"A conceptual design of a bank infiltration (MAR pilot) along the Para River at Hanover, Suriname"

Annexes

Approved. OK for payment

Paramaribo 12 November 2025

Annex 1: Historical water quality samples taken from abstraction wells at the Republiek

Source ID	X coord	Y coord	Sample Date	Temp (°C)	pH (–)	Turbidity (NTU)	Conductivity (µS/cm)	Ca (mg/L)	Mg (mg/L)	Total Hardness (mg/L as $CaCO_3$)	Fe total (mg/L)	Cl^- (mg/L)	HCO_3^- (mg/L)	CO_2 (mg/L)	Total coliform (/100 mL)	Thermo-tolerant (/100 mL)	F-coliform (/100 mL)
R2	697 926	608 154	30-Aug-2000	27.7	5.23	2.0	0.07	0.00	2.45	10.13	3.16	11.17	20.67	68.0	0		
R2	″	″	21-Feb-2001	27.5	5.26	2.0	0.08	0.38	2.19	10.12	3.82	12.36	17.0	75.0	1		
R2	″	″	28-Jun-2001	27.6	5.35	2.0	0.08	0.00	1.89	7.88	3.97	12.45	19.66	83.0	0		
R2	″	″	11-Sep-2001	27.9	5.32	2.0	0.08				3.77	11.96	21.78	81.0			
R2	″	″	08-Jan-2002	26.8	5.25	2.0	0.08	0.00	1.34	5.56	5.47	12.86	24.78	91.0	0	absent	0
R30	698 845	607 795	28-Jun-2001	26.8	5.31	1.0	0.07	0.20	3.27	13.94	0.64	10.89	20.57	49.0	0		
R30	″	″	11-Sep-2001	27.0	5.10	0.0	0.07	1.61	0.66	6.69	0.69	13.30	21.78	70.0			
R30	″	″	08-Jan-2002	25.6	5.23	0.0	0.07	1.63	0.74	7.14	0.90	11.81	26.24	84.0	76	present	16
R38	699 048	607 731	11-Sep-2001	27.2	5.00	0.0	0.04	1.01	0.88	6.12	1.52	7.38	12.45	39.0			

Source ID	X coord	Y coord	Sample Date	Temp (°C)	pH (–)	Turbidity (NTU)	Conductivity (µS/cm)	Ca (mg/L)	Mg (mg/L)	Total Hardness (mg/L as $CaCO_3$)	Fe total (mg/L)	Cl^- (mg/L)	HCO_3^- (mg/L)	CO_2 (mg/L)	Total coliform (/100 mL)	Thermo-tolerant (/100 mL)	F-coliform (/100 mL)
R38	″	″	08-Jan-2002	25.6	5.10	0.0	0.04	1.23	0.00	3.06	0.86	7.37	16.04	45.0	1	absent	0
R6	697 862	607 977	21-Feb-2001	28.5	5.13	1.0	0.05	0.38	1.40	6.71	1.45	6.99	14.00	68.0	1		
R6	″	″	28-Jun-2001	26.9	5.15	1.0	0.05	0.40	1.99	9.26	1.74	8.01	16.64	62.0	0		
R6	″	″	11-Sep-2001		4.92	2.0	0.06	1.61	0.66	6.69	1.69	8.39	17.11	66.0			
R6	″	″	08-Jan-2002	27.1	5.06	1.0	0.05	1.63	0.25	5.10	2.54	8.26	18.95	76.0	0	absent	0
R8	697 813	608 146	30-Aug-2000	27.0	4.90	0.0	0.04	0.00	0.69	2.85	0.27	7.41	12.62	73.0	0		0
R8	″	″	28-Jun-2001	27.4	5.14	1.0	0.05	0.20	1.77	7.76	0.68	8.32	10.59	67.0	0		
R8	″	″	21-Feb-2001	27.5	4.81	2.0	0.05	0.38	1.05	5.27	0.57	8.04	10.00	74.0	0		
R8	″	″	11-Sep-2001	28.1	4.80	0.0	0.05	0.60	1.00	5.59	0.54	8.46	12.45	74.0			
R8	″	″	08-Jan-2002	26.4	4.90	0.0	0.05	0.41	0.99	5.10	0.88	8.21	16.04	72.0	1	absent	0

Annex 2: Historical water quality samples taken from well H3/90 in 1990

Table: A4.2.3: GEOHYDROLOGICAL DATA BASE - DAWACO: HANOVER
Chemical analyses by sample

Location : HANOVER S. = Screen Ref. pnt.in m. a.m.s.l.
Periode : 01/01/1980 - 31/12/1990 Depth in meters - ref. pnt.

Well	S.	Ref.pnt	Depth	Date	Parameter	Value	Unit
1-2\90	2	15.65	14.25	25/09/1990	Cl	6.40	mg/l
				25/09/1990	HCO3	131.	mg/l
				25/09/1990	SO4	80.7	mg/l
				25/09/1990	pH	5.57	
				25/09/1990	Na	38.0	mg/l
				25/09/1990	K	0.500	mg/l
				25/09/1990	Ca	3.60	mg/l
				25/09/1990	Mg	0.240	mg/l
				25/09/1990	NH4	0.220	mg/l
				25/09/1990	Mn	0.500	mg/l
				25/09/1990	Fe	4.60	mg/l
				25/09/1990	T	23.8	oC
				25/09/1990	EC	133.	uS/cm
				25/09/1990	CO2	89.0	mg/l
				25/09/1990	PO4	10.8	mg/l
				25/09/1990	O2	0.700	mg/l
				25/09/1990	COD	71.1	mg/l
3\90	1	2.81	8.75	20/09/1990	Cl	34.0	mg/l
				20/09/1990	HCO3	101.	mg/l
				20/09/1990	SO4	67.9	mg/l
				20/09/1990	pH	6.40	
				20/09/1990	Na	47.0	mg/l
				20/09/1990	K	3.50	mg/l
				20/09/1990	Ca	8.00	mg/l
				20/09/1990	Mg	2.64	mg/l
				20/09/1990	Mn	0.500	mg/l
				20/09/1990	Fe	5.35	mg/l
				20/09/1990	T	24.9	oC
				20/09/1990	EC	272.	uS/cm
				20/09/1990	PO4	0.160	mg/l
				20/09/1990	SiO2	28.7	mg/l

Annex 3 Analysis Certificate Water Quality Results

ENVIRONMENTAL LABORATORY

Form nr.: FMTe4204B Reference: PMTe4101 Issue date: December 19, 2024 Rev. nr.: 3

Analysis Certificate

Paramaribo, 11/3/2025

Request no.:	22	***Date samples received by lab:***	25- Sept- 2025
Requester:	ILACO N.V.	***Number of samples:***	4
Sampled by:	Requester	***Parameters to be analyzed:***	See below
Certificate prepared by:	Burgzorg S.	***Analysis performed by:***	• Raghoenath P. • Extern

Results:

Parameter	Sample code		WHO Drinking water Standard
	WQ1	WQ2	
Temp. (°C)	25.6	26.5	n.v.t.
pH	**5.9**	6.6	6.5- 8.5
Smell ($S2^-$)	< 0.1	< 0.1	n.v.t.
Color (PCU)	< 250	< 250	n.v.t.
Dissolved Oxygen (mg/L)	2.8	3.1	n.v.t.
Conductivity (µs/cm)	168.0	47.0	n.v.t.
Turbidity (NTU)	**115.00**	9.09	< 4 NTU
TDS (mg/L)	124.00	78.50	≤ 600 mg/L
TSS (mg/L)	114.00	1.00	n.v.t.
Natrium (mg/L)	4.524	1.944	n.v.t.
Kalium (mg/L)	2.497	0.234	n.v.t.
Calcium (mg/L)	11.587	0.299	n.v.t.
Arsenic (µg/L)	2.078	0.887	10 µg/L
Chloride (mg/L)	9.26	4.14	250 mg/L
Fluoride (mg/L)	0.16	< 0.05	n.v.t.
Bromide (mg/L)	-	-	n.v.t.
Ammonium (mg/L)	**0.72**	0.18	0.5 mg/L
Nitrate (mg/L)	< 0.01	0.01	50 mg/L
Nitrite (mg/L)	< 0.01	< 0.01	3 mg/L
Fosfaat (mg/L)	< 0.01	< 0.01	n.v.t.

- It is strictly forbidden to copy the "analysis report" in part. It should only be used in its entirety.
- We cannot be held responsible for inaccuracies in analysis performed on samples not acquired by our lab personnel.
- Analysis results are based on the presented sample(s) only. In order to acquire a representative result, proper random sampling techniques should be performed.
- Our laboratory remains objective regardless of the outcome of analysis performed on any products of a given brand name or analysis of any type of product, regardless of its origin.
- The AdeKUS or any of its partners cannot be held responsible if any damage to third party persons, property or goods is to occur before, during or after sampling and/or analysis.
- Any complaints or feedback can be addressed directly to the head of our laboratory or by requesting a complaints-form via email at: administratie-milieulab@uvs.edu
- If so required, analysis could be repeated upon special request to the head of the laboratory and for a predetermined analysis fee; provided that sample quality and integrity permits.

Print date: November 4, 2025 Management System Certified ISO9001:2015 Page 1 of 2

ENVIRONMENTAL LABORATORY

Form nr.: FMTe4204B Reference: PMTe4101 Issue date: December 19, 2024 Rev. nr.: 3

Parameter	Sample code		WHO Drinking water Standard
	WQ1	WQ2	
Hardness (ppm)	54.99	40.09	0-60 ppm → soft 61-120 ppm → moderately hard 121-180 ppm → hard ≥180 ppm→ very hard
Sulphate (mg/L)	5.21	0.56	250 mg/L
Aluminium (µg/L)	**492.030**	**429.866**	500 µg/L
Iron (µg/L)	3656.238	760.363	300 µg/L
Mangaan (µg/L)	61.031	7.691	80 µg/L
Magnesium (mg/L)	1.507	0.394	n.v.t.
Mercury (µg/L)	1.4140	2.1669	6.0 µg/L
Lood (µg/L)	**9.077**	0.161	10 µg/L
Zink (µg/L)	140.451	9.698	3.0 mg/L
Koper (µg/L)	47.597	3.326	2.0 mg/L
Cyanide^{TOT} (mg/L)	< 0.01	< 0.01	0.5 mg/L
E. coli (KVE/mL)	0	0	0 per 100 mL

Note:
PCU, shade of yellow: 0= helder; 500= geel (reference APHA\ Pt- Co Color scale)
WQ1: bron water (Hanover) WQ2: rivier water (Para)

Approved by:

Milieuwetenschappen FTeW - Milieulab

Prof. M Huisden
Head of the Environmental laboratory
Environmental Sciences Department at the Faculty of Technology
Anton de Kom University of Suriname
Telephone: 465558 ext 2297/2308

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Annex 4: Overview of test wells and VES measurements in Hanover area

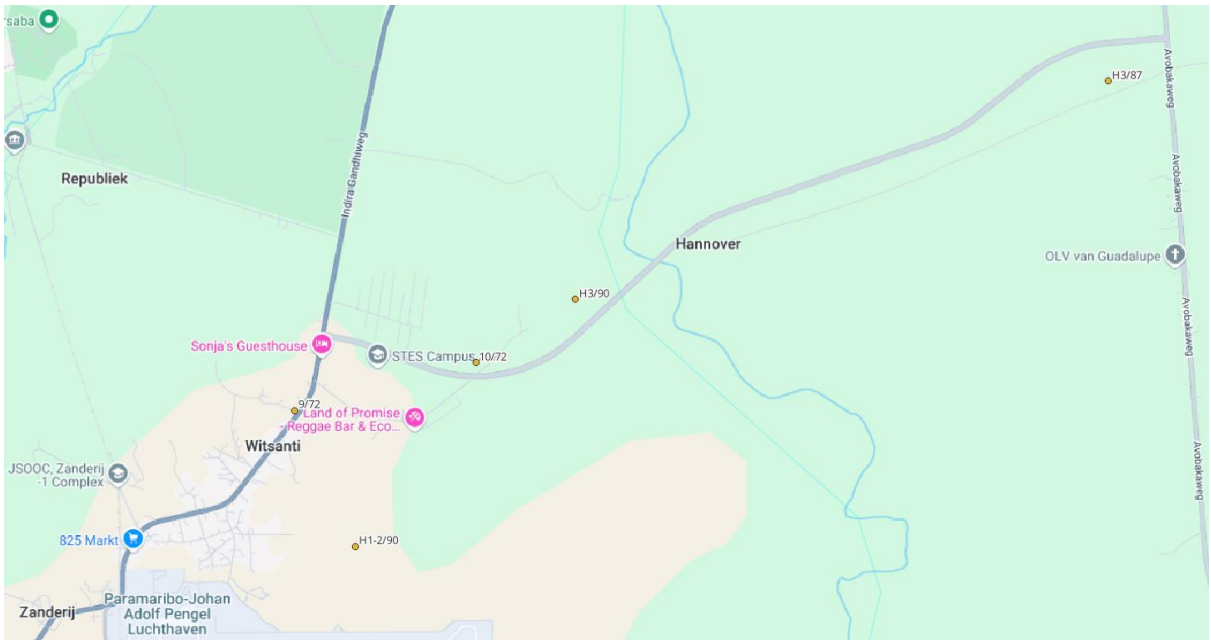


Figure 1. Map showing the locations of test wells drilled in Hanover area.

Borehole '**H3/87**' (Lat 5.503919 / Lon -55.114835) is located approximately 4.5 km east-northeast of Hanover, near the Avobakaweg, was used for an ERT validation measurement to correlate the resistivities with known lithology.

Annex 3 of the Final Feasibility Report of the *Feasibility study and preliminary designs for the improvement and expansion of the potable water supply system for Paramaribo and its metropolitan area* (PRC, 1986) contains the well log of this borehole (presented on the next page), which can be summarized as 0-9m Clay, 10-17m Sand, 17-29.5m Sand & Clay, >29.5m Bedrock.

For the BH's located closer to Hanover (e.g. 'H3/90') no well logs are available, but the following information could be found in IWACO (1991) and UNDP (1971) reports:

- **9/72** = 15.7m bgl drilled depth, 10-14m bgl screened (3 inch PVC) in Zanderij aquifer, elevation = 5.696 m+NSP, SWL = 0.62m bgl = 5.076 m+NSP. Basement op -10m NSP (=16mbgl)
- **10/72** = 21m bgl drilled depth, 12-15m bgl screened (3 inch PVC) in Zanderij aquifer, elevation = 8.726 m+NSP, SWL = 5.3m bgl = 3.436 m+NSP. Basement op -12m NSP (=20mbgl)
- **H1-90** = 16.24m+NSP, 22.0-23.5 m bgl screened, SWL unknown
- **H2-90** = 15.65m+NSP, 12.0-13.5 m bgl screened, SWL unknown, 6.4 mg/l Cl and 4.6 mg/l Fe
- **H3-90** = 2.81m+NSP, 6.5-8.0 mbgl screened (75mm), SWL unknown, 34 mg/l Cl and 5.35 mg/l Fe

WELL LOG

LEGGETTE, BRASHEARS & GRAHAM, INC.
CONSULTING GROUND-WATER GEOLOGISTS
72 DANBURY ROAD
WILTON, CT. 06897

OWNER N. V. Surinaamsche Waterleiding Maatschappij
WELL NO. H3/87
DATE 07/03/87 PAGE 1 OF 3 PAGES

LOCATION Hanover Study Area
DATE COMPLETED 09 August 1987
DRILLING COMPANY DWV
DRILLING METHOD Mud rotary
SAMPLING METHOD Grab
SAMPLES EXAMINED BY D. E. Simmons
REFERENCE POINT Land surface
ELEVATION OF R.P. 3.07 NSP
WELL CONSTRUCTION
SCREEN TYPE Machine cut
DIAM. 2-inch SLOT NO. 40
SETTING 12.0 to 13.5 meters
GRAVEL PACK SIZE
CASING 3-inch PVC
DEVELOPMENT Air-lift development
PUMPING TEST
DATE
DURATION
STATIC WATER LEVEL
PUMPING WATER LEVEL
YIELD
REMARKS

DEPTH IN METERS FROM	TO	DESCRIPTION
0	9	CLAY, plastic, red and gray, little sand, fine to coarse, subangular.
		1 meter - CLAY, plastic, red and gray.
		2 meters - CLAY, plastic, red and gray, trace yellow, trace sand, fine.
		3 meters - CLAY, plastic, gray, trace of red, yellow, trace sand, fine.
		4 meters - CLAY, plastic, dark gray, trace red, yellow, trace sand, fine.
		5 meters - CLAY, plastic, dark gray, trace yellow, trace sand, fine.
		6 meters - CLAY, plastic, dark gray, trace yellow, trace sand, fine.
		7 meters - CLAY, plastic, dark gray, trace yellow, trace sand, fine.
		8 meters - CLAY, plastic, gray, some sand, fine to coarse, subangular.
		9 meters - CLAY, plastic, gray, some sand, fine and medium, trace coarse, subangular.
10	17	SAND, medium and coarse, subangular, brown and gray, some gravel, fine, angular, little clay, gray.
		10 meters - Sand, coarse, some medium, trace fine, subangular, gray, and Gravel, fine, angular.

OWNER N. V. Surinaamsche Waterleiding Maatschappij

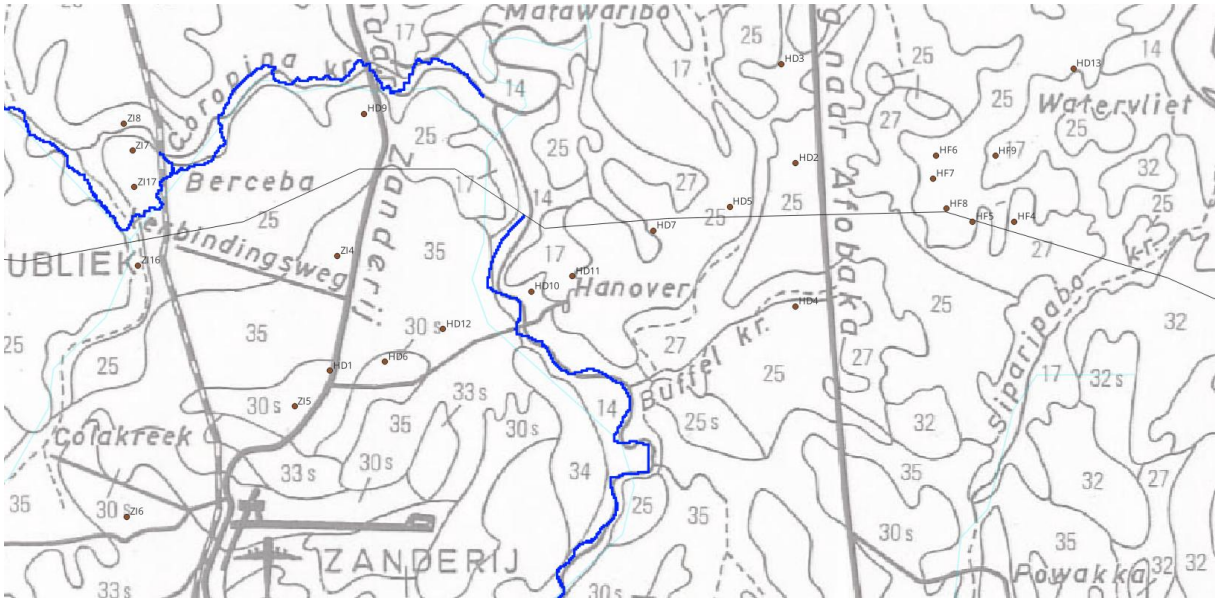
WELL NO. H3/87 **PAGE** 2 **OF** 3 **PAGES**

DEPTH IN METERS FROM	TO	DESCRIPTION
		11 meters - Gravel, fine, angular, and Sand, fine to coarse, subangular, gray, trace mica.
		12 meters - Gravel, fine, angular, and Sand, fine to coarse, subangular, gray, trace mica.
		13 meters - Gravel, fine, angular, and Sand, fine to coarse, subangular, gray, trace mica.
		14 meters - SAND, medium, some coarse, subangular, brownish-gray, some gravel, fine, angular, trace clay.
		15 meters - SAND, coarse, some medium, subangular, brownish-gray, some gravel, fine, angular, little clay, gray.
		16 meters - SAND, coarse and medium, subangular, brownish-gray, some gravel, fine, angular, little clay, red and gray.
		17 meters - SAND, medium, some coarse, subangular, brownish-gray, some gravel, fine, angular, little clay, brown.
18	29.75	Sand, coarse to fine, subangular, gray, and Clay, gray, little gravel, fine, subangular.
		18 meters - SAND, coarse, some medium, subangular, brownish-gray, some gravel, fine, angular, some clay, gray.
		19 meters - Sand, coarse, some medium, subangular, brownish-gray, and Clay, gray, little gravel, fine, angular.
		20 meters - Sand, medium and coarse, subangular, brownish-gray, and Clay, gray, trace gravel, fine, angular.
		21 meters - Sand, medium and coarse, subangular, brownish-gray, and Clay, gray, trace gravel, fine, angular.

OWNER N. V. Surinaamsche Waterleiding Maatschappij

WELL NO. H3/87 **PAGE 3 OF 3 PAGES**

DEPTH IN METERS FROM	TO	DESCRIPTION
		22 meters - Sand, medium and coarse, subangular, brownish-gray, and Clay, gray, trace gravel, fine, angular.
		23 meters - Sand, medium and coarse, subangular, brownish-gray, and Clay, gray, trace gravel, fine, angular.
		24 meters - Sand, coarse, some medium, fine, subangular, gray, and Clay, gray, some gravel, fine, angular.
		25 meters - No sample.
		26 meters - Sand, fine and medium, some coarse, subangular, gray and Clay, gray, some gravel, fine, subangular.
		27 meters - Clay, gray, trace red, and Sand, fine and medium, some coarse, subangular, gray, some gravel, fine, subangular.
		28 meters - Sand, fine and medium, some coarse, subangular, gray, and Clay, gray, trace red, some gravel, fine subangular.
		29 meters - CLAY, brownish gray, some sand, medium ahd coarse.
		29.75 meters - SAND, medium, subangular, gray, little mica.
	29.75	End of boring - BEDROCK.



HD10

Van (mbgl)	Tot (mbgl)	Interpretatie	Formatie	Weerstand (Ohm.m)
0	1.4	Soil #14	Coropina	200-230
1.4	9.5	Sand	Zanderij	350
9.5	50	Regolith (clayey)	Basement (weathered)	45
>50		Fresh rock (granite)	Basement	300

Soil #14 = **River and estuary flat soils** - imperfectly to very poorly drained ripe to half-ripe (peaty) clay with brown, yellow and/or red mottles, locally silty clay and silt loam

HD11 (NB bad data points)

Van (mbgl)	Tot (mbgl)	Interpretatie	Formatie	Weerstand (Ohm.m)
0	2.3	Soil #14	Mara clay	150-270
2.3	9.5	Sand	Zanderij	390
9.5	45	Regolith (clayey)	Basement (weathered)	35
>45		Fresh rock (granite)	Basement	500

Soil #14 = Mara landscape – swamp and marsh soils - very poorly drained half-ripe practically unripe and unripe, mostly pyritic clay and peat

HD11B (NB bad data points) (improved inversion)

Van (mbgl)	Tot (mbgl)	Interpretatie	Formatie	Weerstand (Ohm.m)
0	2.3	Soil #14	Mara clay	150-270
2.3	9.5	Sand	Zanderij	390
9.5	20	Regolith (clayey)	Basement (weathered)	10
>20		Fresh rock (granite)	Basement	3000

Soil #14 = Mara landscape – swamp and marsh soils - very poorly drained half-ripe practically unripe and unripe, mostly pyritic clay and peat

HD7

Van (mbgl)	Tot (mbgl)	Interpretatie	Formatie	Weerstand (Ohm.m)
0	4	Soil #25	Para silt / silt loam	350-750
4	8	Soil #25	Para stiff (silty) clay	50
8	27	Sand	Zanderij	170
27	75	Regolith (clayey)	Basement (weathered)	30
>75		Fresh rock (granite)	Basement	700

Soil #25 = Para or old marine flat landscape – plateau soils - moderately well and imperfectly drained silt and silt loam over stiff (silty) clay

HD5

Van (mbgl)	Tot (mbgl)	Interpretatie	Formatie	Weerstand (Ohm.m)
0	2.5	Soil #25	Para silt / silt loam	320
2.5	9	Soil #25	Para stiff (silty) clay	20
9	14	Sand	Zanderij	100
14	28	Regolith (very clayey)	Basement (weathered)	15
28	130	Regolith (clayey)	Basement (weathered)	150
>130		Fresh rock (granite)	Basement	1000

Soil #25 = Para or old marine flat landscape – plateau soils - moderately well and imperfectly drained silt and silt loam over stiff (silty) clay

HD5B (improved inversion)

Van (mbgl)	Tot (mbgl)	Interpretatie	Formatie	Weerstand (Ohm.m)
0	2.5	Soil #25	Para silt / silt loam	320
2.5	9	Soil #25	Para stiff (silty) clay	15
9	20	Sand	Zanderij	100
20	28	Regolith (very clayey)	Basement (weathered)	5
>28		Fresh rock (granite)	Basement	1000

Soil #25 = Para or old marine flat landscape – plateau soils - moderately well and imperfectly drained silt and silt loam over stiff (silty) clay

NB. nearby located: Hanover BH H3/87 (BH data, PRC Annex 3)
0-9m Clay, 10-17m Sand, 17-29.5m Sand & Clay, >29.5m Bedrock

HD2

Van (mbgl)	Tot (mbgl)	Interpretatie	Formatie	Weerstand (Ohm.m)
0	10	Soil #25	Para silt / silt loam	400-190-600
10	17	Soil #25	Para stiff (silty) clay	65
17	40	Sand	Zanderij	500
40	65	Regolith (very clayey)	Basement (weathered)	11
>65		Fresh rock (granite)	Basement	2000

Soil #25 = Para or old marine flat landscape – plateau soils - moderately well and imperfectly drained silt and silt loam over stiff (silty) clay

HD2B (improved inversion)

Van (mbgl)	Tot (mbgl)	Interpretatie	Formatie	Weerstand (Ohm.m)
0	4	Soil #25	Para silt / silt loam	400-190
4	12	Sand	Zanderij	500
12	40	Sand/Clay	Zanderij	200
40	150	Regolith (clayey)	Basement (weathered)	50
>150		Fresh rock (granite)	Basement	2000

Soil #25 = Para or old marine flat landscape – plateau soils - moderately well and imperfectly drained silt and silt loam over stiff (silty) clay

HD12 – VES = missing

Soil #35 = Slope and plateau soils - moderately well and imperfectly drained loamy sand to sandy clay; locally somewhat excessively drained (bleached) medium and coarse sand

HD6 (NB. diepe meetpunten onbetrouwbaar)

Van (mbgl)	Tot (mbgl)	Interpretatie	Formatie	Weerstand (Ohm.m)
0	3	Soil #30 Sand (dry)	Zanderij	2500-800
3	14	Sand (dry)	Zanderij	1500
14	25	Sand (saturated)	Zanderij	200
25	90	Regolith (clayey)	Basement (weathered)	20
>90		Fresh rock (granite)	Basement	500

Soil #30 S = Zanderij outcrop? Dek landscape - plateau soils - excessively drained bleached medium and coarse sand

HD6B (NB. diepe meetpunten onbetrouwbaar)

Van (mbgl)	Tot (mbgl)	Interpretatie	Formatie	Weerstand (Ohm.m)
0	3	Soil #30 Sand (dry)	Zanderij	2500-800
3	14	Sand (dry)	Zanderij	1500
14	26	Regolith (very clayey)	Basement (weathered)	8
>26		Fresh rock (granite)	Basement	500

Soil #30 S = Zanderij outcrop? Dek landscape - plateau soils - excessively drained bleached medium and coarse sand

HD6J (NB. diepe meetpunten onbetrouwbaar)

Van (mbgl)	Tot (mbgl)	Interpretatie	Formatie	Weerstand (Ohm.m)
0	4.65	Soil #30 Sand (dry)	Zanderij	2370-850
4.65	10.67	Sand (dry)	Zanderij	2693
10.67	33.58	Regolith (very clayey)	Basement (weathered)	19
>33.58		Fresh rock (granite)	Basement	170

Soil #30 S = Zanderij outcrop? Dek landscape - plateau soils - excessively drained bleached medium and coarse sand

HD1

Van (mbgl)	Tot (mbgl)	Interpretatie	Formatie	Weerstand (Ohm.m)
0	5	Soil #30 Sand (dry)	Zanderij	2500-1100
5	22	Sand (saturated)	Zanderij	200
22	100	Regolith (clayey)	Basement (weathered)	40
>100		Fresh rock (granite)	Basement	>5000

Soil #30 S = Zanderij outcrop? Dek landscape - plateau soils - excessively drained bleached medium and coarse sand

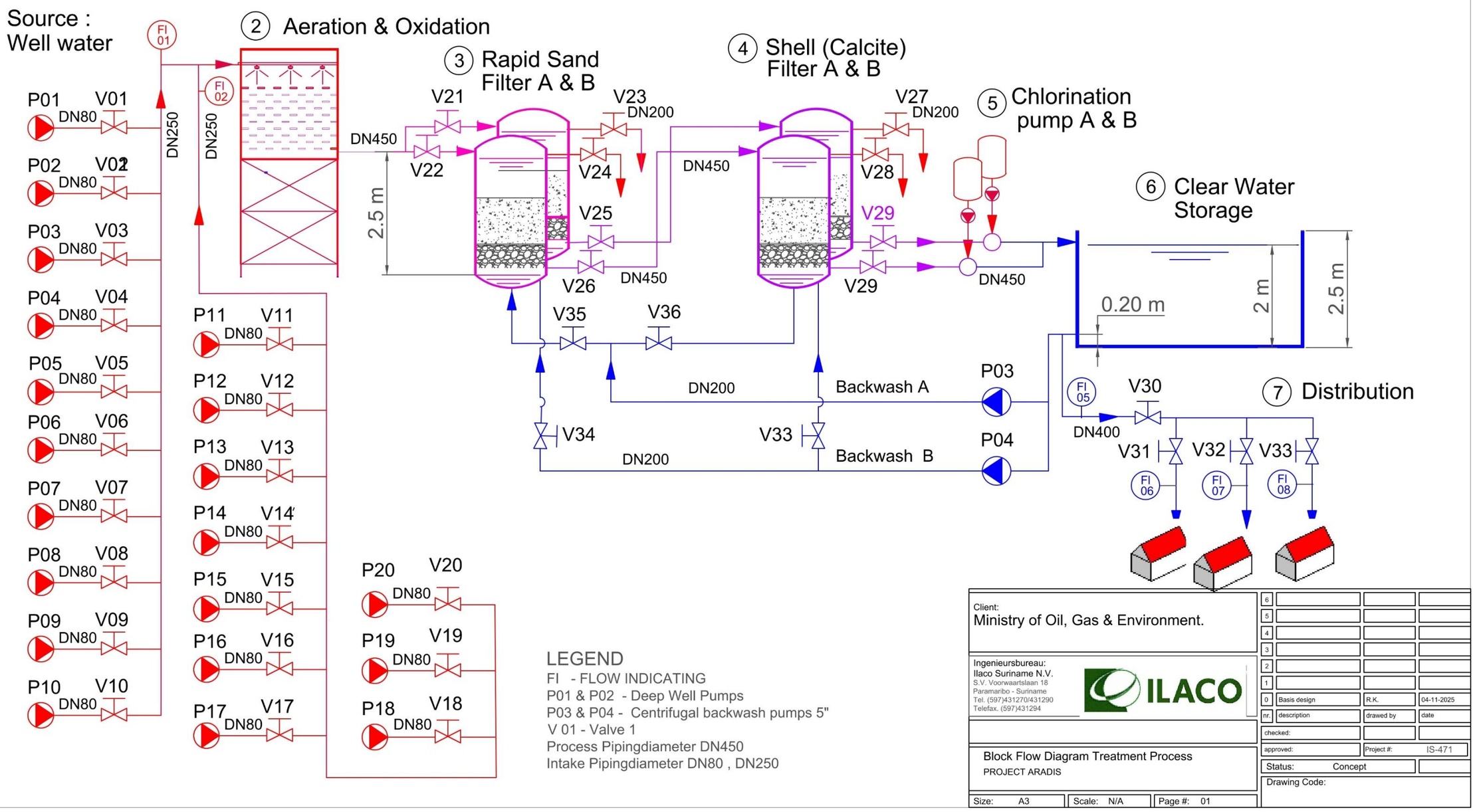
HD1J (improved inversion)

Van (mbgl)	Tot (mbgl)	Interpretatie	Formatie	Weerstand (Ohm.m)
0	5.4	Soil #30 Sand (dry)	Zanderij	372-1878
5.4	15	Sand (saturated)	Zanderij	303
15	135	Regolith (clayey)	Basement (weathered)	54
>135		Fresh rock (granite)	Basement	3000

Soil #30 S = Zanderij outcrop? Dek landscape - plateau soils - excessively drained bleached medium and coarse sand

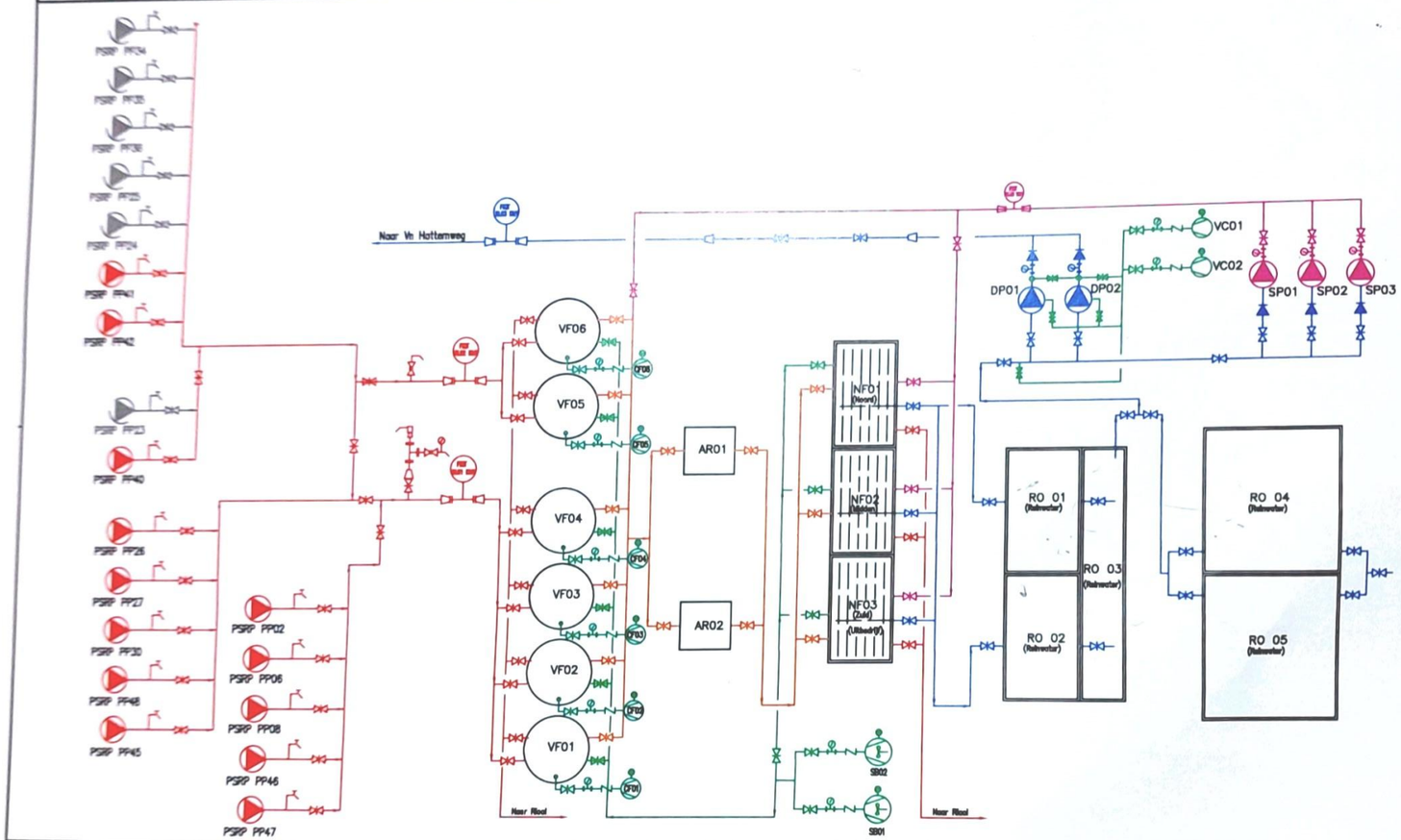
Annex 5: Piping & Instrumentation Diagram (P&ID) Treatment Process

Component	Rawwater Intake (PXX)	Aeration & Oxidation AO	Rapid Sand Filter RSF	Shell (Calcite) Filter Filter (SSF)	Clearwater Tank (CT)	Distribution Pumps (DP)	Backwash Pumps (BP)	Flowmeters FM		
Quantity	20					3	2	5		
Capacity (m3/h)	15 m3/h/well	260	260	260		450	255			
Max. Capacity (m3/h)	300	360	360	360		---	255			
Filtration velocity (m/s)			8-10	5-8		---				
Beddepth / head (mwk)			1.6	1.6		70 / 45	15 MPa			



Annex 6: Piping & Instrumentation Diagram (P&ID) Treatment Process Republiek

Onderwerp	Winning	Voorfilter (VF)	Aeratietoren (AR)	Nafilter (NF)	Reinwateropslag (RO)	Spoelpompen (SP)	Distributiepompen (DP)	Transportpompen (TP)	Oxidatie Compressor (CF)	Spoelluchtblower (SB)	Vacuumpomp (VC)	Debietmeter (DM)	Volumemeter (VM)
Aantal	13	5(4Identiek,2Kleiner)	2	3(Schijnfltr ZO nt actief)	5 Aparte secties	3	2	--	6	2	2	4	1
Capaciteit (m3/u)	260	260	260	260	400+4000 m3	225	450	--	.....	14.1/6.25 N/mm2	4	.....	--
Max.Capaciteit (m3/u)	360	360	360	360	.....	225	--	--	--		--	.....	.....
Filtratie snelheid (m/s)	.....	8-10	.....	5-8	--	.....	--	--	--		--	.....	.....
Beddikte/Opvoerhoogte(mwk)	.....	1.6	.....	1.6	--	15 (Max)	70 / 45	--	150	1500 Mb	--	.....	.....



NOTES

1. Ruwwater DN100, DN150, DN250, RVS, PVC, STAAL,
2. Voorfilters DN250, DN500, PVC, STAAL,
3. Leidingen naar diverse pompen DN200, DN300, STAAL,
4. Leidingen Vacuum pompen ½", ¾", Koper,

Rev.#	Getek.	Datum	Omschrijving
02	S.TOELSI	21-02-'14	IN ACAD & AS BUILT
01	T.LIEUW	00-10-'08	REVISIE

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SCHAAL NVT	PROJECT NAAM PROCES-SCHEMA PS REPUBLIEK		
PROJ. CODE SWM	ONDERDEEL PROCES FLOW DIAGRAM		
GETEKEND S.Toelsie	GECONTROLEERD D.Redjo/Cairo	TEKEN NUMMER RP-PF-01-01	
DATUM 06-Jun-2015	DATUM 02-Nov-2022	FORMAAT A3	