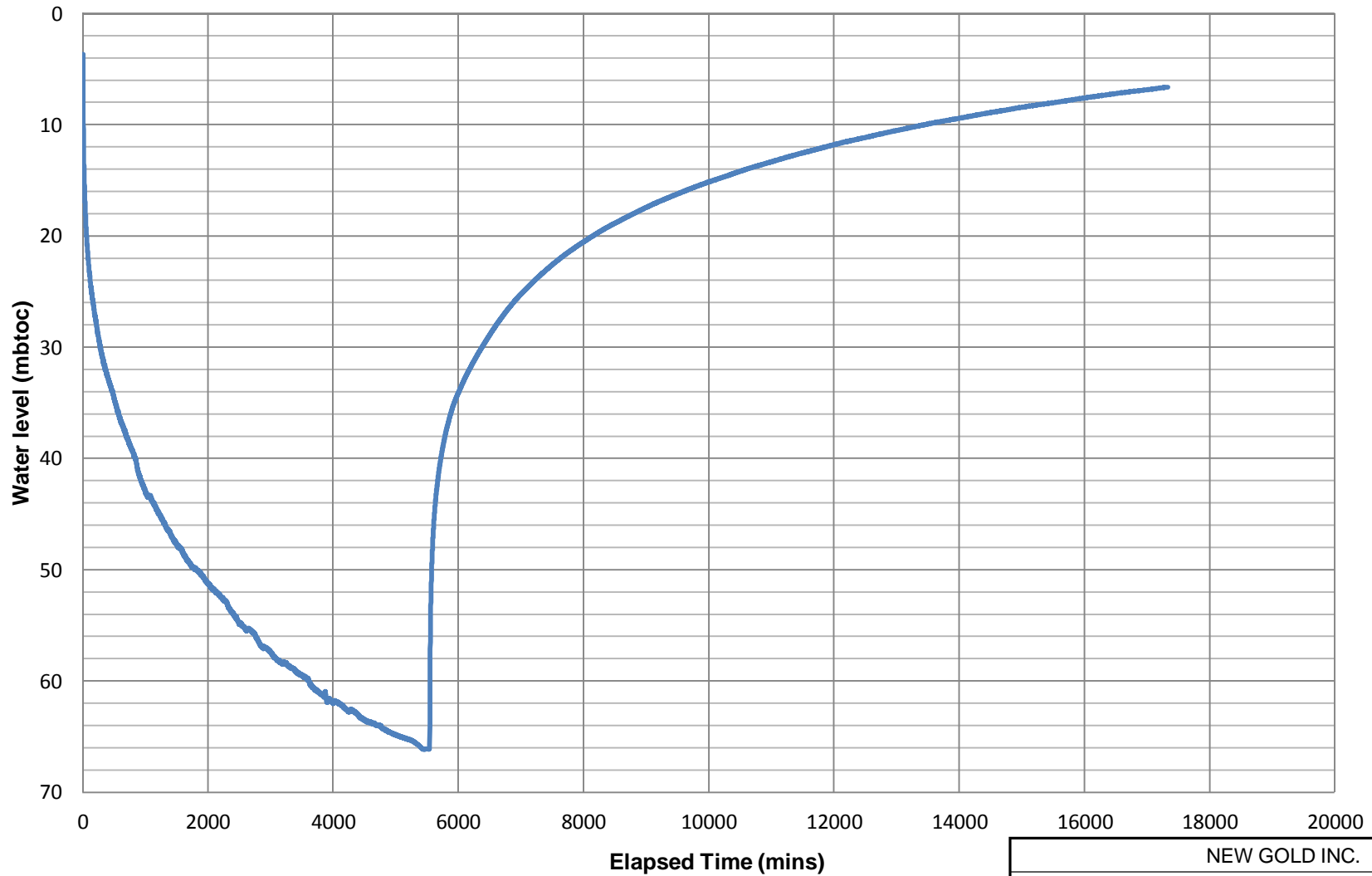


NOTES:

1. PUMP TESTING COMPLETED BY PRECISION PUMPING SERVICES ON 18 JULY 2013. RECOVERY MONITORED BY PRECISION PUMPING SERVICES AND NEW GOLD INC STAFF.
2. MANUAL WATER LEVEL MEASUREMENTS WERE TAKEN FROM SET REFERENCE POINT USING AN RST WATER LEVEL METER.

NEW GOLD INC.		
BLACKWATER GOLD PROJECT		
PW13-3 STEP TEST (25 - 100 USGPM)		
<i>Knight Piésold</i> CONSULTING	P/A NO. VA101-00457/6	REF. NO. 9
	FIGURE B4.1	
		REV 0

0	23AUG'13	ISSUED WITH REPORT	FTJ	CAS	KJB
REV	DATE	DESCRIPTION	PREP'D	CHK'D	APP'D

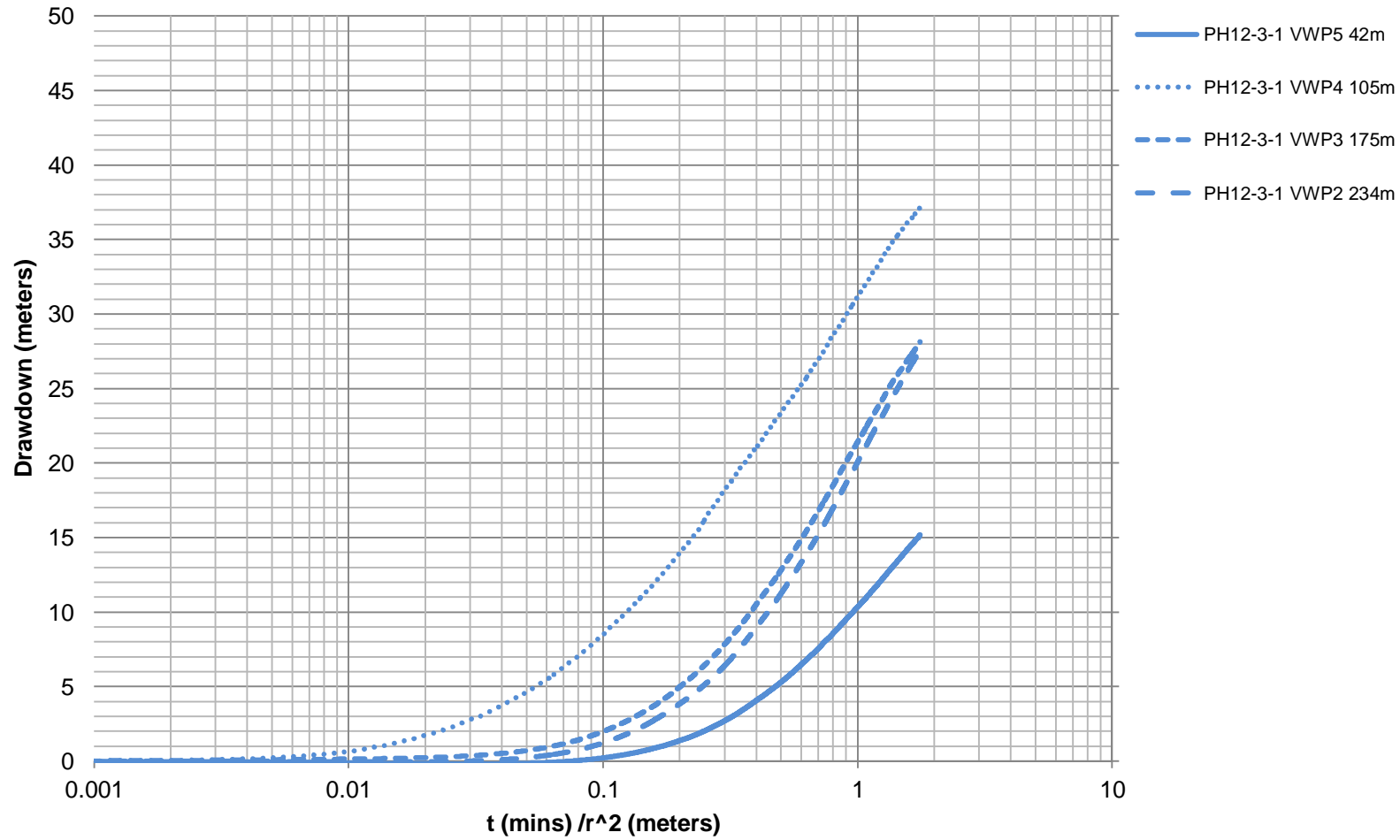


NOTES:

1. PUMP TEST AT PW13-3 AT A RATE OF 0.00315 M³/SECOND RUN FOR 92 HOURS.
2. PUMP TESTING COMPLETED BY PRECISION PUMPING SERVICES BETWEEN 19 JULY 2013 AND 23 JULY 2013. RECOVERY MONITORED BY PRECISION PUMPING SERVICES STAFF.
3. MANUAL WATER LEVEL MEASUREMENTS WERE TAKEN FROM REFERENCE POINT USING AN RST

NEW GOLD INC.	
BLACKWATER GOLD PROJECT	
PW13-3 PUMPING WELL DRAWDOWN CONSTANT RATE PUMPING TEST	
<i>Knight Piésold</i> CONSULTING	P/A NO. VA101-00457/6
	REF. NO. 9
FIGURE B4.2	REV 0

0	23AUG'13	ISSUED WITH REPORT	FTJ	CAS	KJB
REV	DATE	DESCRIPTION	PREP'D	CHK'D	APP'D

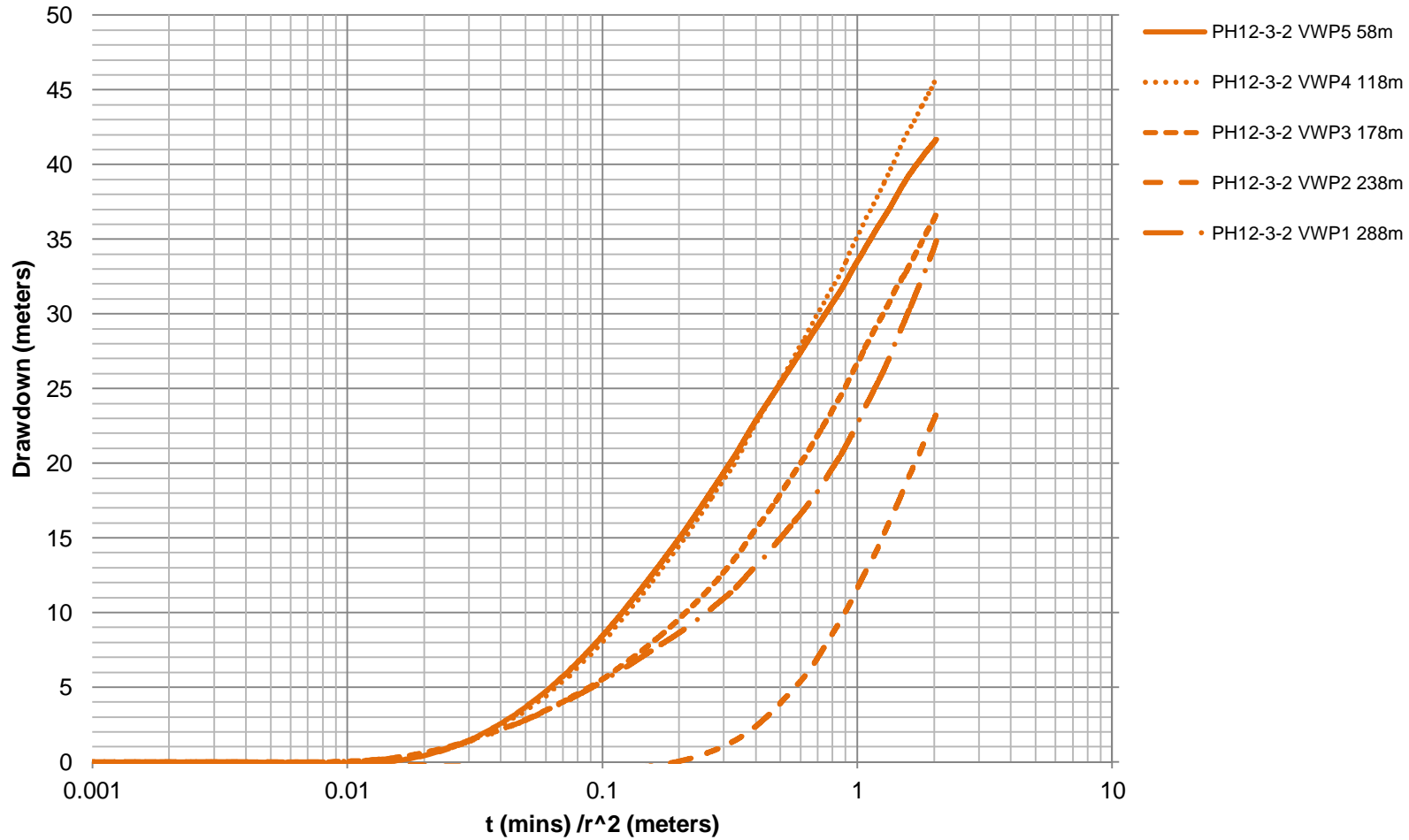


NOTES:

1. DRAWDOWN FROM VWP DATA IN OBSERVATION WELL.
2. ALL VWP DEPTHS ARE METERS BELOW GROUND LEVEL.

NEW GOLD INC.	
BLACKWATER GOLD PROJECT	
OBSERVATION WELL PH12-3-1 RESPONSE FROM PUMP TEST AT PW13-3	
<i>Knight Piésold</i> CONSULTING	P/A NO. VA101-00457/6 REF. NO. 9 FIGURE B4.3 REV 0

0	23AUG'13	ISSUED WITH REPORT	FTJ	CAS	KJB
REV	DATE	DESCRIPTION	PREP'D	CHK'D	APP'D

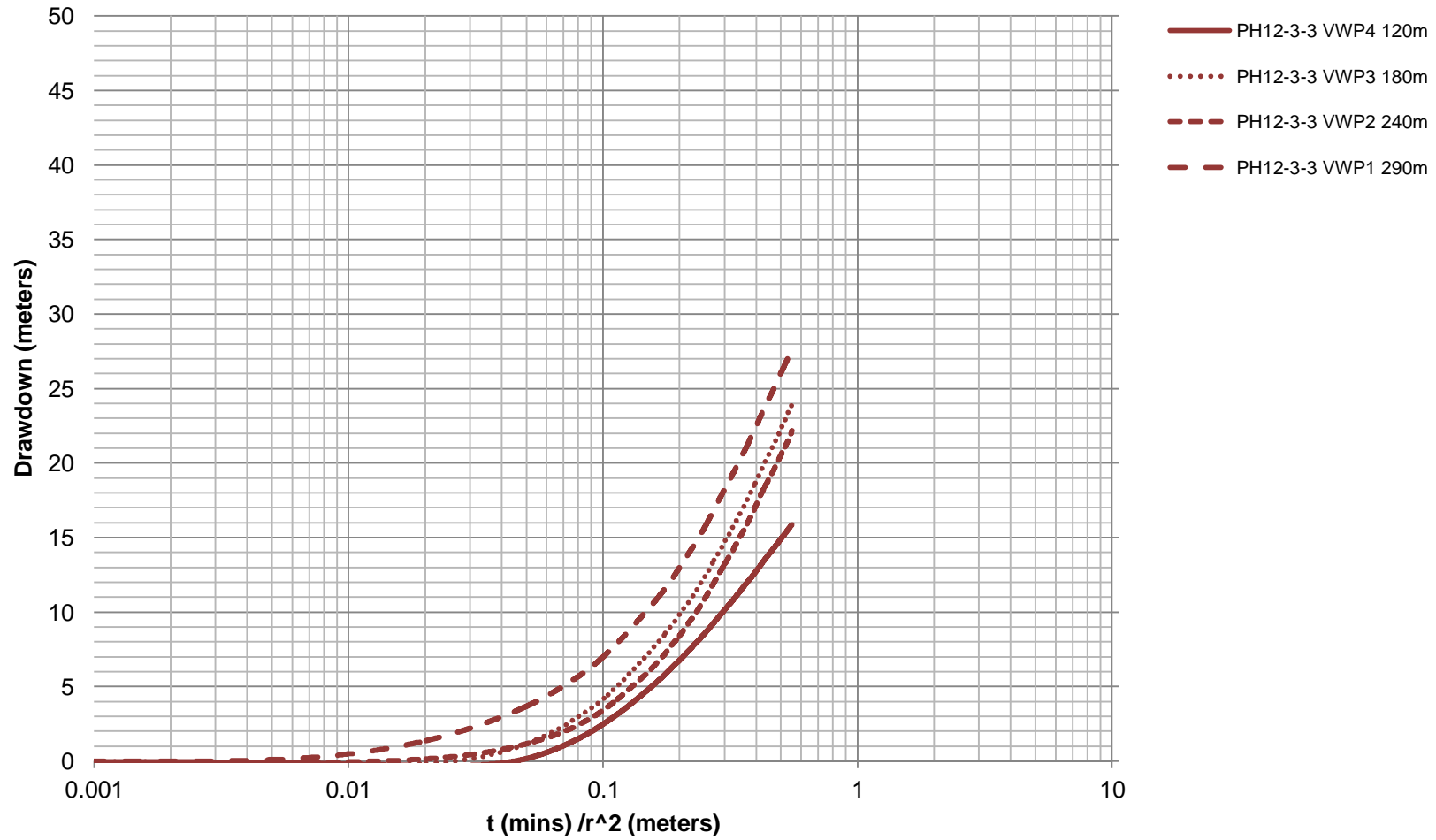


NOTES:

1. DRAWDOWN FROM VWP DATA IN OBSERVATION WELL.
2. ALL VWP DEPTHS ARE METERS BELOW GROUND LEVEL.

NEW GOLD INC.	
BLACKWATER GOLD PROJECT	
OBSERVATION WELL PH12-3-2 RESPONSE FROM PUMP TEST AT PW13-1	
<i>Knight Piésold</i> CONSULTING	P/A NO. VA101-00457/6 REF. NO. 9 FIGURE B4.4 REV 0

0	23AUG'13	ISSUED WITH REPORT	FTJ	CAS	KJB
REV	DATE	DESCRIPTION	PREP'D	CHK'D	APP'D

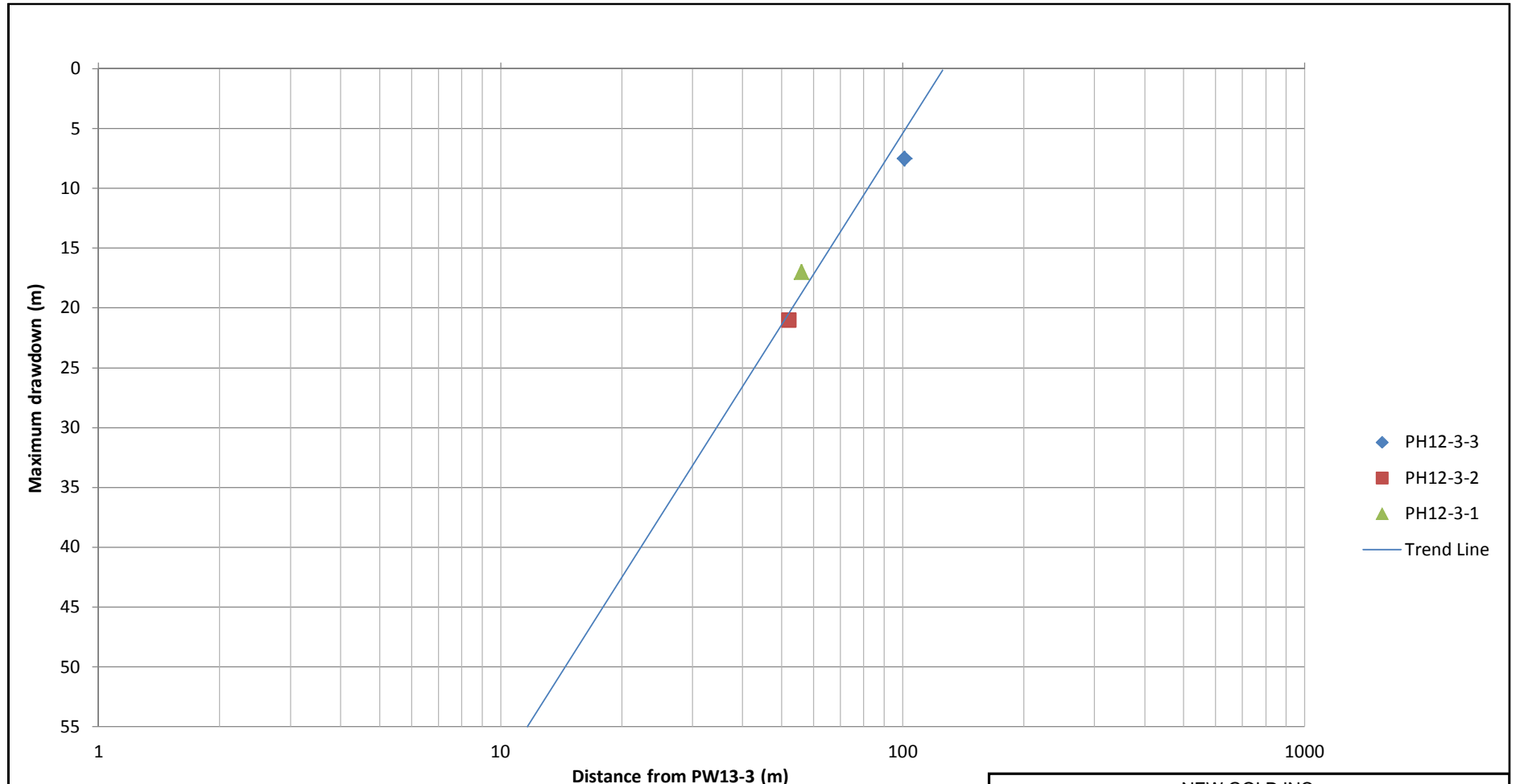


NOTES:

1. DRAWDOWN FROM VWP DATA IN OBSERVATION WELL.
2. ALL VWP DEPTHS ARE METERS BELOW GROUND LEVEL.
3. VWP DATA IS NOT INCLUDED IF NO DRAWDOWN WAS NOTED DURING PUMPING TEST.

NEW GOLD INC.	
BLACKWATER GOLD PROJECT	
OBSERVATION WELL PH12-3-3 RESPONSE FROM PUMP TEST AT PW13-1	
<i>Knight Piésold</i> CONSULTING	P/A NO. VA101-00457/6
FIGURE B4.5	
REF. NO. 9	
REV 0	

0	23AUG'13	ISSUED WITH REPORT	FTJ	CAS	KJB
REV	DATE	DESCRIPTION	PREP'D	CHK'D	APP'D



NOTES:

1. DATA POINTS REPRESENT THE MAXIMUM DRAWDOWN RECORDED BY VWPS IN EACH OBSERVATION WELL AT 1000 MINS AFTER PUMPING STARTED FOR THE CONSTANT RATE TEST.
2. TRANSMISSIVITY WAS CALCULATED USING THE HEAD CHANGE OVER ONE LOG CYCLE OF THE TRENDLINE.

NEW GOLD INC.	
BLACKWATER GOLD PROJECT	
DISTANCE-DRAWDOWN PLOT FOR CONSTANT RATE PUMPING TEST AT PW13-3	
<i>Knight Piésold</i> CONSULTING	P/A NO. VA101-00457/6
FIGURE B4.6	
REF. NO. 9	
REV 0	

0	30NOV'13	ISSUED WITH REPORT	FTJ	CAS	KJB
REV	DATE	DESCRIPTION	PREP'D	CHK'D	APP'D

**NEW GOLD INC.
BLACKWATER GOLD PROJECT**

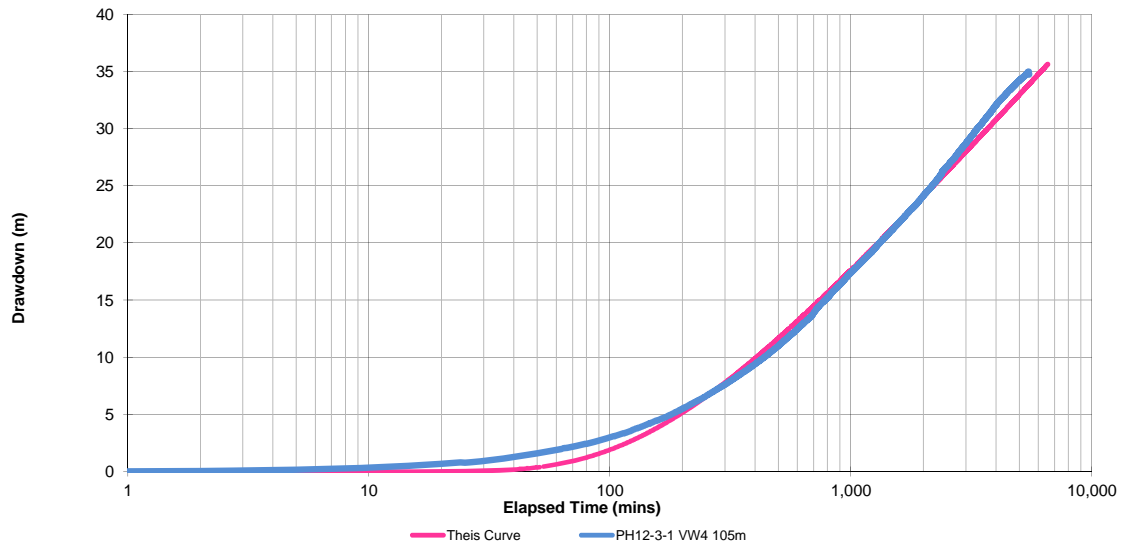
**HYDRAULIC PROPERTIES CALCULATION
USING THEIS METHOD (1935)**

21/11/2013 11:37

Pumping Well: PW13-3
 Measurement Well: PH12-3-1
 Distance: 56 m
 VWP depth: 105 m
 Transmissivity: 3E-05 m²/s
 Storativity: 2E-04
 Hydraulic Conductivity: 1.E-07 m/sec

Test start: 9/21/04 12:02 PM
 Test stop: 9/22/04 9:13 AM
 Test duration: 7948800 sec
 Field technician: FTJ
 Analyst: FTJ

Well No.	Description	Distance	start (s)	pumping rate (m3/s)
1	PH12-3-1	56	0	3.15E-03
2		0	0	0.00E+00
3		0	0	0.00E+00
4		0	0	0.00E+00
5		0	0	0.00E+00
6		0	0	0.00E+00
7		0	0	0.00E+00
8		0	0	0.00E+00
9		0	0	0.00E+00
10		0	0	0.00E+00



TEST COMMENTS:

M:\1\01\00457\06\A\Report\9 - Open Pit Water Management Plan\Appendices\B - Hydraulic Testing\B.2 Pumping Test Analysis\Theis analysis\[PH12-3-1.xlsx]Theis PH12-3-1_105m

0	28/07/201	ISSUED WITH REPORT	FTJ	CAS	KJB
REV	DATE	DESCRIPTION	PREP'D	CHK'D	APP'D

**NEW GOLD INC.
BLACKWATER GOLD PROJECT**

**PUMPING RECOVERY TEST
USING THIS METHOD (1935)**

21/11/2013 11:43

Project No. VA101-00457/6
Field Technician FTJ
Analyst FTJ
Test Date 19-Jul-13
Drill-hole Diameter 0.200 m
Top of Test Zone 126 mbgs
Bottom of Test Zone 303 mbgs
Test Length 177 m

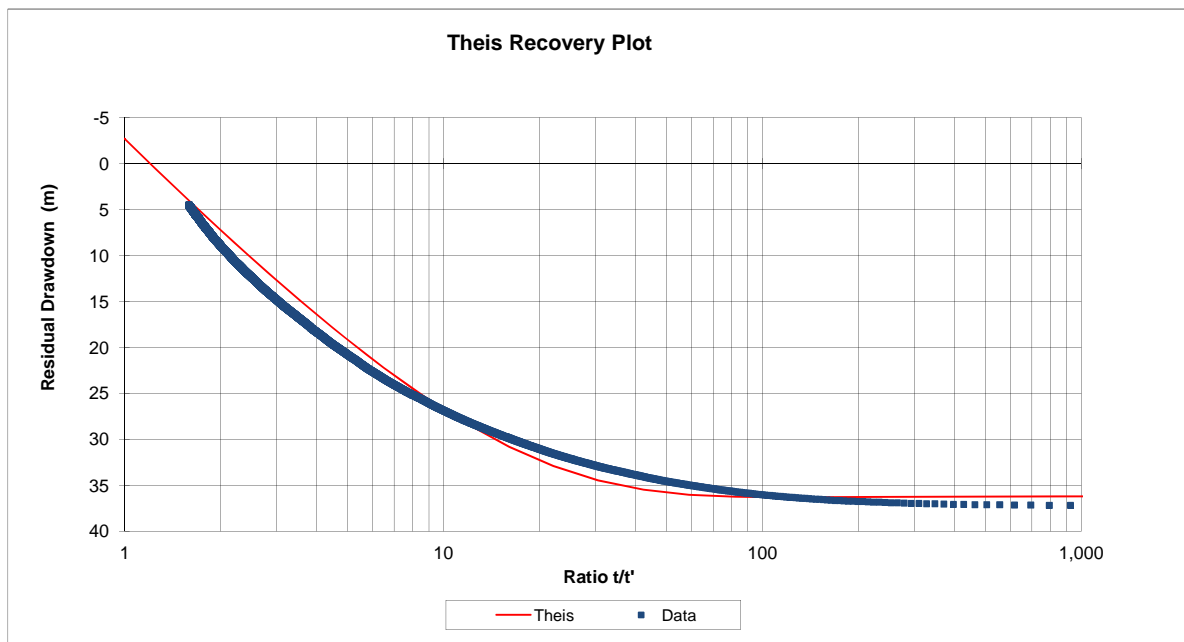
Drill-hole **PH12-3-1**
Test #1

Start Airlifting 2:00 PM
End Airlifting 10:17 AM
Final Water Level 47.4 mbgl
Initial Water Level 10.2 mbgl
Drawdown 37.2 m

Well No.	Description	Distance (m)	Start (s)	Pumping Rate (m ³ /s)
1	Constant rate test	52.00	0	3.15E-03
1	Recovery	52.00	332,252	-3.15E-03

Hydraulic Conductivity, K 1E-07 m/s
Transmissivity, T 2E-05 m²/s

Storativity, S 4E-04
Offset 1.0



TEST COMMENTS:

M:\1\01\00457\06\A\Report9 - Open Pit Water Management Plan\Appendices\B - Hydraulic Testing\B.2 Pumping Test Analysis\Theis analysis\Theis Recovery\PW13-3-[PH12-3-1 (105m).xlsx]Theis Recovery Analysis - 105m

A	20OCT12	ISSUED WITH REPORT	FTJ	CAS	KJB
REV	DATE	DESCRIPTION	PREP'D	CHK'D	APP'D

**NEW GOLD INC.
BLACKWATER GOLD PROJECT**

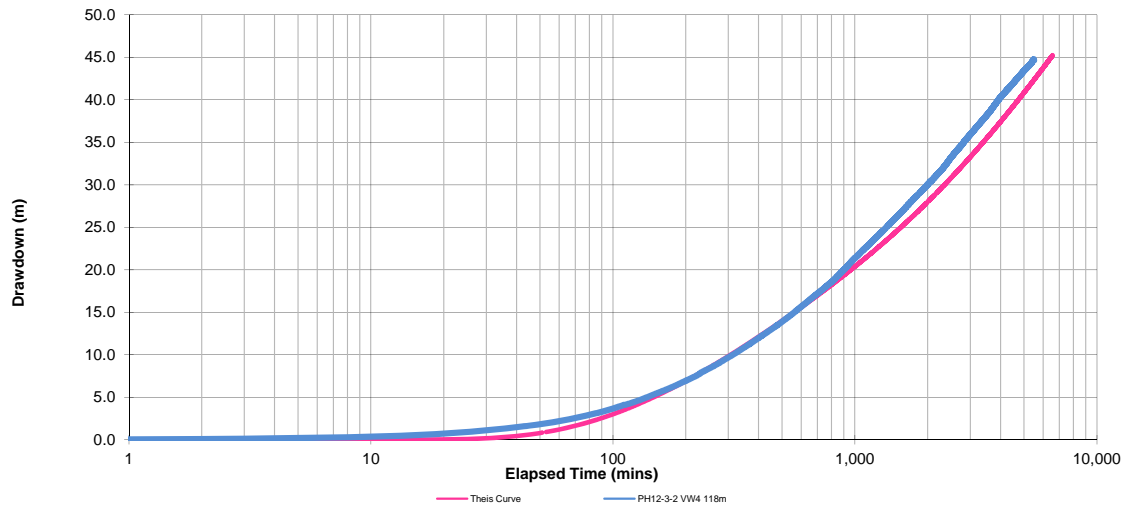
**HYDRAULIC PROPERTIES CALCULATION
USING THEIS METHOD (1935)**

29/11/2013 11:26

Pumping Well: PW13-3
Measurement Well: PH12-3-2
Distance: 52 m
VWP depth: 118 m
Transmissivity: 3E-05 m²/s
Storativity: 2E-04
Hydraulic Conductivity: 1.E-07 m/sec

Test start: 9/21/04 12:02 PM
Test stop: 9/22/04 10:13 AM
Test duration: 331200 sec
Field technician: FTJ
Analyst: FTJ

Well No.	Description	Distance (m)	start (s)	pumping rate (m3/s)
1	PH12-3-2	52	0	3.15E-03
2		0	0	0.00E+00
3	Image well 1	300	0	3.15E-03
4		0	0	0.00E+00
5		0	0	0.00E+00
6		0	0	0.00E+00
7		0	0	0.00E+00
8		0	0	0.00E+00
9		0	0	0.00E+00
10		0	0	0.00E+00



TEST COMMENTS:

Image wells were used in the analysis to assess the potential impact of flow boundaries on results. Each image well represents a flow boundary.

M:\1\01\00457\06\A\Report\9 - Open Pit Water Management Plan\Appendices\B - Hydraulic Testing\B.2 Pumping Test Analysis\This analysis\[PH12-3-2.xls]This PH12-3-2_118m

REV	DATE	DESCRIPTION	PREP'D	CHK'D	APP'D
0	28/07/201	ISSUED WITH REPORT	FTJ	CAS	KJB

**NEW GOLD INC.
BLACKWATER GOLD PROJECT**

**PUMPING RECOVERY TEST
USING THIS METHOD (1935)**

21/11/2013 11:41

Project No. VA101-00457/6
Field Technician FTJ
Analyst FTJ
Test Date 19-Jul-13
Drill-hole Diameter 0.20 m
Top of Test Zone 126 mbgs
Bottom of Test Zone 303 mbgs
Test Length 177 m

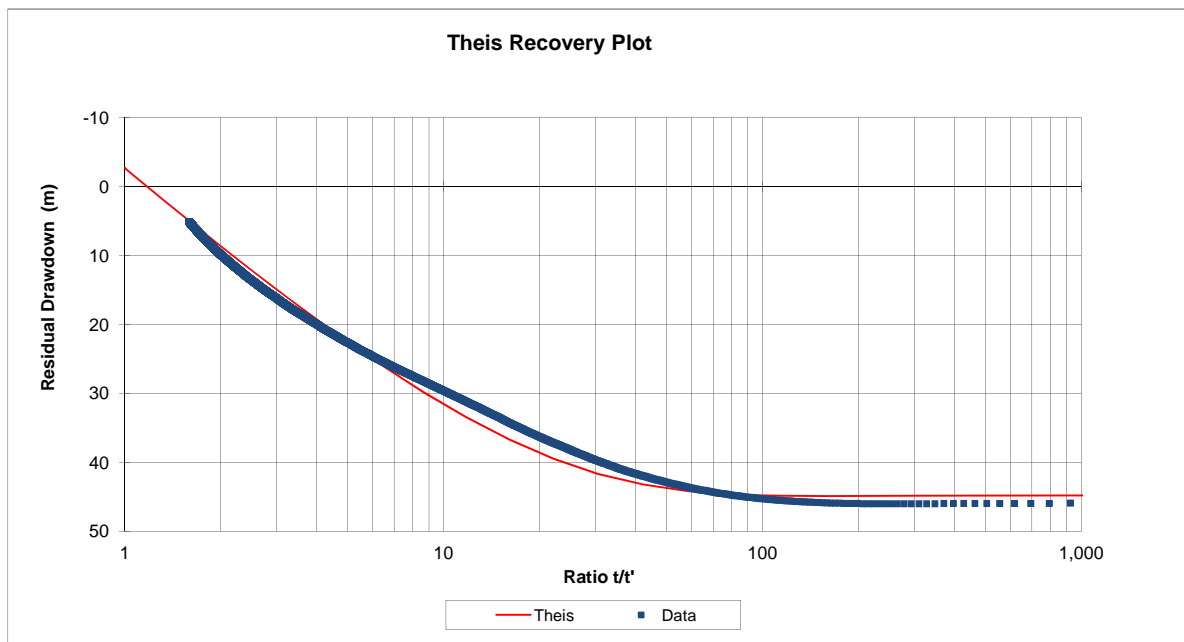
Drill-hole **PH12-3-2**
Test #1

Start Airlifting 2:00 PM
End Airlifting 10:17 AM
Final Water Level 48.2 mbgl
Initial Water Level 2.3 mbgl
Drawdown 45.8 m

Well No.	Description	Distance (m)	Start (s)	Pumping Rate (m ³ /s)
1	Constant rate test	52.00	0	3.15E-03
1	Recovery	52.00	332,252	-3.15E-03

Hydraulic Conductivity, K 8E-08 m/s
Transmissivity, T 2E-05 m²/s

Storativity, S 3E-04
Offset 1.0



TEST COMMENTS:

M:\1\01\00457\06\A\Report9 - Open Pit Water Management Plan\Appendices\B - Hydraulic Testing\B.2 Pumping Test Analysis\Theis analysis\Theis Recovery\PW13-3-[PH12-3-2 (118m).xlsx]Theis Recovery Analysis - 118m

REV	DATE	DESCRIPTION	PREP'D	CHK'D	APP'D
0	20OCT13	ISSUED WITH REPORT	FTJ	CAS	KJB

**NEW GOLD INC.
BLACKWATER GOLD PROJECT**

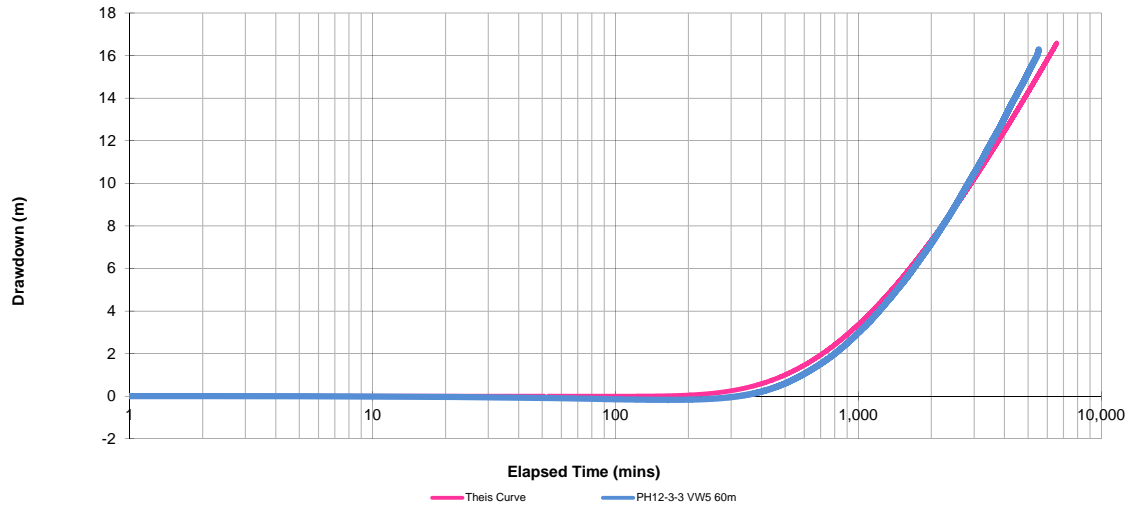
**HYDRAULIC PROPERTIES CALCULATION
USING THEIS METHOD (1935)**

21/11/2013 11:49

Pumping Well: PW13-3
Measurement Well: PH12-3-3
Distance: 101 m
VWP depth: 120 m
Transmissivity: 3E-05 m²/s
Storativity: 5E-04
Hydraulic Conductivity: 1.E-07 m/sec

Test start: 9/21/04 12:02 PM
Test stop: 9/22/04 9:13 AM
Test duration: 331200 sec
Field technician: FTJ
Analyst: FTJ

Well No.	Description	Distance (m)	start (s)	pumping rate (m3/s)
1	PH12-3-3	101	0	3.15E-03
2		0	0	0.00E+00
3		0	0	0.00E+00
4		0	0	0.00E+00
5		0	0	0.00E+00
6		0	0	0.00E+00
7		0	0	0.00E+00
8		0	0	0.00E+00
9		0	0	0.00E+00
10		0	0	0.00E+00



TEST COMMENTS:

M:\1\01\00457\06\A\Report\9 - Open Pit Water Management Plan\Appendices\B - Hydraulic Testing\B.2 Pumping Test Analysis\Theis analysis\PH12-3-3.xls\Theis PH12-3-3_120m

REV	DATE	DESCRIPTION	PREPD	CHKD	APPD
0	28/07/201	ISSUED WITH REPORT	FTJ	CAS	KJB

**NEW GOLD INC.
BLACKWATER GOLD PROJECT**

**PUMPING RECOVERY TEST
USING THIS METHOD (1935)**

21/11/2013 11:51

Project No. VA101-00457/6
Field Technician FTJ
Analyst FTJ
Test Date 19-Jul-13
Drill-hole Diameter 0.20 m
Top of Test Zone 126 mbgs
Bottom of Test Zone 303 mbgs
Test Length 177 m

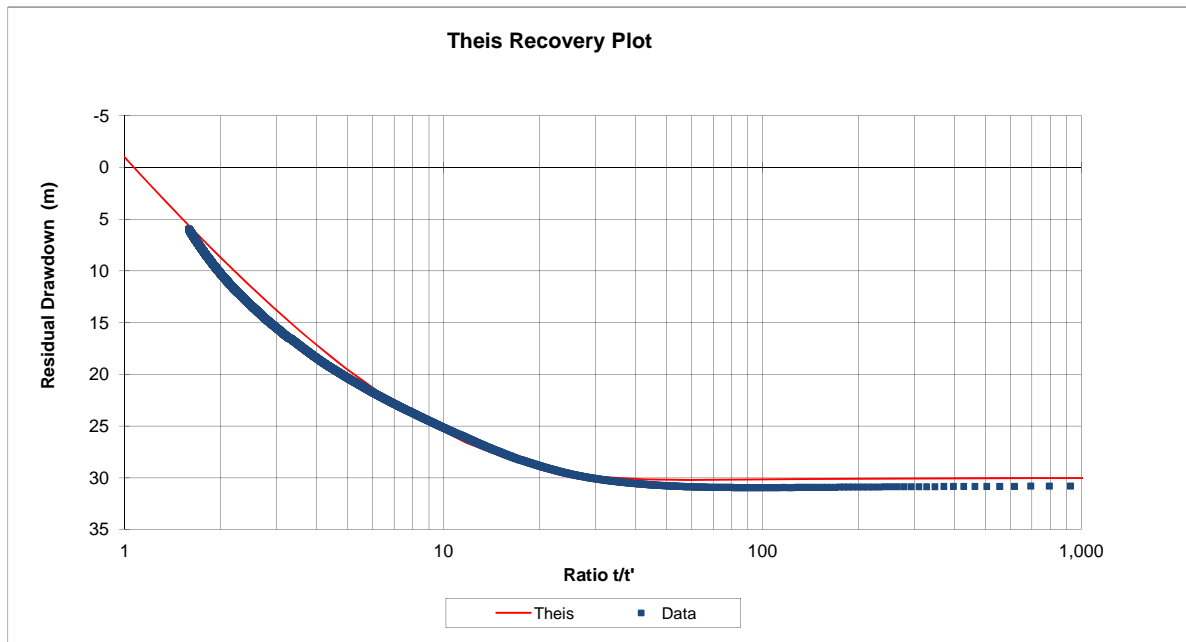
Drill-hole **PH12-3-3**
Test #1

Start Airlifting 2:00 PM
End Airlifting 10:17 AM
Final Water Level 32.8 mbgl
Initial Water Level 2.1 mbgl
Drawdown 30.8 m

Well No.	Description	Distance (m)	Start (s)	Pumping Rate (m ³ /s)
1	Constant rate test	102.00	0	3.15E-03
1	Recovery	102.00	332,252	-3.15E-03

Hydraulic Conductivity, K 1E-07 m/s
Transmissivity, T 2E-05 m²/s

Storativity, S 2E-04
Offset 0.0



TEST COMMENTS:

M:\1\01\00457\06\A\Report\9 - Open Pit Water Management Plan\Appendices\B - Hydraulic Testing\B.2 Pumping Test Analysis\Theis analysis\Theis Recovery\PW13-3-[PH12-3-3 (120m).xlsx]Theis Recovery Analysis - 120m

REV	DATE	DESCRIPTION	PREP'D	CHK'D	APP'D
0	20OCT13	ISSUED WITH REPORT	FTJ	CAS	KJB

**NEW GOLD INC.
BLACKWATER GOLD PROJECT**

**PUMPING RECOVERY TEST
USING THIS METHOD (1935)**

21/11/2013 11:52

Project No. VA101-00457/6
Field Technician FTJ
Analyst FTJ
Test Date 19-Jul-13
Drill-hole Diameter 0.20 m
Top of Test Zone 126 mbgs
Bottom of Test Zone 303 mbgs
Test Length 177 m

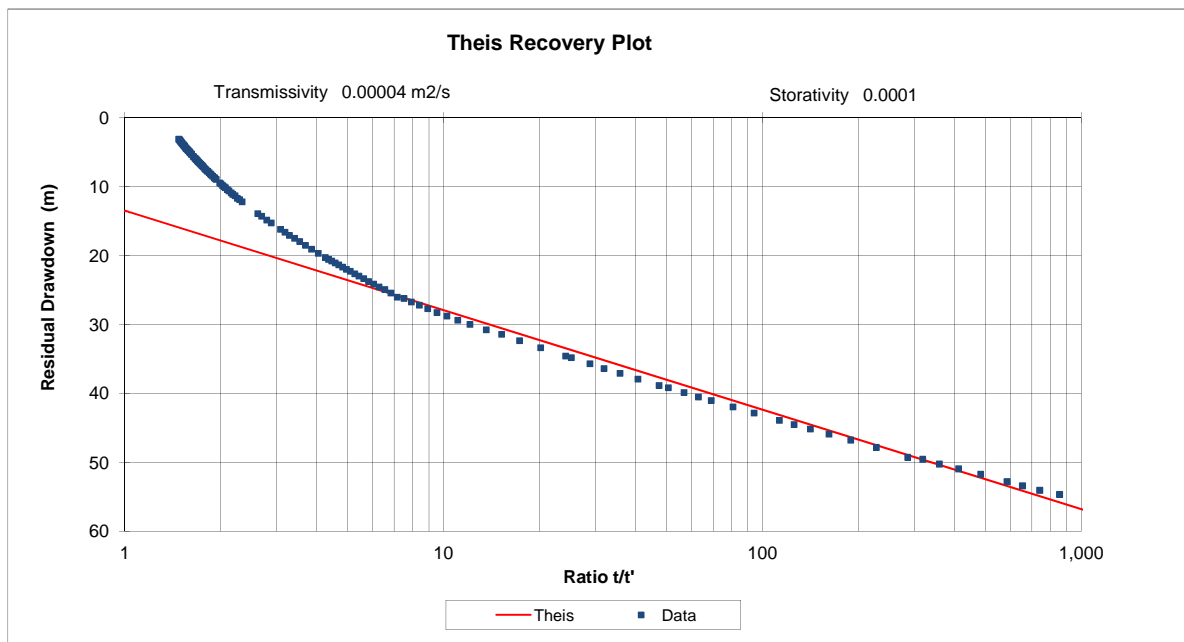
Drill-hole **PW13-3**
Test #1

Start Airlifting 2:00 PM
End Airlifting 10:17 AM
Final Water Level 70.8 mbgl
Initial Water Level 8.6 mbgl
Drawdown 62.3 m

Well No.	Description	Distance (m)	Start (s)	Pumping Rate (m ³ /s)
1	Constant rate test	0.01	0	3.15E-03
1	Recovery	0.01	332,250	-3.15E-03

Hydraulic Conductivity, K 2E-07 m/s
Transmissivity, T 4E-05 m²/s

Storativity, S 1E-04
Offset 2.6



TEST COMMENTS:

M:\1\01\00457\06\A\Report\9 - Open Pit Water Management Plan\Appendices\B - Hydraulic Testing\B.2 Pumping Test Analysis\This analysis\This Recovery\PW13-3-[PW13-3 (recovery).xlsx]This Recovery Analysis

A	20OCT13	ISSUED WITH REPORT	FTJ	CAS	KJB
REV	DATE	DESCRIPTION	PREP'D	CHK'D	APP'D

APPENDIX C

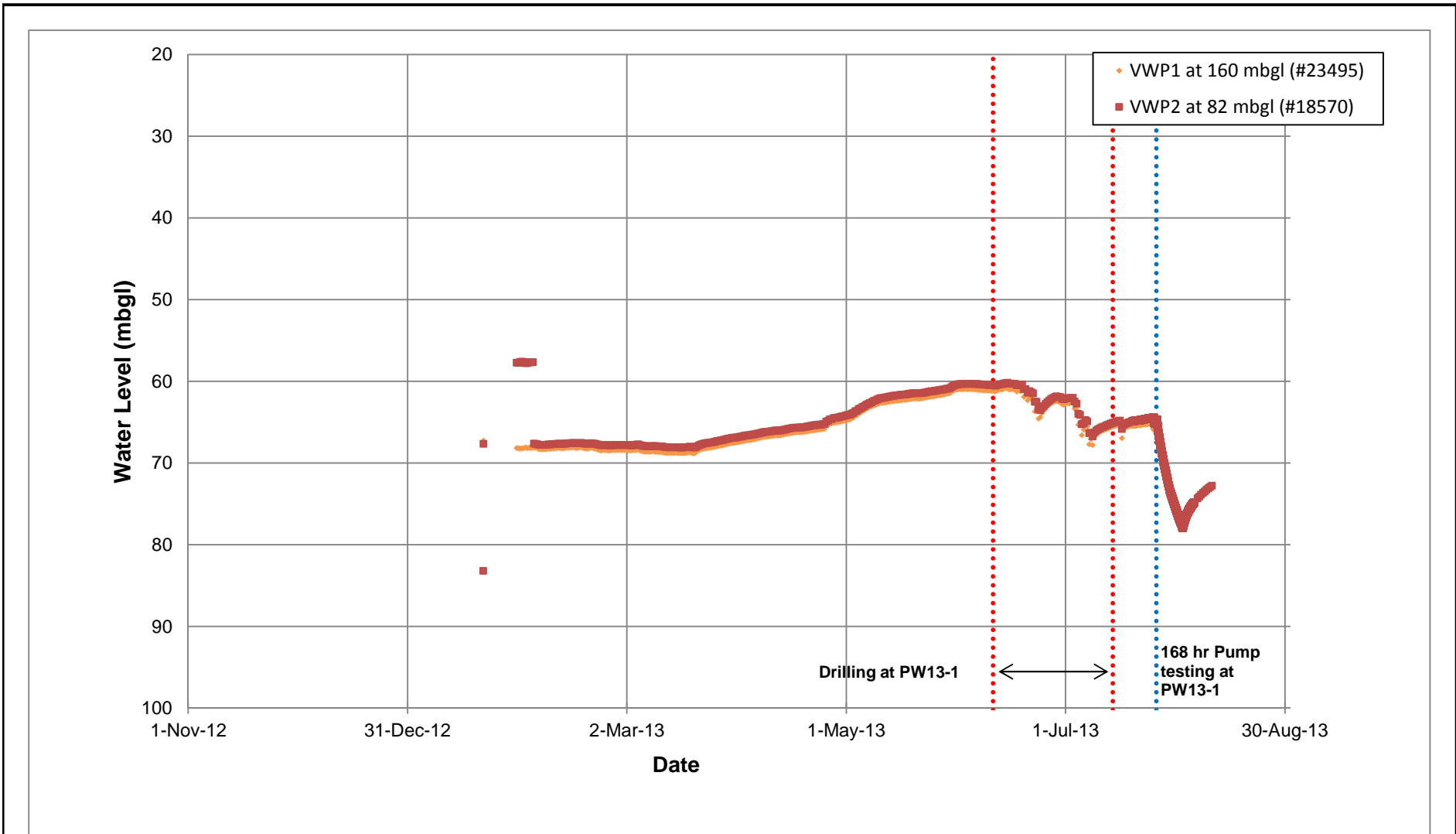
PIEZOMETRIC LEVELS

- Appendix C1 Vibrating Wire Piezometric Water Levels
- Appendix C2 Groundwater Contour Map (March 2013)

APPENDIX C1

VIBRATING WIRE PIEZOMETRIC WATER LEVELS

(Pages C1-1 to C1-12)

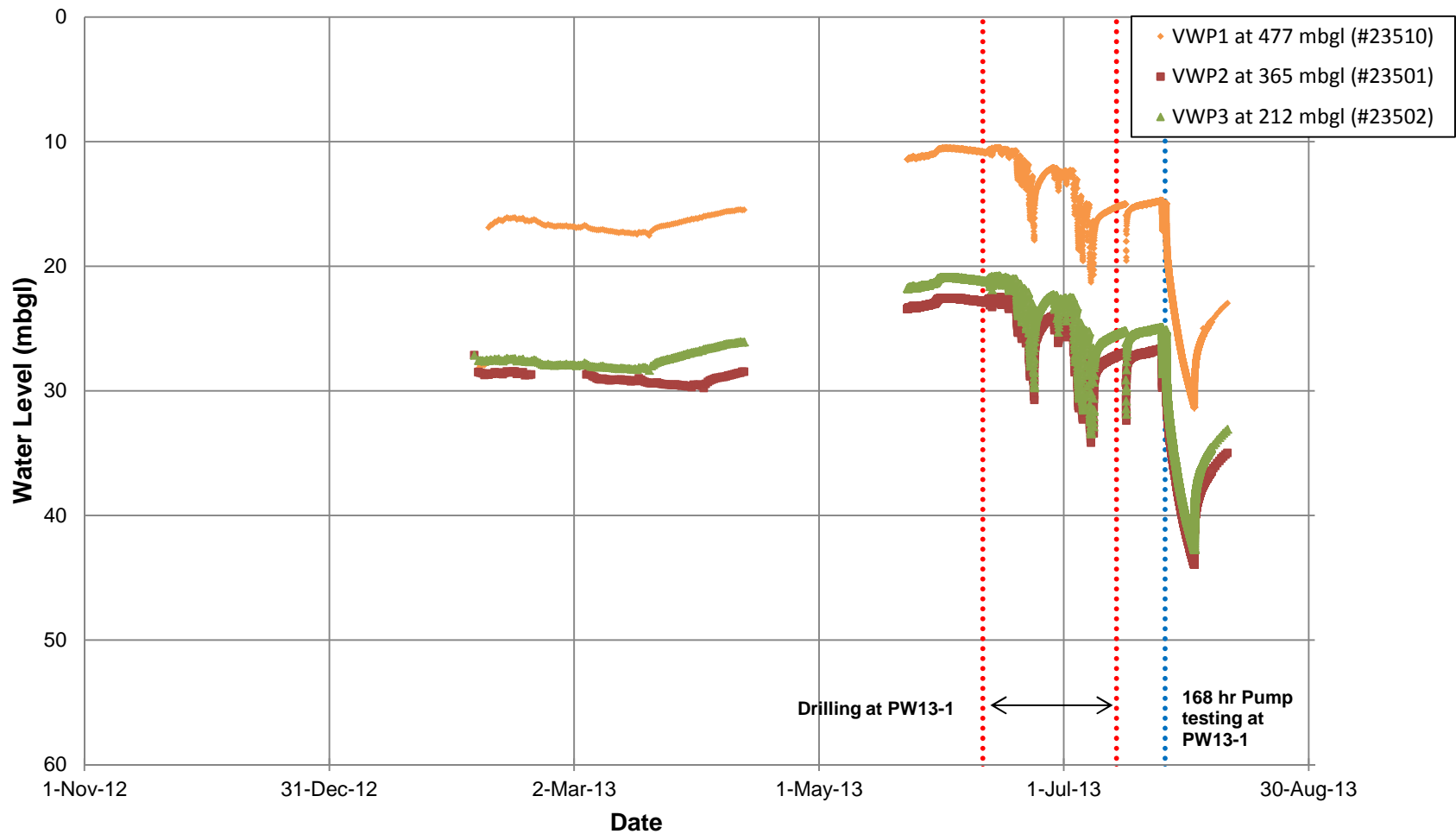


NOTES:

1. INITIAL POINTS ARE FIELD ZERO AND OPEN HOLE READINGS.
2. PIEZOMETRIC LEVELS ADJUSTED DOWNWARD BY 0.35m FOR VWP1 BASED ON DIFFERENCE OF PRE-GROUT READINGS WITH VWP2.
3. WATER LEVEL DATA FOR VWP2 BETWEEN 30 JAN - FEB 4 2013 HAS BEEN DISREGARDED AND IS LINKED TO SENSOR MALFUNCTION.

NEW GOLD INC.	
BLACKWATER GOLD PROJECT	
PIEZOMETER WATER LEVEL DATA PH13-1-1	
<i>Knight Piésold</i> CONSULTING	P/A NO. VA101-457/6
	REF. NO. 9
FIGURE C1.1	
REV 0	

0	AUG13	ISSUED WITH REPORT	FTJ	CAS	KJB
REV	DATE	BLACKWATER GOLD VWP ANALYSIS	PREP'D	CHK'D	APP'D

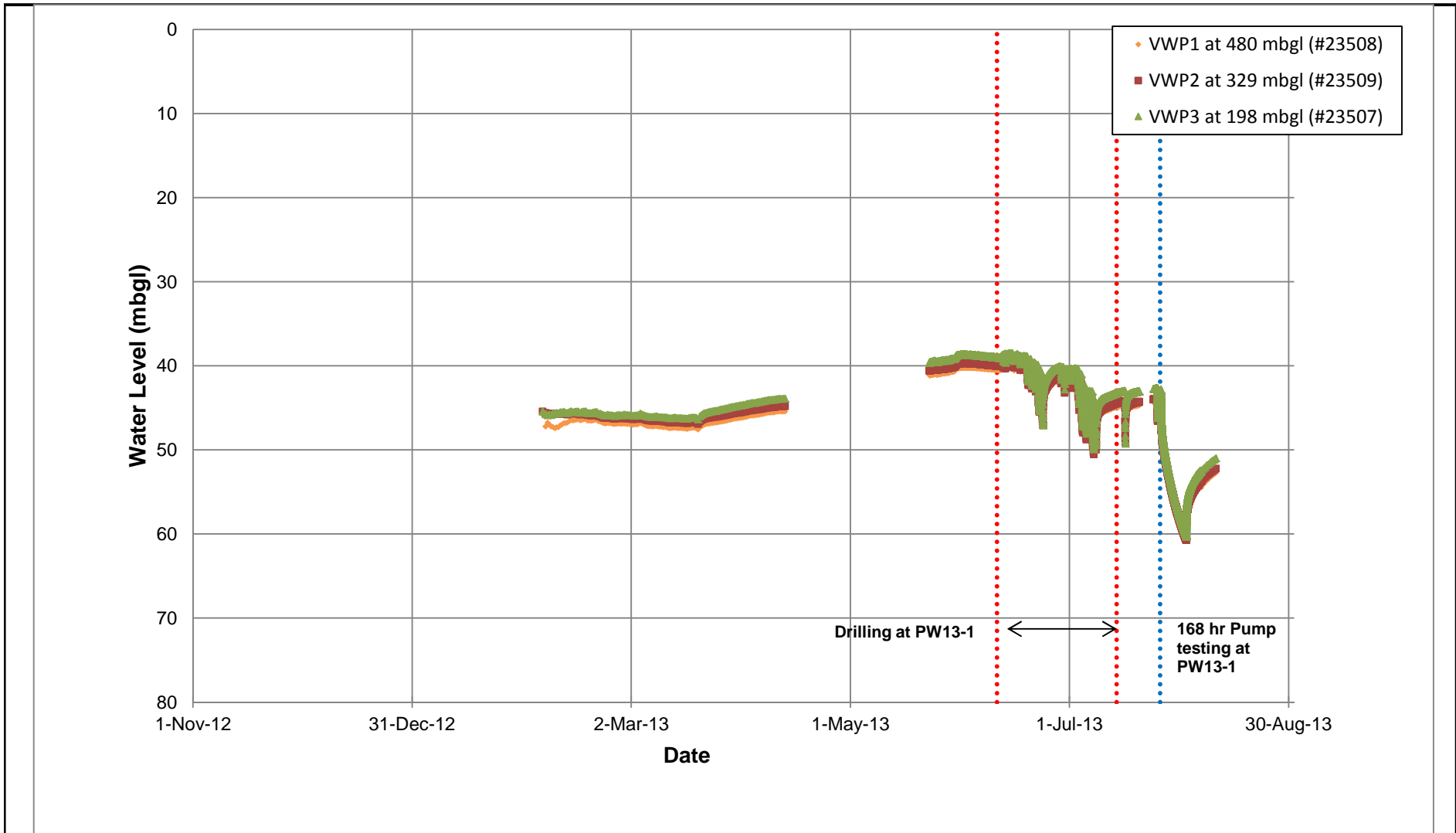


NOTES:

1. INITIAL POINTS ARE FIELD ZERO AND OPEN HOLE READINGS.
2. PIEZOMETRIC LEVELS ADJUSTED DOWNWARDS 2.20m FOR VWP2, AND 3.32m FOR VWP3 BASED ON DIFFERENCE OF PRE-GROUT READINGS WITH VWP1.
3. GAP IN WATER LEVEL DATA DUE TO LOGGING BOX MALFUNCTION.

NEW GOLD INC.	
BLACKWATER GOLD PROJECT	
PIEZOMETER WATER LEVEL DATA PH13-1-2	
<i>Knight Piésold</i> CONSULTING	P/A NO. VA101-00457/6
	REF. NO. 9
FIGURE C1.2	
REV 0	

0	AUG'13	ISSUED WITH REPORT	FTJ	CAS	KJB
REV	DATE	BLACKWATER GOLD VWP ANALYSIS	PREP'D	CHK'D	APP'D

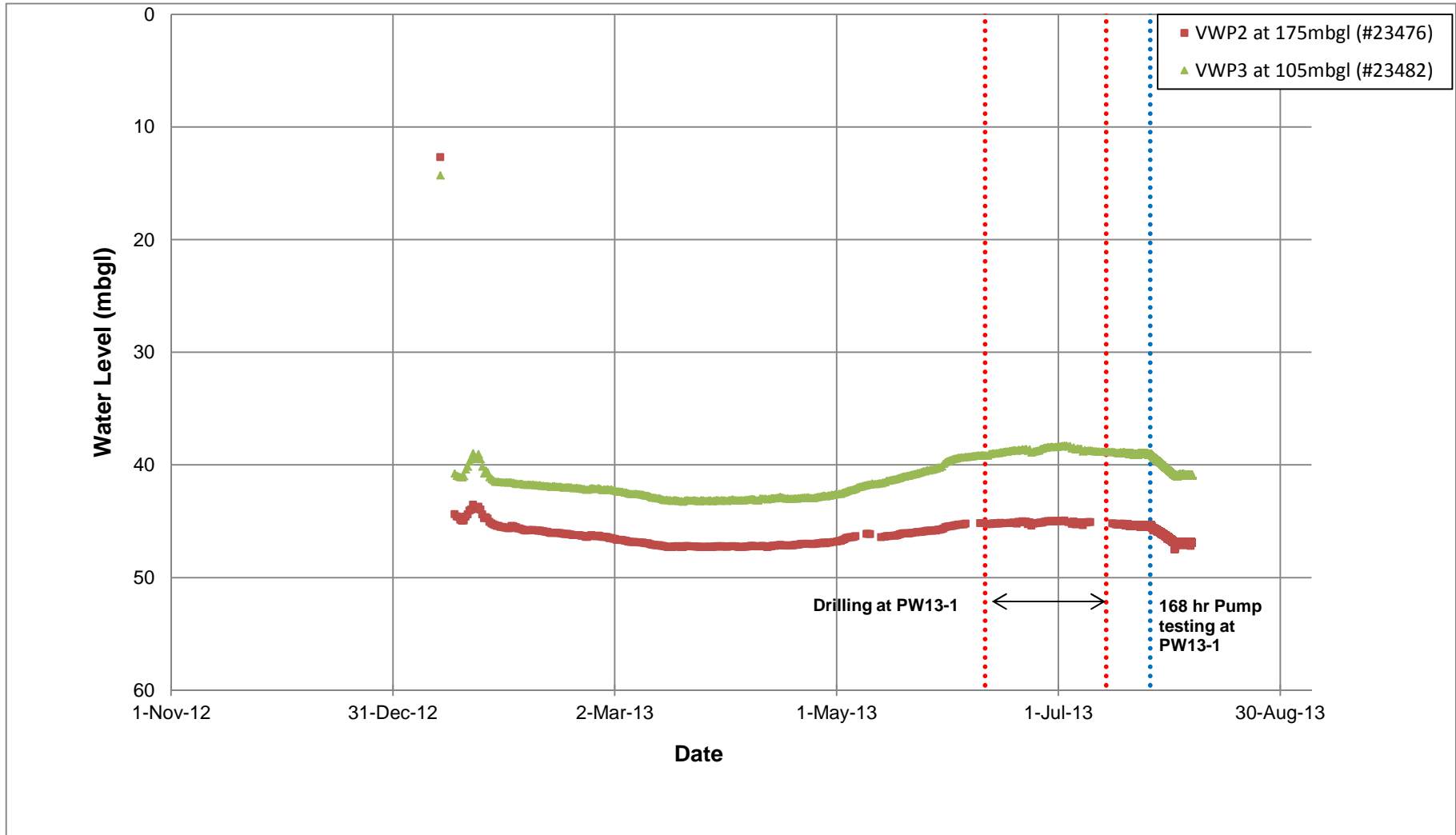


NOTES:

1. INITIAL POINTS ARE FIELD ZERO AND OPEN HOLE READINGS.
2. PIEZOMETRIC LEVELS ADJUSTED DOWNWARDS 1.80m FOR VWP2 AND 2.22m FOR VWP3 BASED ON DIFFERENCE OF PRE-GROUT READINGS WITH VWP1.
3. GAP IN WATER LEVEL DATA DUE TO LOGGING BOX MALFUNCTION.

NEW GOLD INC.	
BLACKWATER GOLD PROJECT	
PIEZOMETER WATER LEVEL DATA PH13-1-3	
<i>Knight Piésold</i> CONSULTING	P/A NO. VA101-457/6
	REF. NO. 9
FIGURE C1.3	
REV 0	

0	AUG'13	ISSUED WITH REPORT	FTJ	CAS	KJB
REV	DATE	BLACKWATER GOLD VWP ANALYSIS	PREP'D	CHK'D	APP'D

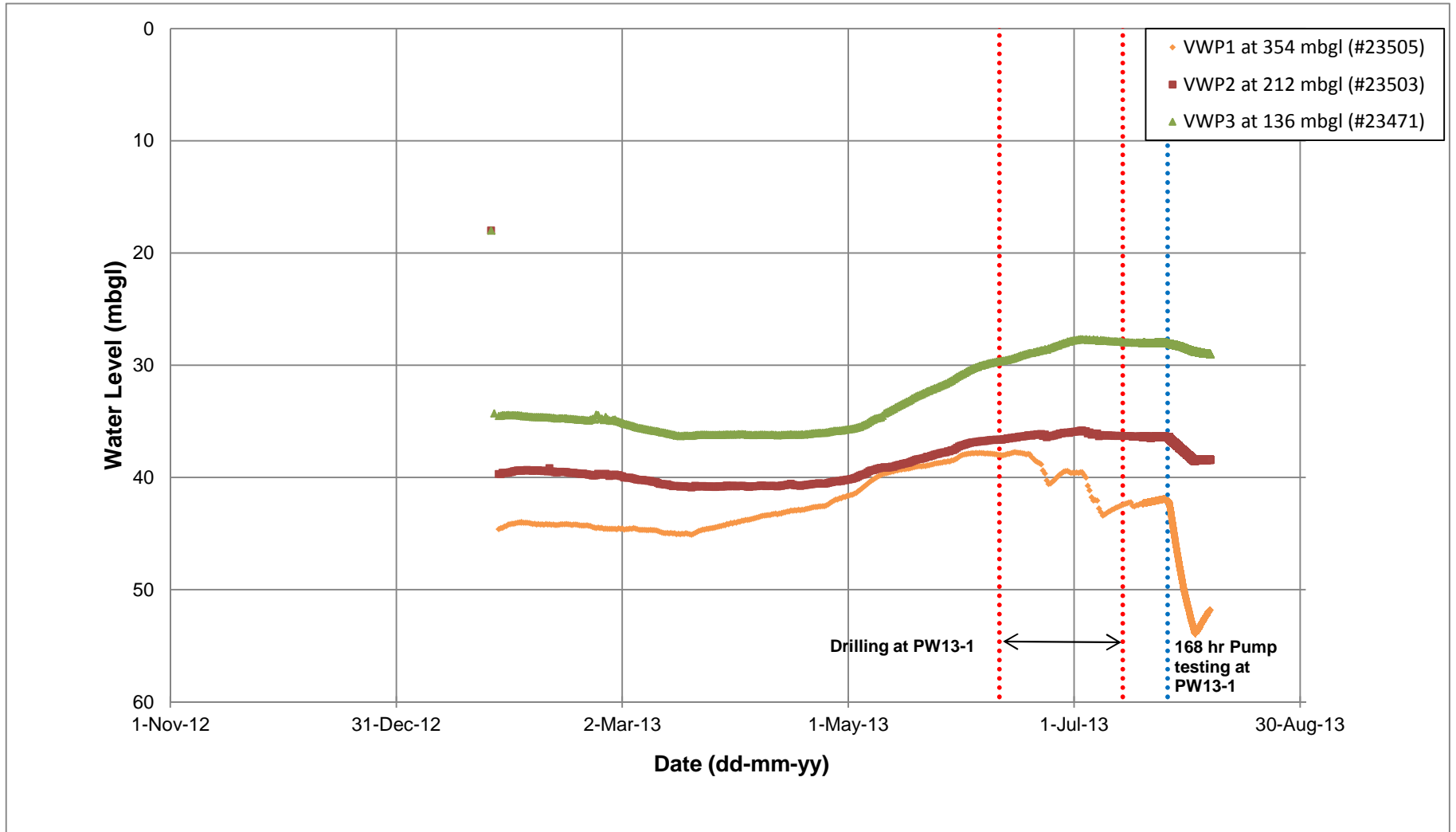


NOTES:

1. INITIAL POINTS ARE FIELD ZERO AND OPEN HOLE READINGS.
2. NO DATA IS AVAILABLE FROM VWP1 (SENSOR 23488) DUE TO MALFUNCTION.

NEW GOLD INC.	
BLACKWATER GOLD PROJECT	
PIEZOMETER WATER LEVEL DATA PH12-2-1	
	P/A NO. VA101-00457/6
	REF. NO. 9
FIGURE C1.4	
REV 0	

0	AUG'13	ISSUED WITH REPORT	FTJ	CAS	KJB
REV	DATE	BLACKWATER GOLD VWP ANALYSIS	PREP'D	CHK'D	APP'D

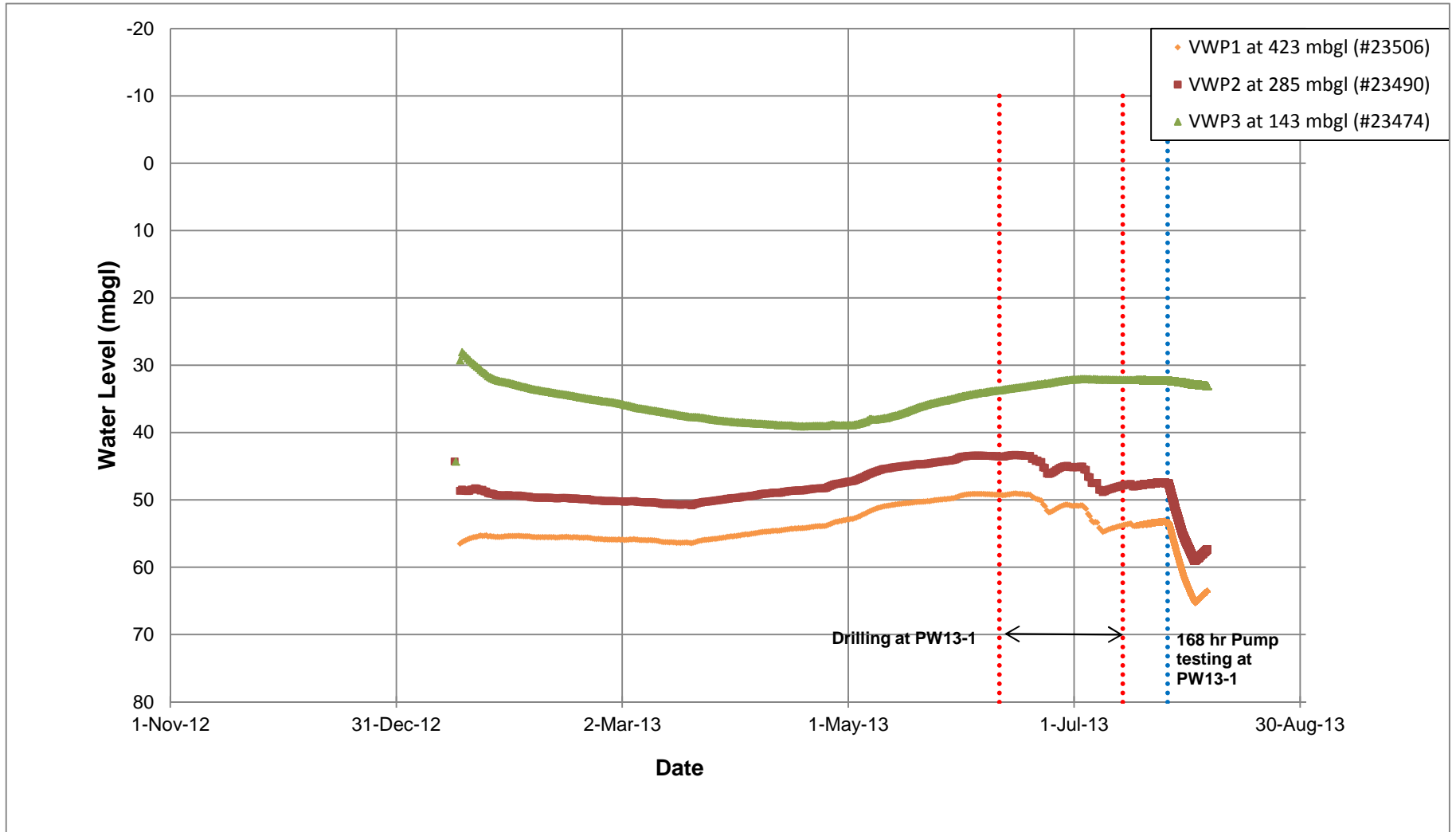


NOTES:

- INITIAL POINTS ARE FIELD ZERO AND OPEN HOLE READINGS.
- PIEZOMETRIC LEVELS ADJUSTED DOWNWARDS BY 0.05m FOR VWP1 AND 3.40m FOR VWP3 BASED ON DIFFERENCE OF PRE-GROUT READINGS WITH VWP2.

NEW GOLD INC.		
BLACKWATER GOLD PROJECT		
PIEZOMETER WATER LEVEL DATA PH13-2-2		
<i>Knight Piésold</i> CONSULTING	P/A NO. VA101-457/6	REF. NO. 9
	FIGURE C1.5	
REV	DATE	APP'D

0	AUG13	ISSUED WITH REPORT	FTJ	CAS	KJB
REV	DATE	BLACKWATER GOLD VWP ANALYSIS	PREP'D	CHK'D	APP'D

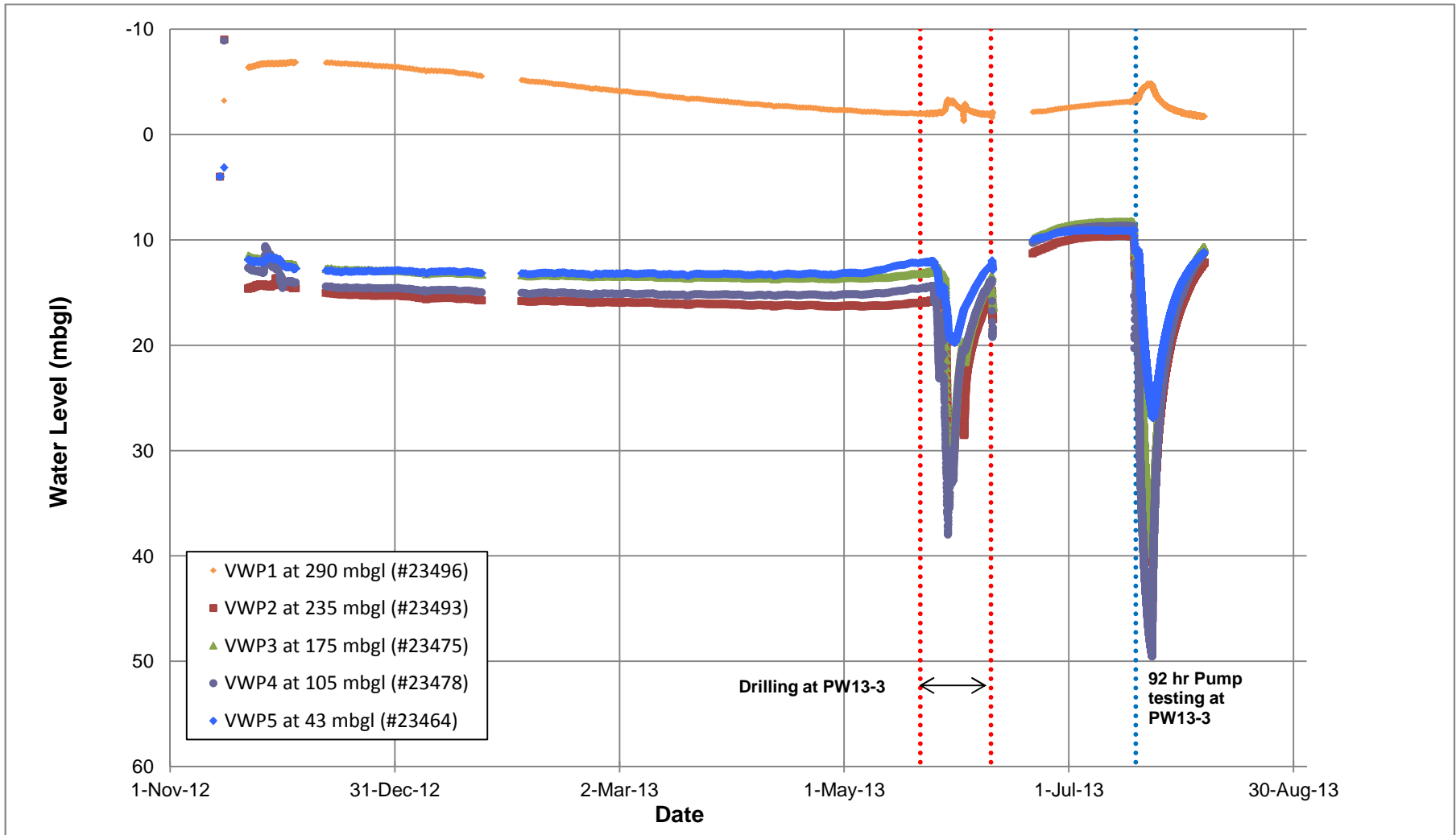


NOTES:

- INITIAL POINTS ARE FIELD ZERO AND OPEN HOLE READINGS.
- PIEZOMETRIC LEVELS ADJUSTED DOWNWARDS BY 1.99m FOR VWP2 AND 3.95m FOR VWP3 BASED ON DIFFERENCE OF PRE-GROUT READINGS WITH VWP1.
- VW3 WAS INSTALLED INSIDE RODS THAT COULD NOT BE REMOVED FROM THE HOLE.

NEW GOLD INC.	
BLACKWATER GOLD PROJECT	
PIEZOMETER WATER LEVEL DATA PH13-2-3	
Knight Piésold CONSULTING	P/A NO. VA101-00457/6
	REF. NO. 9
FIGURE C1.6	
REV 0	

0	AUG'13	ISSUED WITH REPORT	FTJ	CAS	KJB
REV	DATE	BLACKWATER GOLD VWP ANALYSIS	PREP'D	CHK'D	APP'D

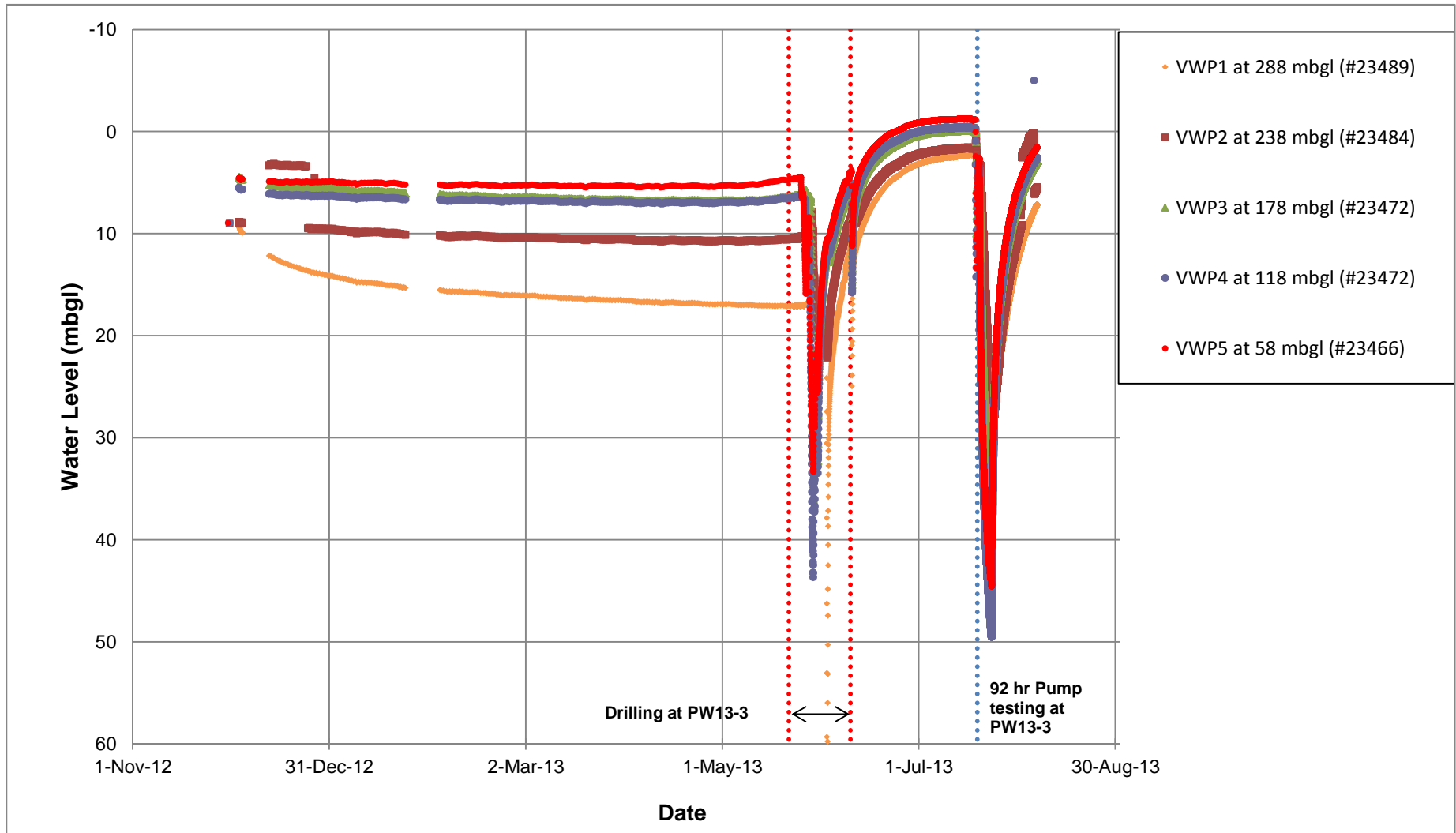


NOTES:

1. INITIAL POINTS ARE FIELD ZERO AND OPEN HOLE READINGS.
2. GAP IN DATA IS WHERE DIFFERENT SETTINGS ON DATA BOX WERE TESTED (DEC 4 - 8, 2012).
3. PIEZOMETRIC LEVELS ADJUSTED DOWNWARD BY 1.57 m FOR VWP3, 2.13m FOR VWP4, AND 2.93m FOR VWP5 BASED ON DIFFERENCE OF PRE-GROUT READINGS WITH VWP1 AND VWP2.

NEW GOLD INC.	
BLACKWATER GOLD PROJECT	
PIEZOMETER WATER LEVEL DATA PH12-3-1	
Knight Piésold CONSULTING	P/A NO. VA101-457/6
	REF. NO. 9
FIGURE C1.7	
REV 0	

0	AUG'13	ISSUED WTH REPORT	FTJ	CAS	KJB
REV	DATE	BLACKWATER GOLD VWP ANALYSIS	PREP'D	CHK'D	APP'D

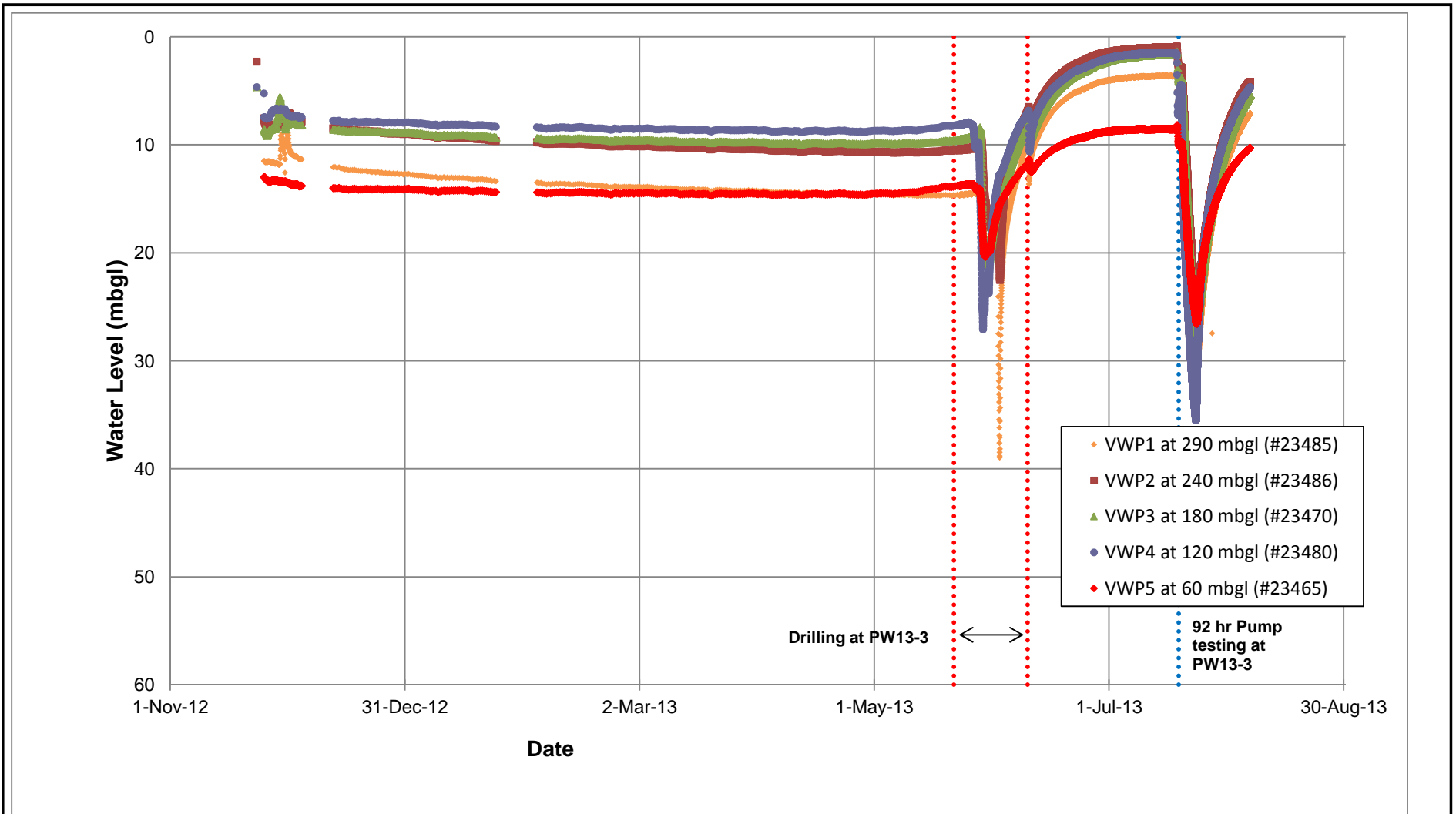


NOTES:

1. INITIAL POINTS ARE FIELD ZERO AND OPEN HOLE READINGS.
2. GAP IN DATA IS WHERE DIFFERENT SETTING ON DATA BOX WERE TESTED (JAN 20 - FEB 13, 2013).
3. PIEZOMETRIC LEVELS ADJUSTED DOWNWARD BY 0.25 M FOR VWP1, 2.05M FOR VWP3, 1.24M FOR VWP4 AND 1.04M FOR VWP5 BASED ON DIFFERENCE OF PRE-GROUT READINGS WITH VWP1 AND VWP2.

NEW GOLD INC.	
BLACKWATER GOLD PROJECT	
PIEZOMETER WATER LEVEL DATA PH12-3-2	
<i>Knight Piésold</i> CONSULTING	P/A NO. VA101-00457/6
REF. NO. 9	
FIGURE C1.8	
REV 0	

0	SEPT'13	ISSUED WITH REPORT	FTJ	CAS	KJB
REV	DATE	BLACKWATER GOLD VWP ANALYSIS	PREP'D	CHK'D	APP'D

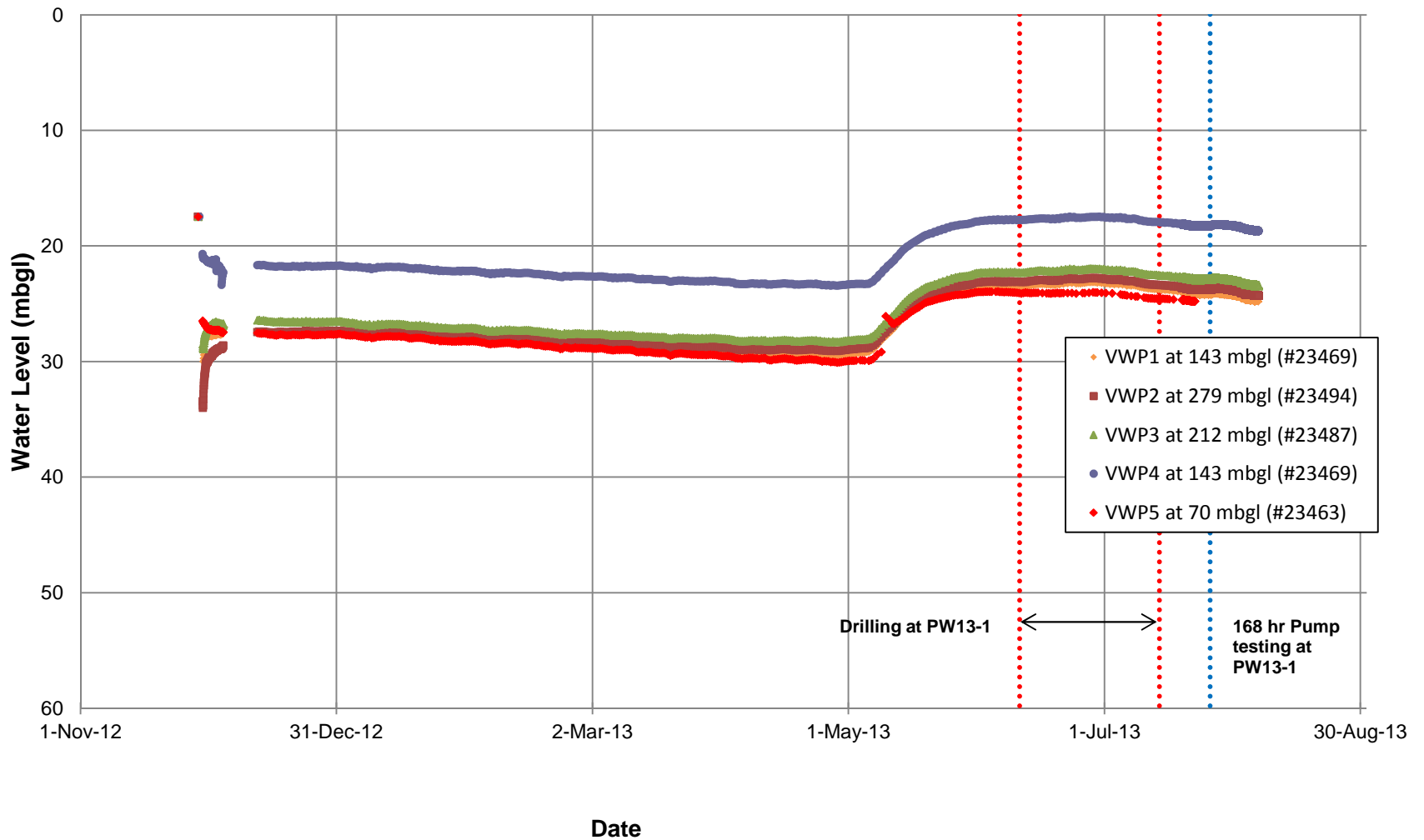


NOTES:

1. INITIAL POINTS ARE FIELD ZERO AND OPEN HOLE READINGS.
2. GAP IN DATA IS WHERE DIFFERENT SETTINGS ON DATA BOX WERE TESTED (JAN 20 - FEB 13, 2013).
3. PIEZOMETRIC LEVELS ADJUSTED DOWNWARD BY 2.36m FOR VWP2, 2.54m FOR VWP3, 2.53m FOR VWP4, AND 12.65m FOR VWP5 BASED ON DIFFERENCE OF PRE-GROUT READINGS WITH VWP1.

NEW GOLD INC.		
BLACKWATER GOLD PROJECT		
PIEZOMETER WATER LEVEL DATA PH12-3-3		
Knight Piésold CONSULTING	P/A NO. VA101-00457/6	REF. NO. 9
	FIGURE C1.9	
REV 0		

0	SEPT'13	ISSUED WITH REPORT	FTJ	CAS	KJB
REV	DATE	BLACKWATER GOLD VWP ANALYSIS	PREP'D	CHK'D	APP'D

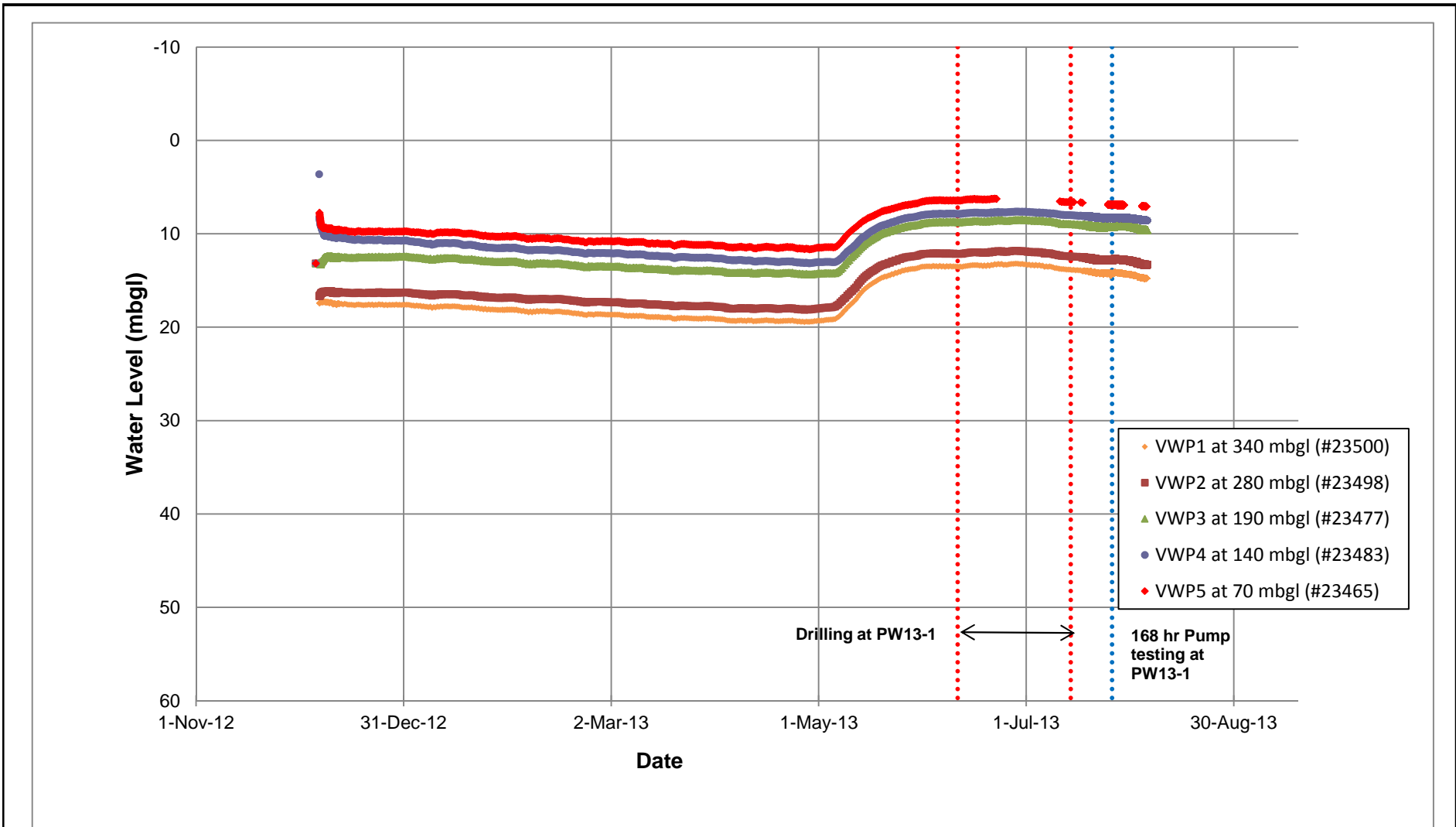


NOTES:

- INITIAL POINTS ARE FIELD ZERO AND OPEN HOLE READINGS.
- GAP IN DATA IS WHERE DIFFERENT SETTING SON DATA BOX WERE TESTED (JAN 20 - FEB 13, 2013).
- PIEZOMETRIC LEVELS ADJUSTED DOWNWARD BY 1.01 M FOR VWP1, 3.34M FOR VWP2, 2.01M FOR VWP4 AND 14.41M FOR VWP5 BASED ON DIFFERENCE OF PRE-GROUT READINGS WITH VWP3.

NEW GOLD INC.		
BLACKWATER GOLD PROJECT		
PIEZOMETER WATER LEVEL DATA PH12-4-1		
	P/A NO. VA101-457/6	REF. NO. 9
	FIGURE C1.10	
REV 0		

0	AUG'13	ISSUED WITH REPORT	FTJ	CAS	KJB
REV	DATE	BLACKWATER GOLD VWP ANALYSIS	PREP'D	CHK'D	APP'D

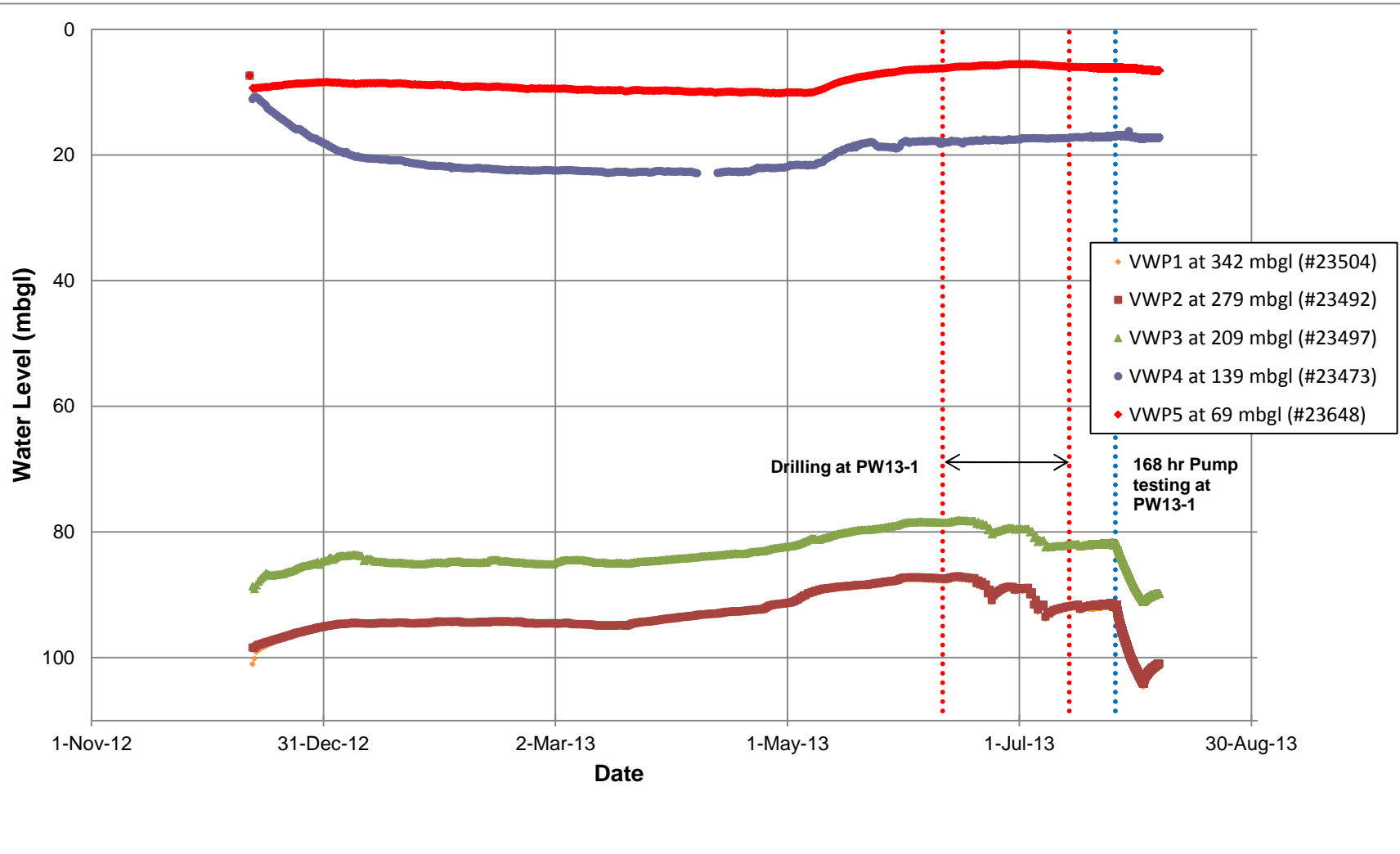


NOTES:

1. INITIAL POINTS ARE FIELD ZERO AND OPEN HOLE READINGS.
2. PIEZOMETRIC LEVELS ADJUSTED UPWARD BY 4.57m FOR VWP1, 1.35m FOR VWP2, AND 0.31m FOR VWP3 BASED ON DIFFERENCE OF PRE-GROUT READINGS WITH VWP4 AND VWP5.
3. VWP5 DATA GAPS DUE TO VWP (23465) SENSOR MALFUNCTION.

NEW GOLD INC.	
BLACKWATER GOLD PROJECT	
PIEZOMETER WATER LEVEL DATA PH12-4-2	
	P/A NO. VA101-457/6
	REF. NO. 9
FIGURE C1.11	
REV 0	

0	AUG'13	ISSUED WITH REPORT	FTJ	-	-
REV	DATE	BLACKWATER GOLD VWP ANALYSIS	PREP'D	CHK'D	APP'D



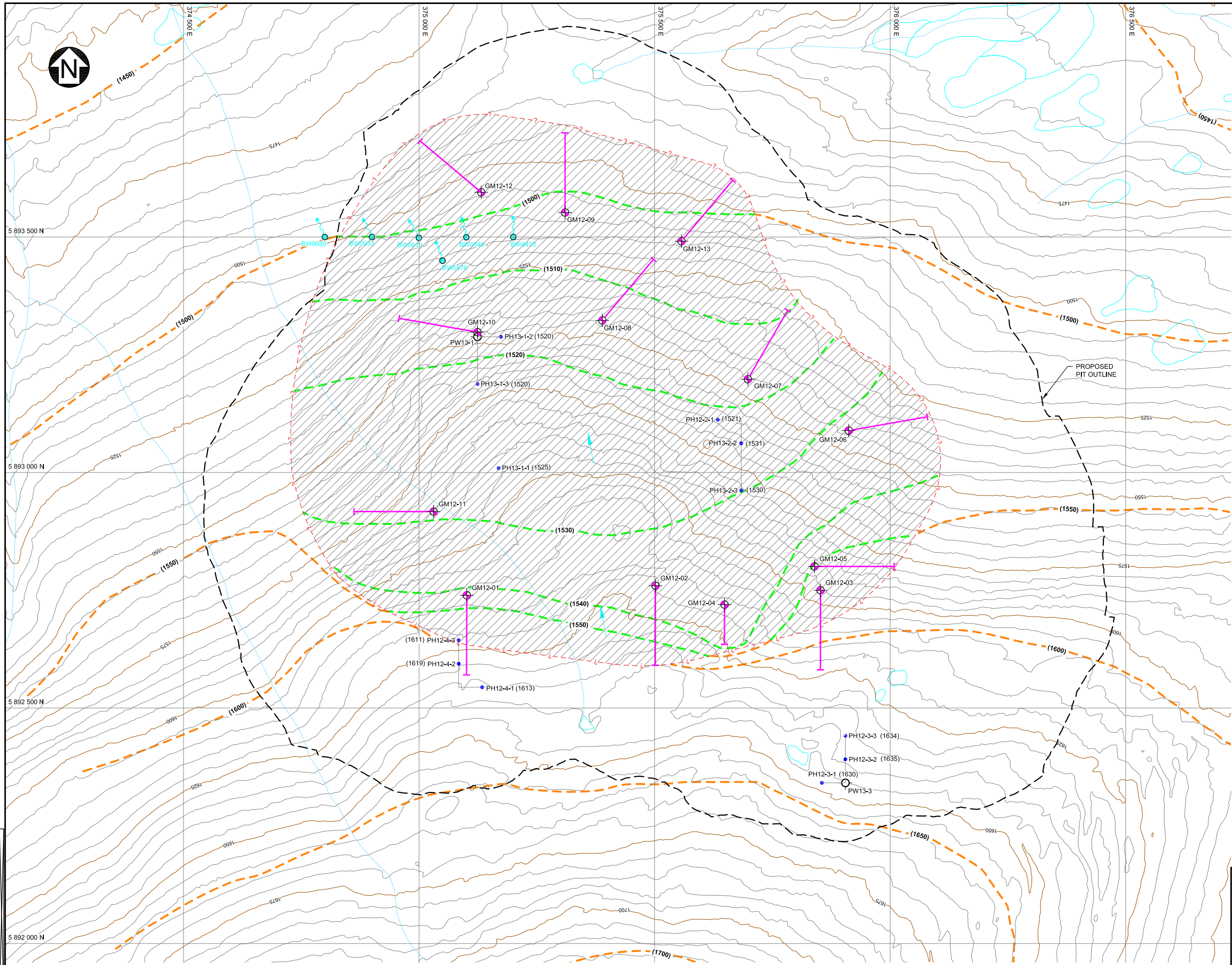
NOTES:

1. INITIAL POINTS ARE FIELD ZERO AND OPEN HOLE READINGS.
2. PIEZOMETRIC LEVELS ADJUSTED UPWARD BY 0.98m FOR VWP1 AND DOWNWARD BY 2.08m FOR VWP2, 0.84m FOR VWP4 AND 0.14m FOR VWP5 BASED ON DIFFERENCE OF PRE-GROUT READINGS WITH VWP3.
3. VWP4 DATA GAPS DUE TO VWP (23473) SENSOR MALFUNCTION.

NEW GOLD INC.	
BLACKWATER GOLD PROJECT	
PIEZOMETER WATER LEVEL DATA PH12-4-3	
	P/A NO. VA101-00457/6
	REF. NO. 9
FIGURE C1.12	
REV 0	

0	AUG'13	ISSUED WITH REPORT	FTJ	CAS	KJB
REV	DATE	BLACKWATER GOLD VWP ANALYSIS	PREP'D	CHK'D	APP'D

APPENDIX C2
GROUNDWATER CONTOUR MAP (MARCH 2013)
(Pages C2-1)



OBSERVATION WELLS			
ID	EASTING	NORTHING	TOTAL DEPTH
PH13-1-1	375,169	5,893,009	283
PH13-1-2	375,174	5,893,288	485
PH13-1-3	375,174	5,893,188	485
PH12-2-1	375,632	5,893,112	327
PH13-2-2	375,684	5,893,062	430
PH13-2-3	375,684	5,893,012	433
PH12-3-1	375,853	5,892,341	302
PH12-3-2	375,903	5,892,391	302
PH12-3-3	375,903	5,892,441	299
PH12-4-1	375,136	5,892,544	349
PH12-4-2	375,086	5,892,594	350
PH12-4-3	375,086	5,892,644	351

PUMP WELLS			
ID	EASTING	NORTHING	TOTAL DEPTH
PW13-1	375,124	5,893,288	302
PW13-3	375,905	5,892,341	302

- LEGEND :**
- PUMP WELLS WITH OBSERVATION WELLS @ 50 m & 100 m DISTANCE
 - ARTESIAN EXPLORATION DRILLHOLES
 - GROUNDWATER CONTOUR (masl) WITHIN INFERRED ZONE OF LOWER PERMEABILITY BEDROCK (10 m)
 - GROUNDWATER CONTOUR (masl) WITHIN INFERRED ZONE OF HIGHER PERMEABILITY BEDROCK (50 m)
 - INFERRED GROUNDWATER FLOW DIRECTION
 - HIGHEST PIEZOMETRIC LEVEL AT EACH OBSERVATION WELL (METERS)
 - GEOMECHANICAL DRILLHOLES (13)
 - ESTIMATED EXTENT OF HIGHER PERMEABILITY ZONE

- NOTES:**
- TOPOGRAPHIC CONTOUR INTERVAL IS 5 METRES.
 - OPEN PIT DESIGN BY NORWEST CORPORATION (AUG. 2013).
 - THE HIGHEST PIEZOMETRIC LEVEL IN THE INFERRED HIGHER PERMEABILITY BEDROCK ZONE HAS BEEN PLOTTED FOR PH13-1-2 THE HIGHEST PIEZOMETRIC LEVEL IN PH13-1-2 IS WITHIN THE INFERRED ZONE OF LOWER PERMEABILITY BEDROCK.
 - PIEZOMETRIC LEVELS ARE OBTAINED FROM DATA RECORDED ON MARCH 18 - 20, 2013
 - PIEZOMETRIC LEVELS MEASURED AT VWP'S IN GEOMECHANICAL DRILLHOLES WERE USED TO ESTIMATE GROUNDWATER CONTOURS. SINCE THIS DATA WAS NOT AVAILABLE FOR MARCH 2013 AND IS NOT LABELLED ON THE PLOT.



NEW GOLD INC.
BLACKWATER GOLD PROJECT

**GROUNDWATER CONTOUR MAP
MARCH 2013**

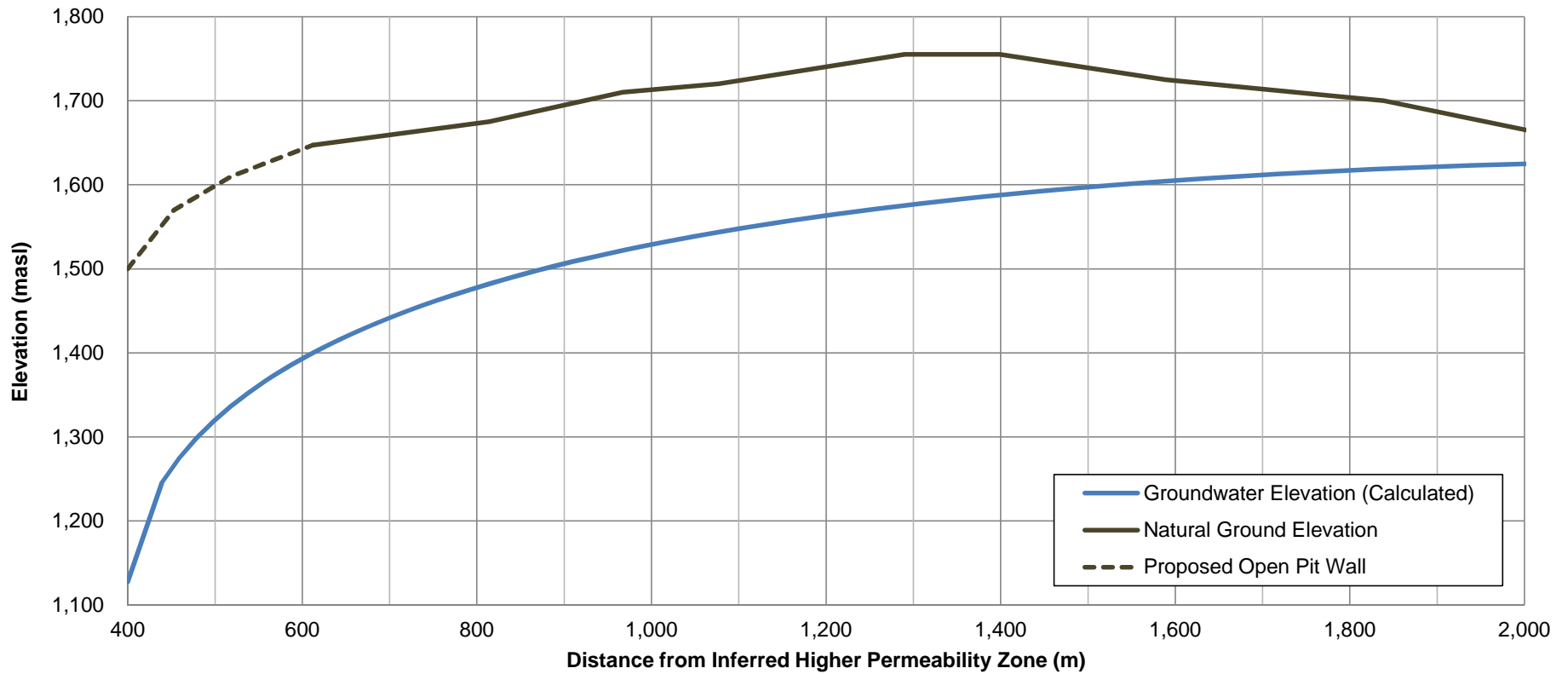
Knight Piésold
CONSULTING

PIA NO. VA101-457/6	REF. NO. 9
FIGURE C2.1	

0 29NOV'13 ISSUED WITH REPORT FTJ SB RS KJB
 REV DATE DESCRIPTION DESIGNED DRAWN CHK'D APP'D
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APPENDIX D
GROUNDWATER INFLOW AND DRAWDOWN ANALYSES
(Pages D-1 to D-5)

South Segment

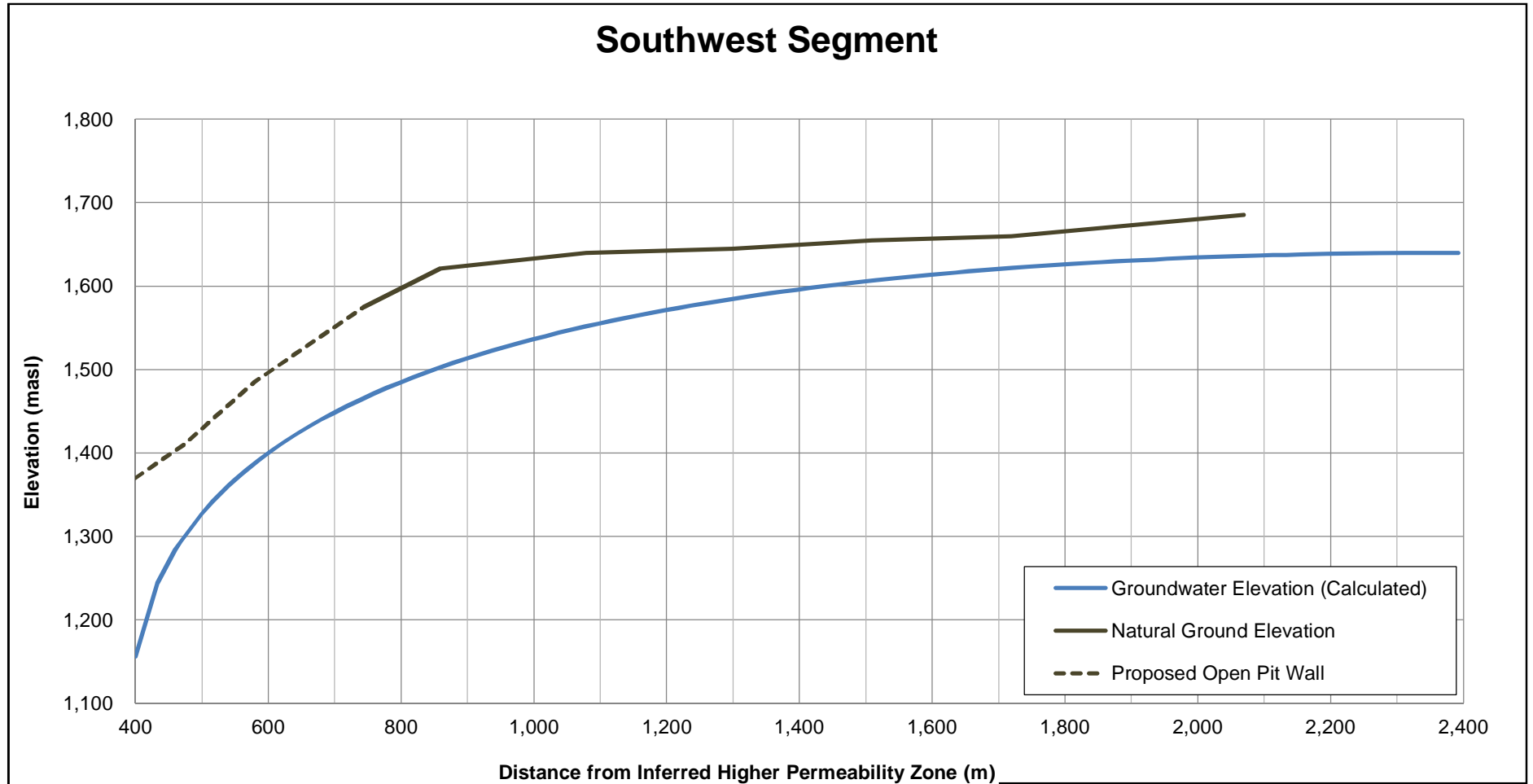


NOTES:

- GROUND ELEVATIONS FROM PROPOSED OPEN PIT DESIGN PROVIDED BY NORWEST CORPORATION, AUGUST 2013.
- GROUNDWATER ELEVATION REPRESENTS CALCULATED WATER TABLE DURING DEWATERING.

NEW GOLD INC.	
BLACKWATER GOLD PROJECT	
GROUNDWATER DRAWDOWN ANALYSIS SOUTH SEGMENT	
<i>Knight Piésold</i> CONSULTING	P/A NO. VA101-00457/6
REF. NO. 9	
FIGURE D.1	
REV 0	

0	26 SEPT'13	ISSUED WITH REPORT	FTJ	CAS	KJB
REV	DATE	DESCRIPTION	PREP'D	CHK'D	APP'D



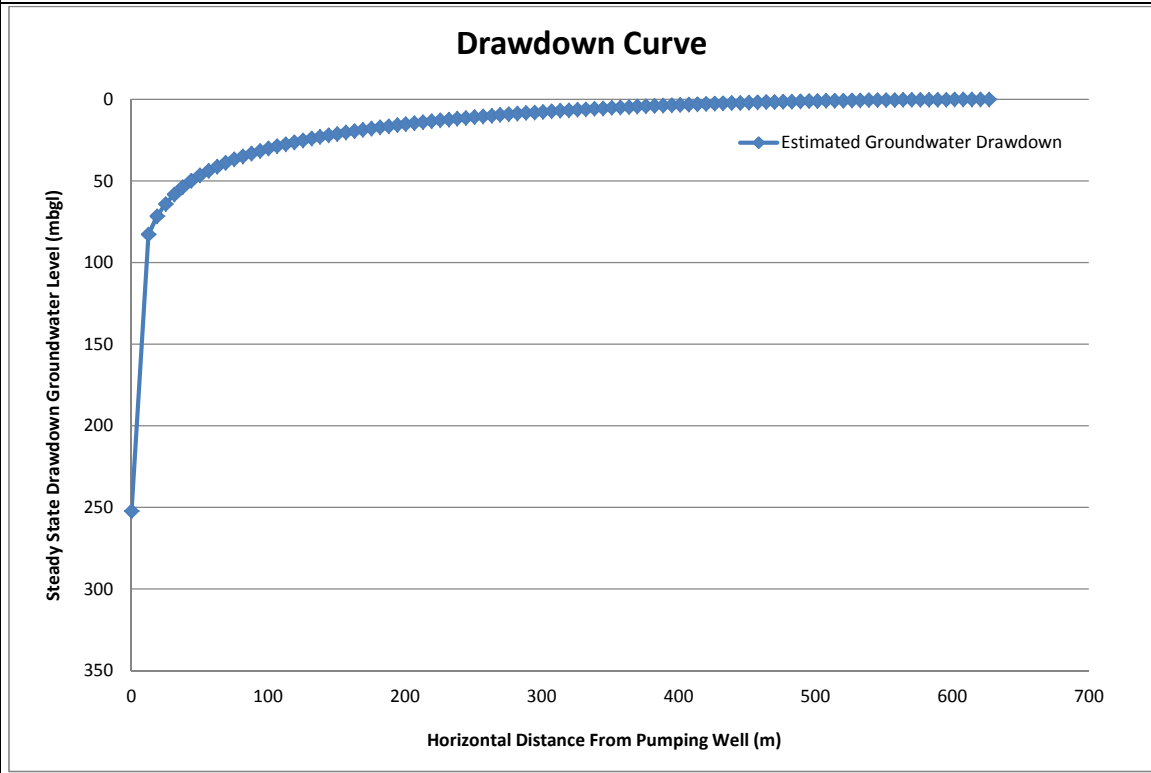
NOTES:

1. GROUND ELEVATIONS FROM PROPOSED OPEN PIT DESIGN PROVIDED BY NORWEST CORPORATION, AUGUST 2013.
2. GROUNDWATER ELEVATION REPRESENTS CALCULATED WATER TABLE DURING DEWATERING

NEW GOLD INC.	
BLACKWATER GOLD PROJECT	
GROUNDWATER DRAWDOWN ANALYSIS SOUTHWEST SEGMENT	
<i>Knight Piésold</i> CONSULTING	P/A NO. VA101-00457/6
REF. NO. 9	
FIGURE D.2	
REV 0	

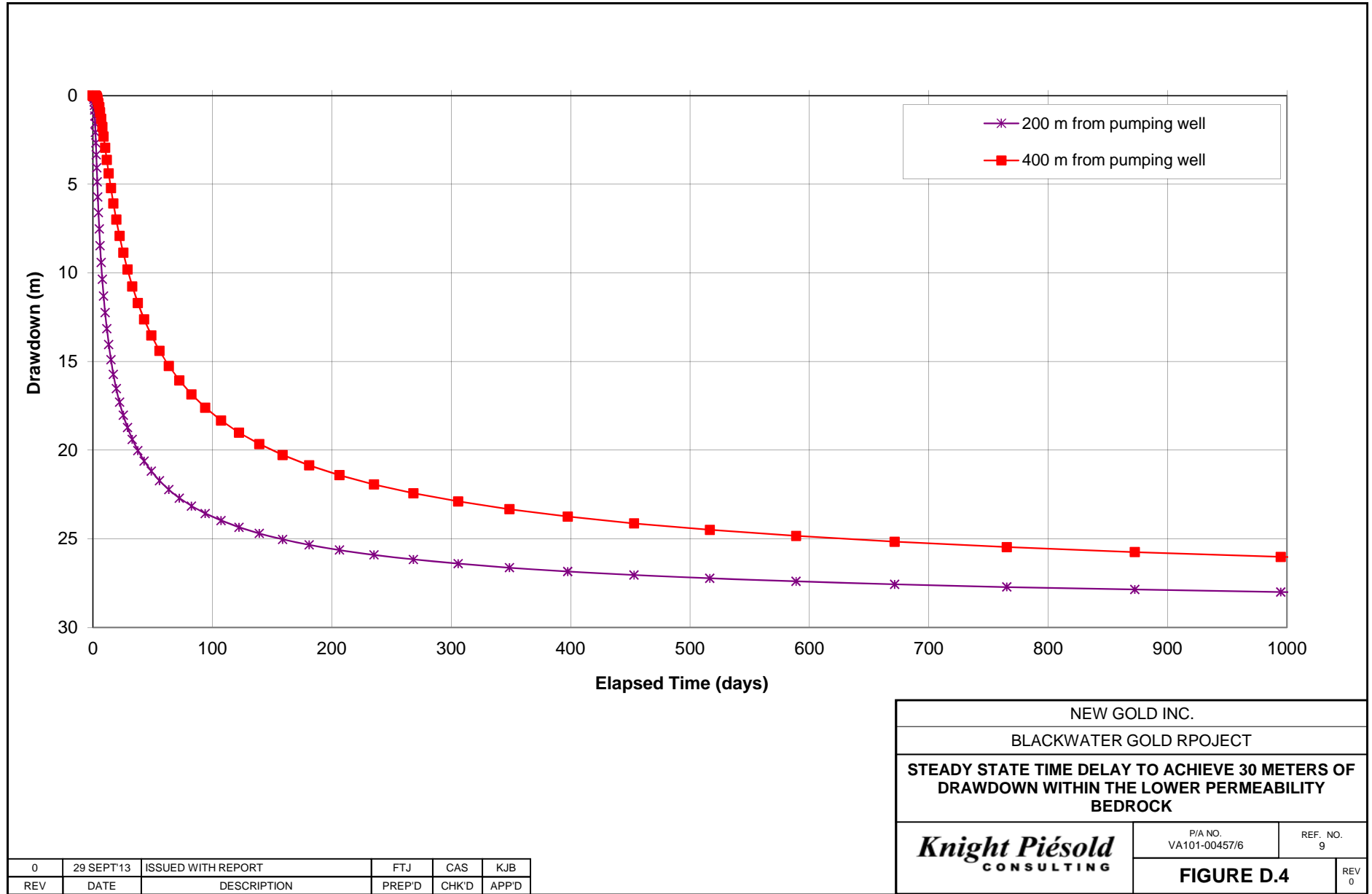
0	26 SEPT'13	ISSUED WITH REPORT	FTJ	CAS	KJB
REV	DATE	DESCRIPTION	PREP'D	CHKD	APPD

Well Spacing for Dewatering Design										
Spacing	400									
	Total	Midpoint	Midpoint	Midpoint	Midpoint	Midpoint	Midpoint	Midpoint	Midpoint	Midpoint
Distance		150	250	400	800	1200	1600	2000	2400	2800
Drawdown	36.7	22.0	11.2	3.4	0	0	0	0	0	0
Distance at well	259.2	252.3	3.4	0	0	0	0	0	0	0
Transmissivity =	1E-05	m/s				User inputs				
Hydraulic Conductivity =	1E-07	m2/s				Output				
Initial Thickness =	350	m								
Pumping Rate =	0.0047	m3/s								
Recharge =	3.81E-09	m/s				Reference: (Todd, 1959)				
Radius of Influence =	627	m								



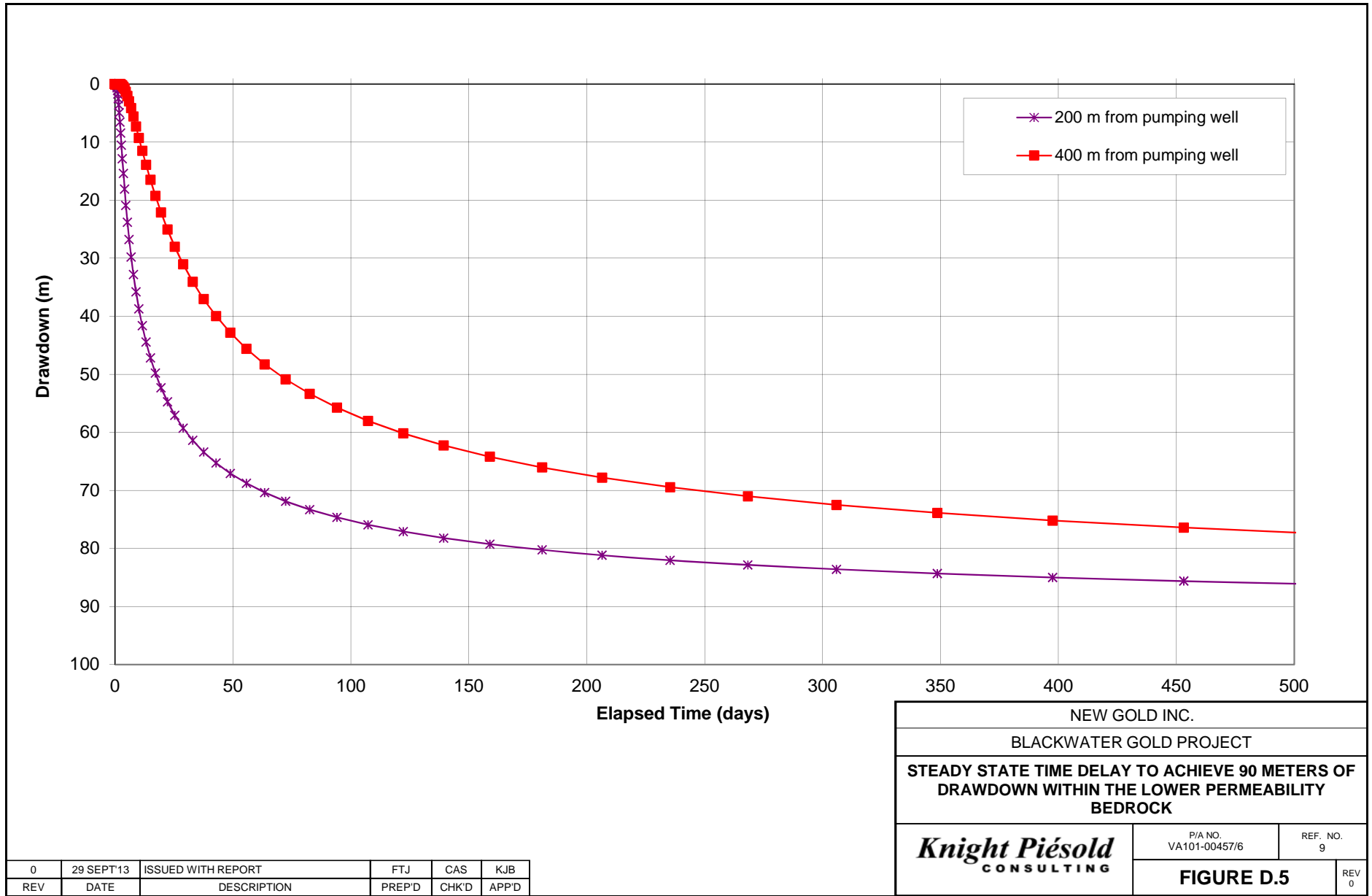
NEW GOLD INC.	
BLACKWATER GOLD PROJECT	
DEWATERING WELL SPACING CALCULATION LOWER PERMEABILITY BEDROCK	
<i>Knight Piésold</i> CONSULTING	P/A NO. VA101-00457/6
	REF. NO. 9
FIGURE D.3	

0	25SEPT'13	ISSUED WITH REPORT	FTJ	CAS	KLB
REV	DATE	DESCRIPTION	PREP'D	CHK'D	APP'D



NEW GOLD INC.	
BLACKWATER GOLD RPROJECT	
STEADY STATE TIME DELAY TO ACHIEVE 30 METERS OF DRAWDOWN WITHIN THE LOWER PERMEABILITY BEDROCK	
<i>Knight Piesold</i> CONSULTING	P/A NO. VA101-00457/6 REF. NO. 9 FIGURE D.4 REV 0

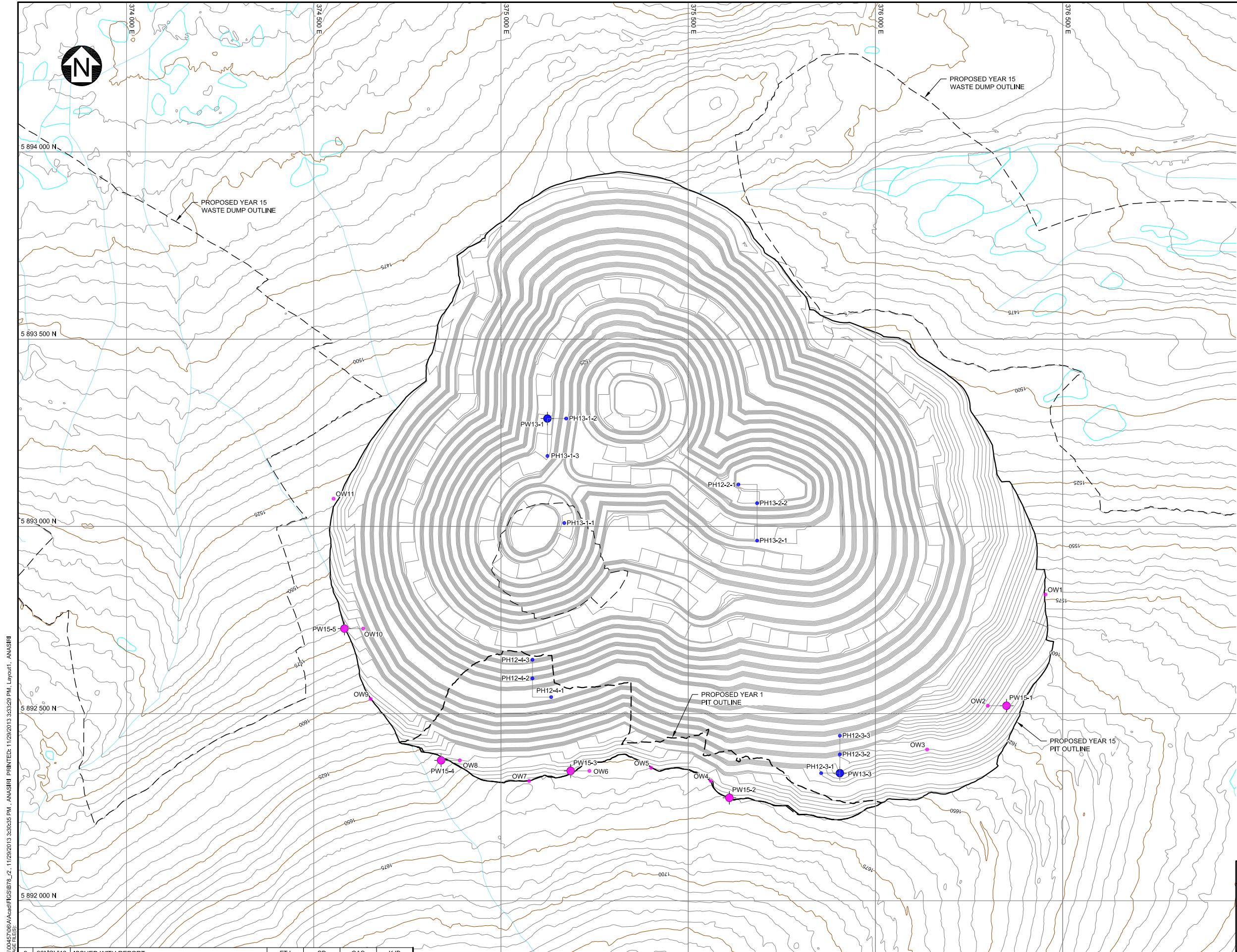
0	29 SEPT'13	ISSUED WITH REPORT	FTJ	CAS	KJB
REV	DATE	DESCRIPTION	PREP'D	CHK'D	APP'D



NEW GOLD INC.	
BLACKWATER GOLD PROJECT	
STEADY STATE TIME DELAY TO ACHIEVE 90 METERS OF DRAWDOWN WITHIN THE LOWER PERMEABILITY BEDROCK	
<i>Knight Piésold</i> CONSULTING	P/A NO. VA101-00457/6 REF. NO. 9 FIGURE D.5 REV 0

0	29 SEPT'13	ISSUED WITH REPORT	FTJ	CAS	KJB
REV	DATE	DESCRIPTION	PREP'D	CHK'D	APP'D

APPENDIX E
OPEN PIT DEWATERING PLAN
(Pages E-1 to E-3)



EXISTING DEWATERING INFRASTRUCTURE			
DESC.	EASTING (m)	NORTHING (m)	ELEV (m)
PH13-1-1	375,169	5,893,009	1,593
PH13-1-2	375,174	5,893,288	1,548
PH13-1-3	375,124	5,893,188	1,567
PH12-2-1	375,634	5,893,112	1,563
PH13-2-1	375,684	5,892,962	1,581
PH13-2-2	375,684	5,893,062	1,567
PH12-3-1	375,855	5,892,341	1,648
PH12-3-2	375,905	5,892,391	1,639
PH12-3-3	375,905	5,892,441	1,639
PH12-4-1	375,134	5,892,544	1,636
PH12-4-2	375,084	5,892,594	1,629
PH12-4-3	375,084	5,892,644	1,621
PW13-1	375,124	5,893,288	1,547
PW13-3	375,905	5,892,341	1,645

PROPOSED DEWATERING PROGRAM			
NAME	EASTING (m)	NORTHING (m)	ELEV (m)
OW1	376,454	5,892,818	1,572
OW2	376,300	5,892,521	1,616
OW3	376,138	5,892,404	1,632
OW4	375,560	5,892,320	1,663
OW5	375,401	5,892,355	1,655
OW6	375,236	5,892,347	1,653
OW7	375,075	5,892,320	1,664
OW8	374,890	5,892,375	1,642
OW9	374,652	5,892,539	1,600
OW10	374,632	5,892,727	1,573
OW11	374,553	5,893,074	1,529
PW15-1	376,350	5,892,521	1,616
PW15-2	375,610	5,892,320	1,666
PW15-3	375,186	5,892,347	1,655
PW15-4	374,840	5,892,375	1,635
PW15-5	374,582	5,892,727	1,570

LEGEND :

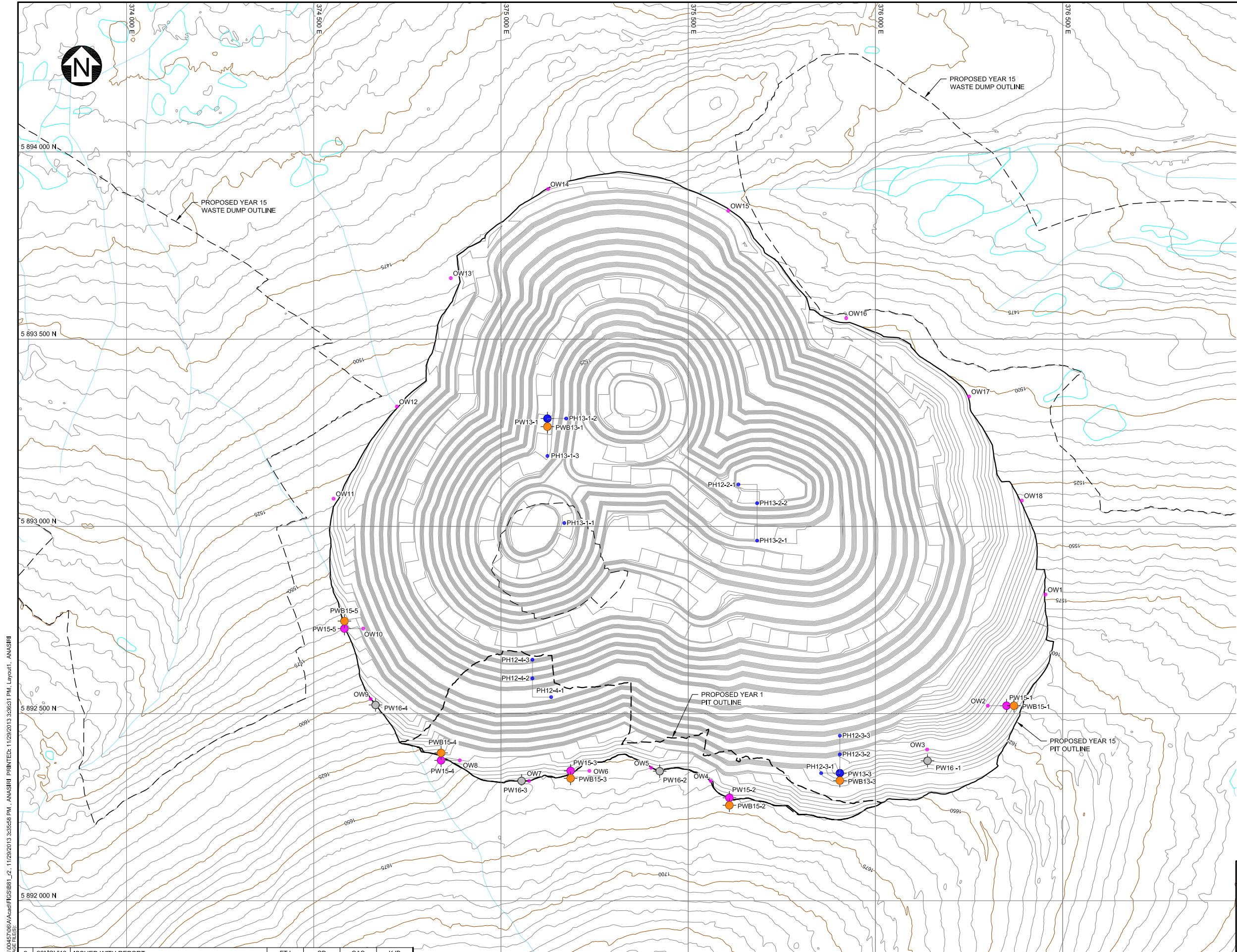
- PUMP WELLS WITH OBSERVATION WELLS @ 50 m & 100 m DISTANCE
- PUMP WELLS WITH OBSERVATION WELLS @ 50 m DISTANCE
- OBSERVATION WELL

- NOTES:**
- CONTOUR INTERVAL IS 5 METRES.
 - OPEN PIT DESIGN PROVIDED BY NORWEST CORPORATION (AUG. 2013).
 - A SECONDARY BACKUP PUMPING WELL IS RECOMMENDED AT EACH PUMPING WELL LOCATION. BACKUP PUMPING WELLS SHOULD BE INSTALLED ONE YEAR AFTER THE ORIGINAL PUMPING WELL IS INSTALLED.
- SCALE A

SAV: D:\MS10100457\06\AA\cad\FIGS\B76_L_2_11292013_330355 PM_ANASIRI_PRINTED: 11/29/2013 3:33:29 PM_Layout1 - ANASIRI
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REV	DATE	DESCRIPTION	DESIGNED	DRAWN	CHK'D	APP'D
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1	28OCT'13	ISSUED WITH REPORT	FTJ	SB	CAS	KJB
0	19SEP'13	ISSUED WITH REPORT	FTJ	NSD	BB	KJB

NEW GOLD INC.	
BLACKWATER GOLD PROJECT	
OPEN PIT DEWATERING PLAN YEAR - 2	
<i>Knight Piésold</i> CONSULTING	PIA NO. VA101-457/6 REF NO. 9 FIGURE E.1
	REV 2



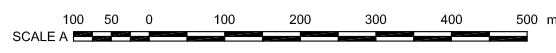
EXISTING DEWATERING INFRASTRUCTURE			
DESC.	EASTING (m)	NORTHING (m)	ELEV (m)
PH13-1-1	375,169	5,893,009	1,593
PH13-1-2	375,174	5,893,288	1,548
PH13-1-3	375,124	5,893,188	1,567
PH12-2-1	375,634	5,893,112	1,563
PH13-2-1	375,684	5,892,962	1,581
PH13-2-2	375,684	5,893,062	1,567
PH12-3-1	375,855	5,892,341	1,648
PH12-3-2	375,905	5,892,391	1,639
PH12-3-3	375,905	5,892,441	1,639
PH12-4-1	375,134	5,892,544	1,636
PH12-4-2	375,084	5,892,594	1,629
PH12-4-3	375,084	5,892,644	1,621
PW13-1	375,124	5,893,288	1,547
PW13-3	375,905	5,892,341	1,645

PROPOSED DEWATERING PROGRAM			
NAME	EASTING (m)	NORTHING (m)	ELEV (m)
OW1	376,454	5,892,818	1,572
OW2	376,300	5,892,521	1,616
OW3	376,138	5,892,404	1,632
OW4	375,560	5,892,320	1,663
OW5	375,401	5,892,355	1,655
OW6	375,236	5,892,347	1,653
OW7	375,075	5,892,320	1,664
OW8	374,890	5,892,375	1,642
OW9	374,652	5,892,539	1,600
OW10	374,632	5,892,727	1,573
OW11	374,553	5,893,074	1,529
OW12	374,722	5,893,320	1,514
OW13	374,866	5,893,663	1,483
OW14	375,126	5,893,901	1,482
OW15	375,607	5,893,843	1,478
OW16	375,922	5,893,556	1,496
OW17	376,250	5,893,347	1,503
OW18	376,391	5,893,069	1,532
PW15-1	376,350	5,892,521	1,616
PW15-2	375,610	5,892,320	1,666
PW15-3	375,186	5,892,347	1,655
PW15-4	374,840	5,892,375	1,635
PW15-5	374,582	5,892,727	1,570
PWB15-1	376,370	5,892,521	1,615
PWB15-2	375,610	5,892,300	1,668
PWB15-3	375,186	5,892,327	1,657
PWB13-3	375,905	5,892,321	1,648
PWB15-4	374,840	5,892,395	1,632
PWB15-5	374,582	5,892,747	1,568
PWB13-1	375,124	5,893,288	1,547

LEGEND :

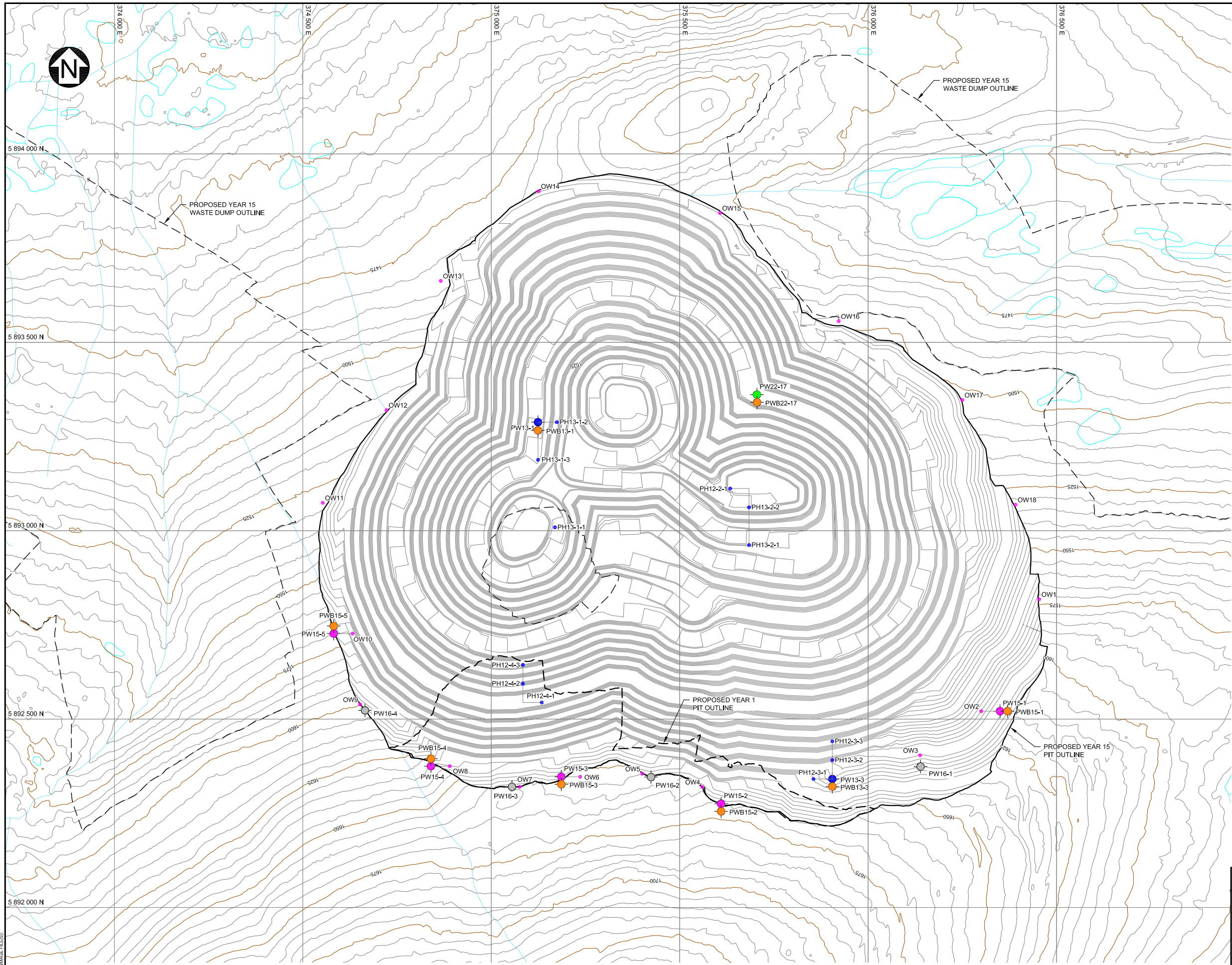
- PUMP WELLS WITH OBSERVATION WELLS @ 50 m & 100 m DISTANCE
- PUMP WELLS WITH OBSERVATION WELLS @ 50 m DISTANCE
- BACKUP PUMP WELLS
- PROPOSED PUMP WELLS
- OBSERVATION WELL

- NOTES:**
- CONTOUR INTERVAL IS 5 METRES.
 - OPEN PIT DESIGN PROVIDED BY NORWEST CORPORATION (AUG. 2013).
 - A SECONDARY BACKUP PUMPING WELL IS RECOMMENDED AT EACH PUMPING WELL LOCATION. BACKUP PUMPING WELLS SHOULD BE INSTALLED ONE YEAR AFTER THE ORIGINAL PUMPING WELL IS INSTALLED.



NEW GOLD INC.	
BLACKWATER GOLD PROJECT	
OPEN PIT DEWATERING PLAN YEAR 2	
Knight Piésold CONSULTING	PIA NO. VA101-457/6
REF. NO. 9	REV 2
FIGURE E.2	

29NOV13 ISSUED WITH REPORT FTJ SB CAS KJB
 28OCT13 ISSUED WITH REPORT FTJ SB CAS KJB
 19SEP13 ISSUED WITH REPORT FJ NSD BB KJB
 APP'D



EXISTING DEWATERING INFRASTRUCTURE

DESC.	EASTING (m)	NORTHING (m)	ELEV (m)
PH13-1-1	375,169	5,893,009	1,593
PH13-1-2	375,174	5,893,288	1,548
PH13-1-3	375,124	5,893,188	1,567
PH12-2-1	375,634	5,893,112	1,563
PH13-2-1	375,684	5,892,962	1,581
PH13-2-2	375,684	5,893,062	1,567
PH12-3-1	375,855	5,892,341	1,648
PH12-3-2	375,905	5,892,391	1,639
PH12-3-3	375,905	5,892,441	1,639
PH12-4-1	375,134	5,892,544	1,636
PH12-4-2	375,084	5,892,594	1,629
PH12-4-3	375,084	5,892,644	1,621
PW13-1	375,124	5,893,288	1,547
PW13-3	375,905	5,892,341	1,645

DEWATERING PROGRAM

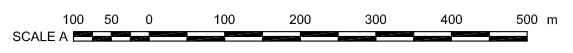
NAME	EASTING (m)	NORTHING (m)	ELEV (m)
OW1	376,454	5,892,818	1,572
OW2	376,300	5,892,521	1,616
OW3	376,138	5,892,404	1,632
OW4	375,560	5,892,320	1,663
OW5	375,401	5,892,355	1,655
OW6	375,236	5,892,347	1,653
OW7	375,075	5,892,320	1,664
OW8	374,890	5,892,375	1,642
OW9	374,652	5,892,539	1,600
OW10	374,632	5,892,727	1,573
OW11	374,553	5,893,074	1,529
OW12	374,722	5,893,320	1,514
OW13	374,866	5,893,663	1,483
OW14	375,126	5,893,901	1,482
OW15	375,607	5,893,843	1,478
OW16	375,922	5,893,556	1,496
OW17	376,250	5,893,347	1,503
OW18	376,391	5,893,069	1,532
PW15-1	376,350	5,892,521	1,616
PW15-2	375,610	5,892,320	1,666
PW15-3	375,186	5,892,347	1,655
PW15-4	374,840	5,892,375	1,635
PW15-5	374,582	5,892,727	1,570
PWB15-1	376,370	5,892,521	1,615
PWB15-2	375,610	5,892,300	1,668
PWB15-3	375,186	5,892,327	1,657
PWB13-3	375,905	5,892,321	1,648
PWB15-4	374,840	5,892,395	1,632
PWB15-5	374,582	5,892,747	1,568
PWB13-1	375,124	5,893,288	1,547
PW22-17	375,705	5,893,361	1,530
PWB22-17	375,705	5,893,361	1,530

LEGEND :

- PUMP WELLS WITH OBSERVATION WELLS @ 50 m & 100 m DISTANCE
- PUMP WELLS WITH OBSERVATION WELLS @ 50 m DISTANCE
- BACKUP PUMP WELLS
- PROPOSED PUMP WELLS
- PUMP WELLS WITH OBSERVATION WELLS @ 50 m DISTANCE
- OBSERVATION WELL

NOTES:

1. CONTOUR INTERVAL IS 5 METRES.
2. OPEN PIT DESIGN PROVIDED BY NORWEST CORPORATION (AUG. 2013).
3. A SECONDARY BACKUP PUMPING WELL IS RECOMMENDED AT EACH PUMPING WELL LOCATION. BACKUP PUMPING WELLS SHOULD BE INSTALLED ONE YEAR AFTER THE ORIGINAL PUMPING WELL IS INSTALLED.



NEW GOLD INC.	
BLACKWATER GOLD PROJECT	
OPEN PIT DEWATERING PLAN YEAR 6	
	<small>P/A NO.</small> VA101-457/6 <small>REF. NO.</small> 9 FIGURE E.3

SAVEN: M:\1010457\06\AA\cad\FIGS\B04_0_11292013_33807.PM_ANASIRI_PRINTED: 11/29/2013 3:38:42 PM_Layout1_ANASIRI
 XREF FILE(S): IMAGE FILE(S):

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