Studio Idrogeologico GEOECO di G.P. DROLI

UNDERSTAND, MANAGE, PROTECT WATER AND THE ENVIRONMENT WITH SAFE, EXPERT, RESPONSIBLE SOLUTIONS

Since 1991 we have solved and designed interventions for water, drinking, industrial and agricultural uses, for geothermal and hydroelectric energy, for hydrogeological instability on landslides, rivers and coastal-portal areas. We have remediated polluted areas and managed environmental crises, developing solutions that give security to your environmental, business, economic and legal decisions.

For us, economic and social development initiatives and business projects must be well calculated and in harmony with the protection of the environment and water: we want "eco-sustainability».

We are passionate about complex hydrogeological-hydrological issues, patents and projects that require operating with high technical-scientific and professional standards, with advanced mathematical methods and in multidisciplinary working groups.

Who We Are & What We Do (In Brief)

The GEOECO Hydrogeological Studio of G.P. DROLI was founded in 1986 in SAN LEONARDO in the NATISONE Valley (Udine, Italy)**.**

DROLI graduated in 1986-87 with a degree in **GEOLOGY** from the University of Trieste, with a **thesis in Hydrogeology applied** to water exploration in mountainous areas, experimenting with methods under extreme operating conditions in the MUSI Mountains (Lusevera, Udine).In 1991, he earned a **Diploma in Hydrogeology and Quantitative Hydrology** from the Grandes Ecoles d'Ingenieurs - Ecole Nationale des Mines de Paris-ARMINES, which awards the title of hydrogeologist in the EU and the U.S., with a memoir on the **"Numerical Hydrogeological Model of the Limestone Aquifer of the METROPOLE DU NORD – LILLE – ROUBAIX Region."**

Following the experience gained in Italy and abroad, **GEOECO's mission** was born: to be a specialized reference for studies and projects related to water, renewable energy, and the environment, with an interest in complex issues and solutions of high technical, scientific, and professional standards, producing precise, numerical, and verifiable data on site.

He has spoken in more **than 70 conferences and master's programs on water systems** for Public Authorities, Universities, ARPA (Regional Environmental Agency), Research Institutes**, p**rivate companies, scientific and environmental associations in Italy and abroad. He is the author of more than **60 articles on hydrogeology and hydrology**. A former member of **10 Building Commissions and institutional technical committees,** coordinator of the **Civil Protection Department** for the Municipality of San Leonardo, and founder of working groups, public and private commissions, and **national and regional technical and regulatory committees** on water issues, management of severe drinking water crises, defense against hydrogeological instability, and geothermal and hydroelectric energy.

In 2000, he founded LINFA s.r.l., the first company in Friuli Venezia Giulia region specialized in the technical, economic, social, and legal management of environmental issues for public and private companies.
Since 2006, he has been a partner **in the research company that holds patents** (Australia and Switzerland) **for technological systems for groundwater protection in deep drilling, the protection of drinking water aquifers, and the advanced and sustainable use of green hydrogen at industrial levels.**
In 2016, he founded AGA 4.0 s.r.l. to design, build, and operate advanced geothermal, electric, and thermal power plants.

Since 1990, DROLI has completed more than **390 projects in the water, environmental protection, hydroelectric, geothermal, and green hydrogen sectors.** His constant focus is the optimization and eco-sustainability of water production and energy uses, as well as the protection of nature. He works responsibly with the **goal of handing down a healthy water and environmental heritage to future generations** (Article 1 of the "GALLI Law").

Some of DROLI's **most important studies and projects** include:

- **WATER PROTECTION PLAN OF FRIULI V. GIULIA 2006-08 – Macro-area coordinator for surface and groundwater, Hydrogeological-numerical model of the aquifers of the Upper and Lower Friulian Plain;**
- **Hydrogeological management of the 1997 ATRAZINE CRISIS IN FRIULI – Coordinator of the "Water Crisis Management" group;**
- **Hydrogeological supervision for the PFAS remediation of the former MITENI and former RIMAR sites in Trissino-Vi (consultant to the R.U.P. during the process);**
- **COASTAL EROSION PROTECTION IN LIGNANO SABBIADORO (Udine) along the 6km coastline;**
- **HIGH-SPEED "VARIANTE EMILIANA" railway line, Bologna-Florence Apennine section: hydrogeological analitical model;**
- **S.E.C.A.B. HYDROELECTRIC POWER PLANTS: Enfretors, Museis, and Noiariis: hydrogeological study for the large-scale permits;**
- **WATER CRISIS PREVENTION PLAN, emergency response, protection of the aquifers of the Pordenone Province plain;**
- **Design and Concession for the 4.5 MWel GEOTHERMAL POWER PLANT in Aprilia Marittima – AGA 4.0 srl.**

What We Do

We use **mathematical hydrology and hydrogeology**, **forecasting simulation models and water management and protection strategies**, to give precise, advanced solutions and reliable data in **your decisions** on all issues of **water and environmental protection:**

Water for Industry, Agriculture and Livestock, Thermal and Drinking uses

We design and acquire permits and concessions for the use of ground and surface water (aquifers, springs and rivers) for productive activities: industrial, agricultural, fish, thermal-clinical, mineral water.

Water for Geothermal, Hydroelectric and Renewable Energy

Analysis of hydroelectric and geothermal sites, design and permits for low and medium enthalpy geothermal energy production plants, small and large branches, green hydrogen applications, development of new technologies for Renewable Energy.

Decontamination and Remediation of groundwater, Springs, Rivers and complex Water systems

Resolution of accidents with water pollution, projects for the remediation of contaminated industrial and agricultural areas, protection of drinking water, management of emergencies and serious water-environmental crises, technical-social coordination and management of the press and *mass media.*

Fluid dynamic modeling for Hydroelectric Plants and Projects for Ports, Marine and Coastal Areas

Projects to improve the quality of water in ports, minimize environmental impacts in coastal areas at risk, improve the performance of hydroelectric plants. Simulation of the hydrodynamic effects of industrial plants with a strong environmental impact and obtaining permits.

Hydrogeological instability, Environmental Impacts, Works Management, Special water measurements and Inspections

We resolve river, landslides, erosion of coastal marine areas, we plan the waters of ports and marinas. Environmental (EIA) and Strategic Impact Assessments (SEA). Works management and management of hydrogeological and hydrological sites. On-site inspections and measurements on groundwater, piezometers, levels of chemical contamination, speed and flow of rivers / groundwater / pipelines, permeability in saturated and unsaturated soils, subsidence of slopes and structures.

Consultancy for Courts, Legal Office, Economic and business analysis, drafting of Standards, Patents

Technical consultancy for Italian Courts. Legal advice and economic-financial feasibility studies for investments in renewable energy, high level environmental projects, due diligence on water and energy projects for investors, funds, insurance companies, universities, public and private health institutions. We study rules for the protection of water and the prevention of water pollution. We study new technologies and produce Patents.

Some of our Projects & Studies

Water for Industry, Agriculture and Livestock Farms, Thermae & Spas, Aqueducts

Design and acquisition of concessions for the use of ground and surface water (aquifers, springs, rivers) for industrial, agricultural, fish, thermal, mineral water production purposes and for public and private drinking uses.

1 - **PREVENTION OF THE WATER-DRINKING CRISIS IN THE LILLE-ROUBAIX-METROPOLE DU NORD AREA:** hydrogeological-numerical model of the artesian strata of the fractured limestones of the Metropole du Nord against drinking water crises in periods of lean and saline ingression - PARIS (France).

2 - STUDY OF THE ARTESIANS AND «FOUNTAINS» OF THE FRIULI LOW PLAIN: hydrogeological study for the management of 22,000 artesian wells for private drinking use present in 38 Municipalities in the province of Udine and Pordenone, with 40,000 inhabitants

3 - EXTRACTION OF SPRING DRINKING WATER IN THE MUSI VALLEY - AQUEDUCT C.A.F.C. s.p.a .: Groundwater Extraction of 450 liter / sec of the CAFC aqueduct of UDINE (280,000 users) with 18 sub-horizontal drains and Fehlmann well, in a mountainous area in a high-impact landslide body. LUSEVERA (Ud).

4 - PROTECTION OF DRINKING WATER AND WATER CRISIS OF THE AMGA-UDINE AQUEDUCT: Model for increasing the lean flow rates by 130 l/s, preventing pollution of the groundwater extracted by the underground tunnels of Zompitta (Ud), decisions in the event of pollution (120,000 utilities).

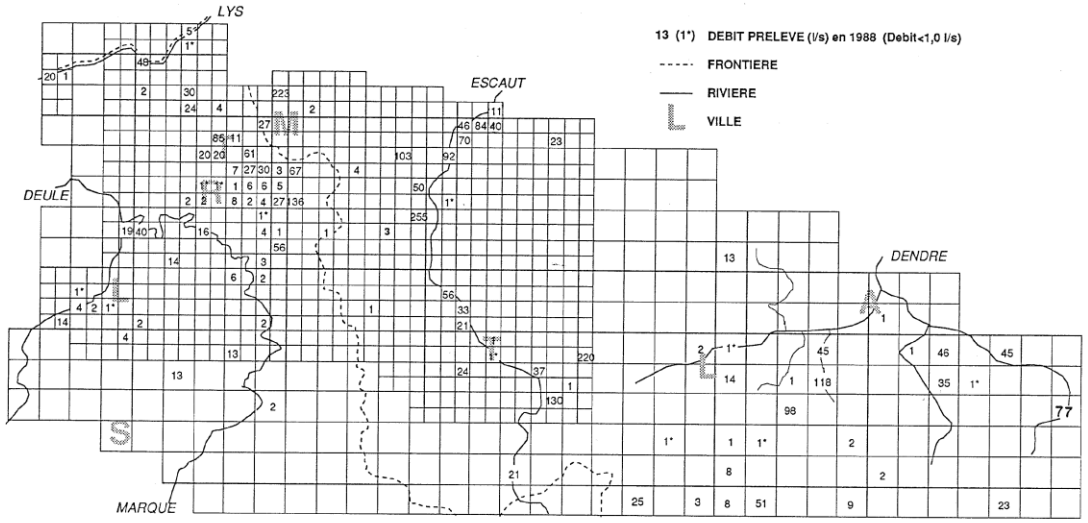
5 - ARTIFICIAL DEVELOPMENT OF THE GROUNDWATER OF THE MIDDLE PLAIN OF THE UDINE AREA: hydrogeological study and mathematical-analytical model of the groundwater of Pozzuolo-Lestizza-Mereto (Ud), project for the recharge of the plain water irrigation canals. Works amount € 2.5 million. (inspections in 2m diameter wells in groundwater for work interruption, repairs and malfunction analysis).

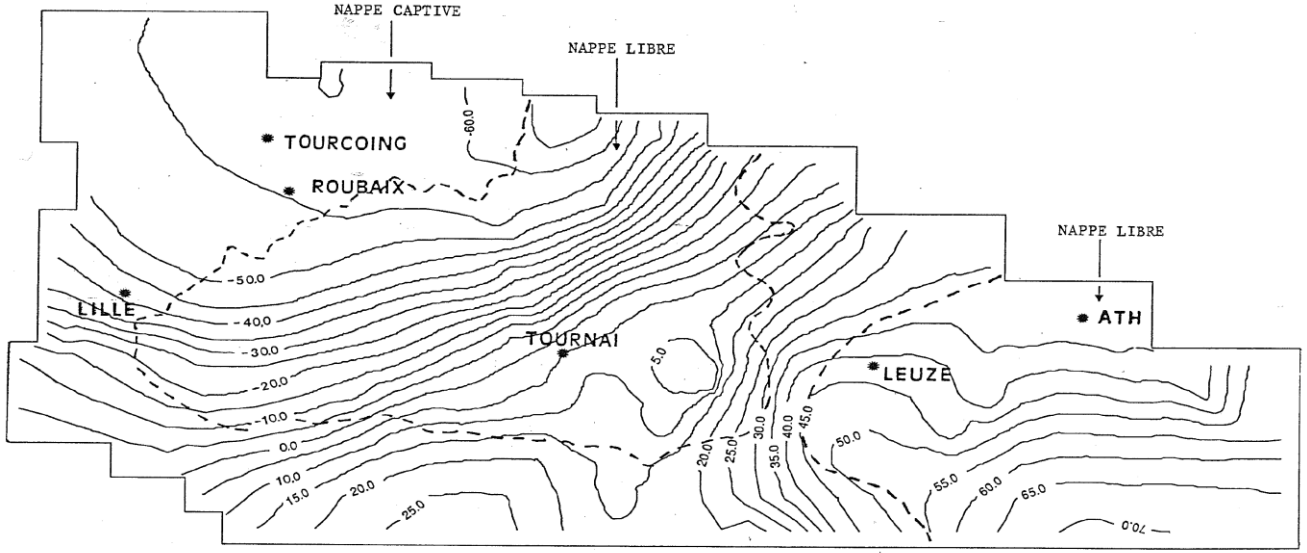
6 - PROJECT FOR THERMAL BATHS AND GEOTHERMAL WATERS "VAL CAVARERA - SACCA MORERI": Environmental Impact Study for "ZAMPARINI CITY" (works amount € 800 million) for geothermal plant, well drilling at 1,600m for thermal and geothermal use. GRADO (Gorizia).

7 - COMPLETION AND INTEGRATION OF A DRINKING-WATER PROJECT - VENETO ACQUE s.p.a.: Hydrogeological study and analytical model of the project to extract 1,000 liters / s, from the Brenta River for the 11 municipalities of Upper Brenta. Barriers in the riverbed Camazzole recharge lake, new wells for drinking water. Initial amount proposed for the works € 17 million (Padua and Vicenza).

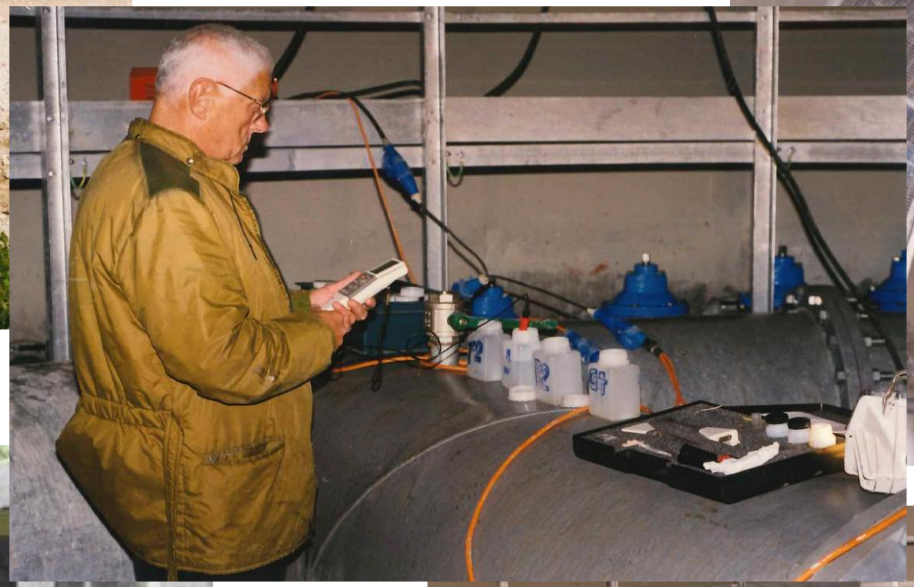
8 - STUDY & RESEARCH FOR IRRIGATION WATERS AND DRINKING WATERS IN NEW-CAIRO: Basic hydrogeological study, on-site analysis of technical economic pre-feasibility, search for irrigation and drinking water for the metropolitan area under construction for 2,500,000 inhabitants in NEW CAIRO (Egypt).

PREVENTION OF THE WATER-DRINKING CRISIS OF THE LILLE-ROUBAIX METROPOLE DU NORD AREA (France): hydrogeological-numerical model of a 2D and a half flow of the groundwater and underlying freatic aquifer for programming the flow of drinking water to be drawn from the hot limestone, the management of water withdrawn in the industrial areas of western Belgium, prevention of saline ingression from the sea in the section of the Franco-Belgian Channel.

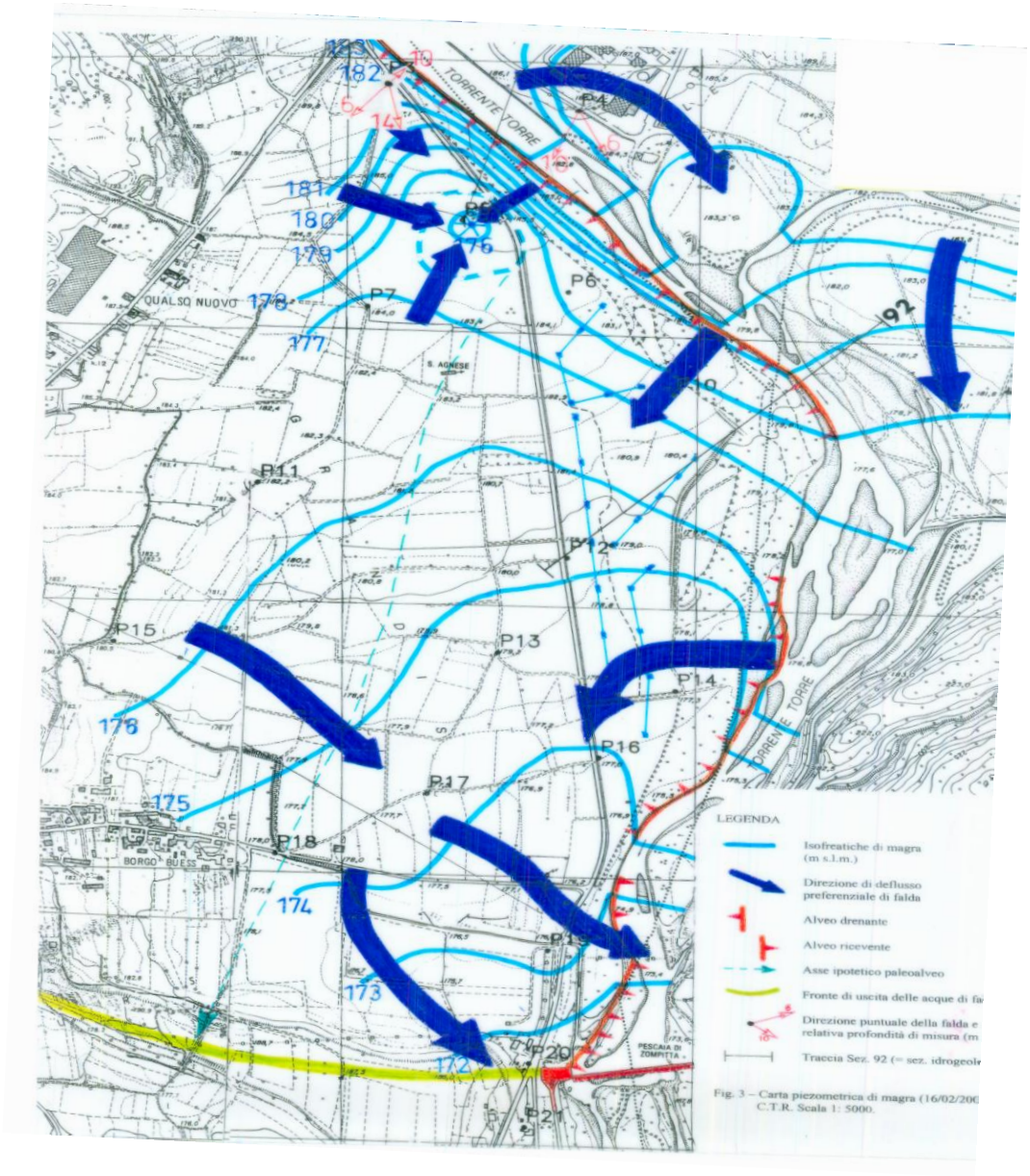


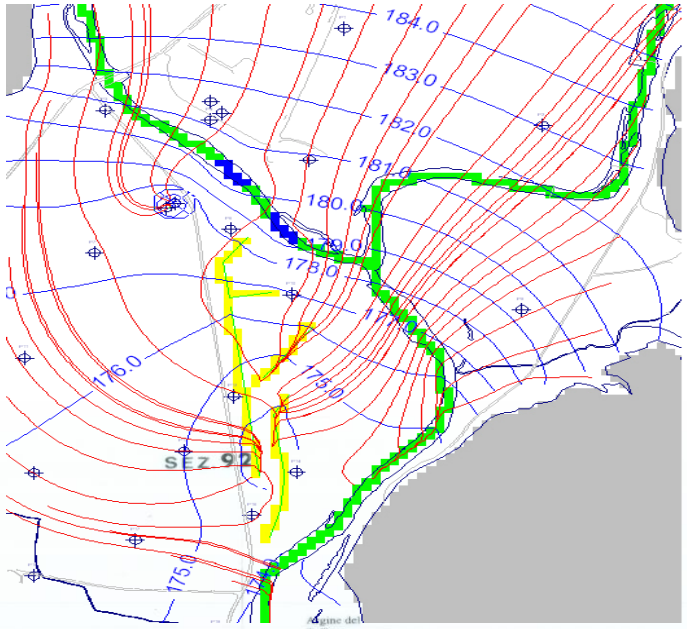


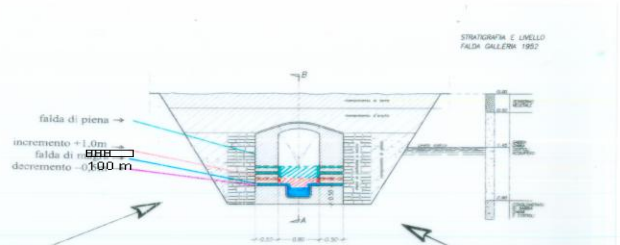
CAPTATION OF SPRINGS OF THE MUSI VALLEY AT THE T. TORRE FOR THE C.A.F.C. AQUEDUCT (240.000 users): Hydrogeological investigations, sub-horizontal and vertical piezometers, chemical and isotopic analyzes on the waters of the TORRE springs and in the drains chamber, analytical hydrogeological model, project of the caption works for 450 liters/s of water for the drinking water uses and for mineral waters, guarantee of invariability of the flow rate of the springs and of waters without turbidity during the floods of the TORRE torrent.

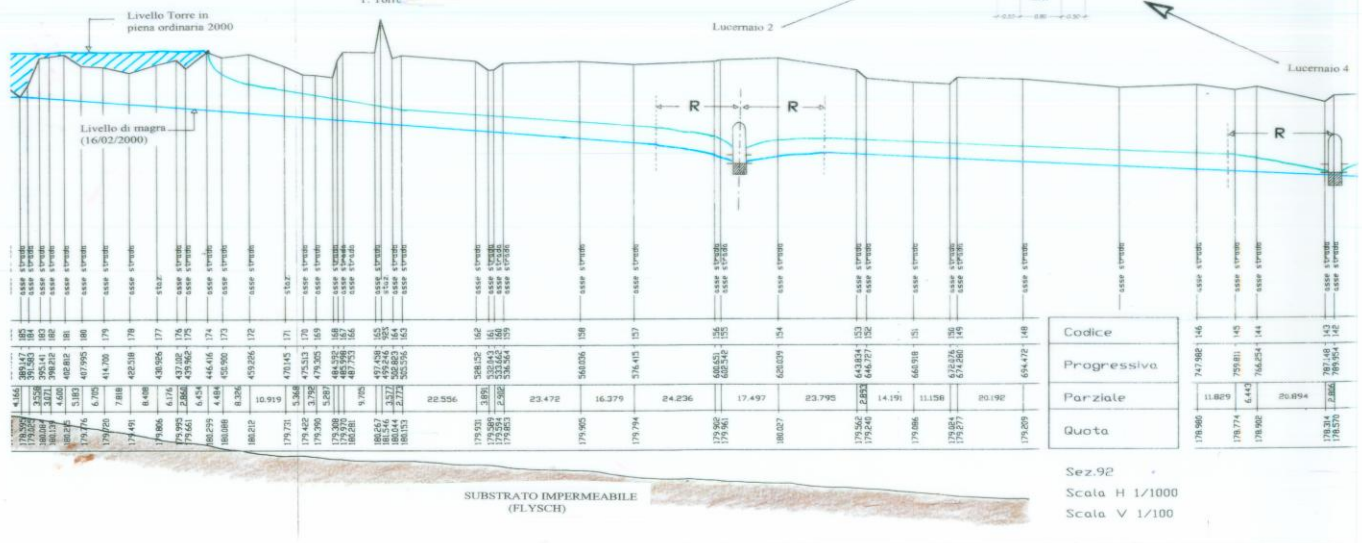


PROTECTION AGAINST DRINKING WATER POLLUTION AND WATER CRISIS MANAGEMENT OF THE UDINE AQUEDUCT - AMGA SpA (130,000 users): 2D hydrogeological-numerical model of flow and transport, groundwater monitoring with 21 piezometers, pollution prevention plan, pollution prevention plan prompt intervention and management of serious water crises, 130 l/s increase in flow rates taken in lean with hydraulic barrier and artificial aquifer recharge.



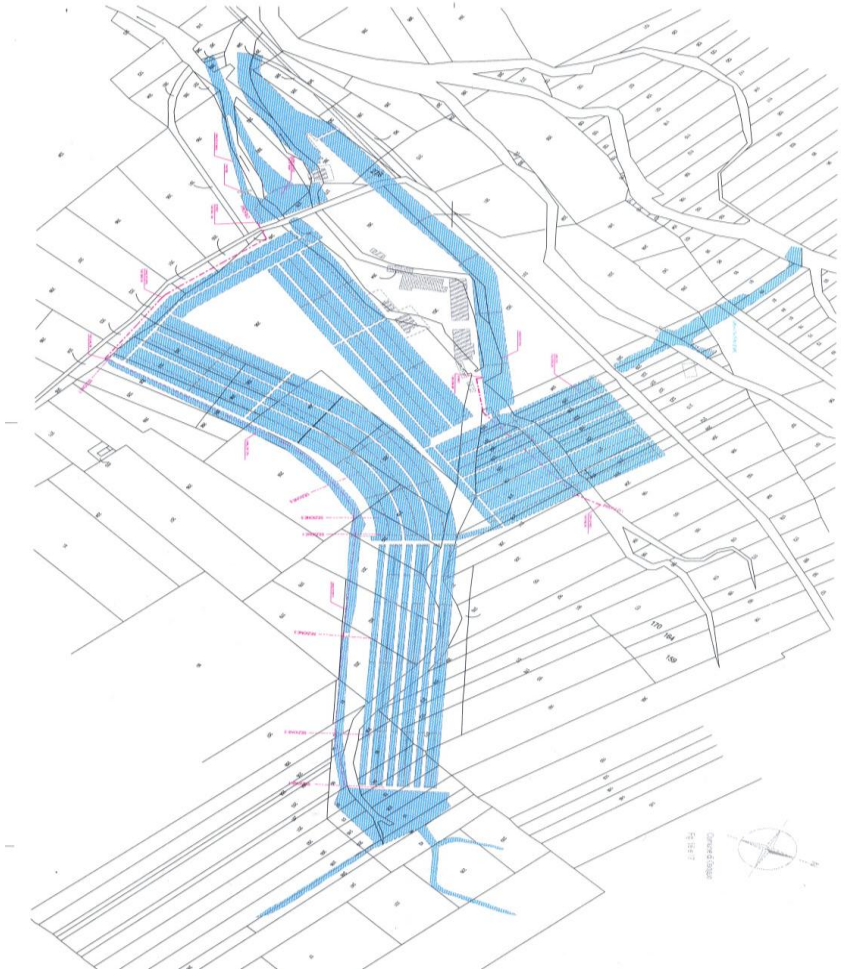






ARTIFICIAL RECHARGE OF THE MIDDLE FRIULI AQUIFER (Udine plain): hydrogeological study and mathematical model of the freatic aquifer of Pozzuolo-Lestizza-Mereto, project for the recharge of the aquifers with the water of the irrigation channels for 2 mc / s, recharge basins and quality monitoring, installation of micro-hydroelectric plants in the bottom (inspections in the wells DN = 2m and resolution of the stop of the works caused by boulders present in the bottom of the well).

LARGE DERIVATION CONCESSION (1.5 mc / s) FOR THE “NUOVA AZZURRO" FISHING PLANT- OSOPPO (Udine) : Hydrogeological study, flow rate and water level measurements in lean water for piezometric map, guarantee of continuity of flow rates drawn in lean, protection of aquifers from the consequences of excavations for the pipeline of the SNAM methane pipeline near a fish farm, elimination of the risk of turbid water entering the aquifer due to excavations.



Some of our Projects & Studies

Water for Geothermal, Hydroelectric and Renewable Energy

Analysis of hydroelectric and geothermal sites, design and acquisition of permits to build plants for the production of electricity and thermal energy from low and medium enthalpy geothermal energy, from hydroelectric power, from *green hydrogen*, patents, research and development of new technologies.

1 - S.E.C.A.B. HYDROELECTRIC POWER STATIONS: Hydrogeological, environmental study and flow measurements for large-scale permits of the hydroelectric power plants of Enfretors, Museis, Noiariis in the Municipalities of Paluzza, Cercivento, Ravascletto, Treppo, Ligosullo, Sutrio (Udine), in 170 sq km, 5,200 users.

2 - THERMAL AND THERMAL GEOTHERMAL PLANT "TERME SIL" LIGNANO SABBIADORO (UDINE): project, environmental impact, permitting and permits for a well at 1.505m in calcareous aquifer, Works Management, flow rate 5.5 liters / s, temperature 65 ° C , management of the well 2011-12.

3 - GEOTHERMAL PLANTS FOR THERMAL ENERGY: project, environmental impact, permitting and concessions, Works Management, for the drilling of wells at 700m (LIGNANO «Green Village»), 700m (LIGNANO «International Equestrian Center), 110m (IKEA - VILLESSE).

4 - S. ROCCO PONTEBBA HYDROELECTRIC POWER STATION: Project and V.I.A. for the Power plant on the River FELLA with large water supply for 1.7Mwe, conducted from 4 km in the tunnel, power plant in the cave (project amount € 17 million), PONTEBBA (Ud).

5 - GEOTHERMAL-ELECTRIC AND BIOMASS POWER PLANT «M.G. AEROSPACE »: Technical-economic feasibility study, urban waste management and reuse waste, analysis of alternatives and environmental impacts for the biomass-municipal waste power plant and electro-thermal geothermal plant with2.2 Mwe power for 2,000,000 inhabitants , project amount € 40 million. S. JOSE '- CURITIBA (Brazil).

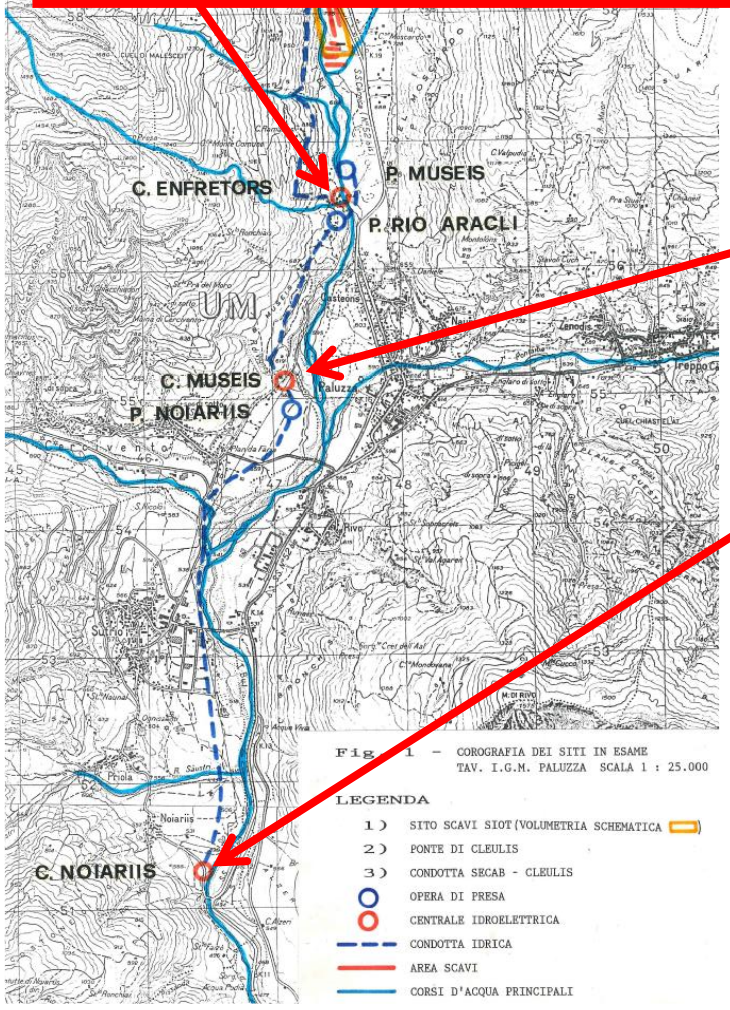
6 - "PALAIS LUMIERE" GEOTHERMAL-ELECTRIC-THERMAL POWER STATION - PORTO MARGHERA (VE): study of technical-economic feasibility scenarios and environmental impacts for the electro-thermal geothermal plant with 1.5 Mwe power (total project amount € 2120 million) – VENICE.

7 - GEOTHERMAL-ELECTRICAL-THERMAL POWER STATION "NEW ROME STADIUM": study of technical-economic feasibility scenarios and environmental impacts for the 1.5 MWe electro-thermal geothermal plant (total project amount € 1150 million) – ROME.

8 - "UDINE SUD" GEOTHERMAL-ELECTRIC-THERMAL POWER STATION: study of technical-economic feasibility scenarios and environmental impacts for the electro-thermal geothermal plant with 1.5 Mwe power (total project amount € 15 million) – UDINE.

9 – Project and Environmental Impact Assessment (EIA) for a 4.5 MWel GEOTHERMAL-ELECTRIC and HOT-COLD THERMAL POWER PLANT in APRILIA (Udine) – AGA4.0 srl. (Plant value €25 million).

S.E.C.A.B. HYDROELECTRIC POWER STATIONS by Enfretors, Museis and Noiariis: hydrogeological, environmental, piezometers, flow measurements for large-scale permits of the 3 hydroelectric power plants in the Municipalities of Paluzza, Cercivento, Ravascletto, Treppo, Ligosullo, Sutrio (Udine), on 170 sq. km, 5.200 utilities.



Geothermal-thermal well in LIGNANO (Udine): Hydrogeological-geothermal study, design, geothermal-thermal permit, drilling work management, 1,505m deep well, flow and production tests, well management and chemical analyses in the period 2010-2012. Flow rate 5.5 l/s, Temp. 65°C, work phases Rotary Corsair 300 - 90 ton platform, rod tightening with 7 ton clamp. Geothermal aquifer in fractured limestone, subsequent construction of a 4-star Thermal Hotel (start of work January 2012 - inauguration July 2023).

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A Lignano partiti i lavori di riqualificazione per l'albergo delle terme

Dopo più di vent'anni, avviato il cantiere nell'area in concessione alla Sil di Lignano Riviera

GALLERIA FOTO

27 gennaio 2021

Da più di vent'anni se ne parla ed ora è partito il cantiere riguardante l'intervento di ristrutturazione e ampliamento dello stabilimento della società imprese Lignano con introduzione dell'uso alberghiero.

Il nuovo progetto voluto dalla concessionaria del bene demaniale prevede la creazione di un hotel 4 stelle, dotato in un primo momento di 24 suite, per poi procedere con un secondo intervento di altre 24 stanze fronte mare, ricavate in alcuni spazi dello stabilimento già esistenti. Oltre alla struttura ricettiva, è prevista anche un'area wellness. L'intervento totale è di € 7.500.000 euro.

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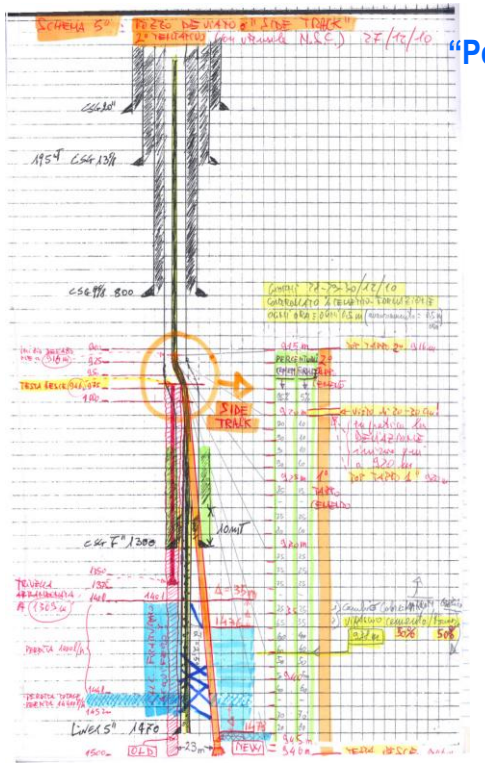
Per seguire le dirette di Telefriuli, clicca il tasto LIVE in alto oppure sintonizza il tuo televisore sul canale 11 e 511 HD del digitale terrestre.

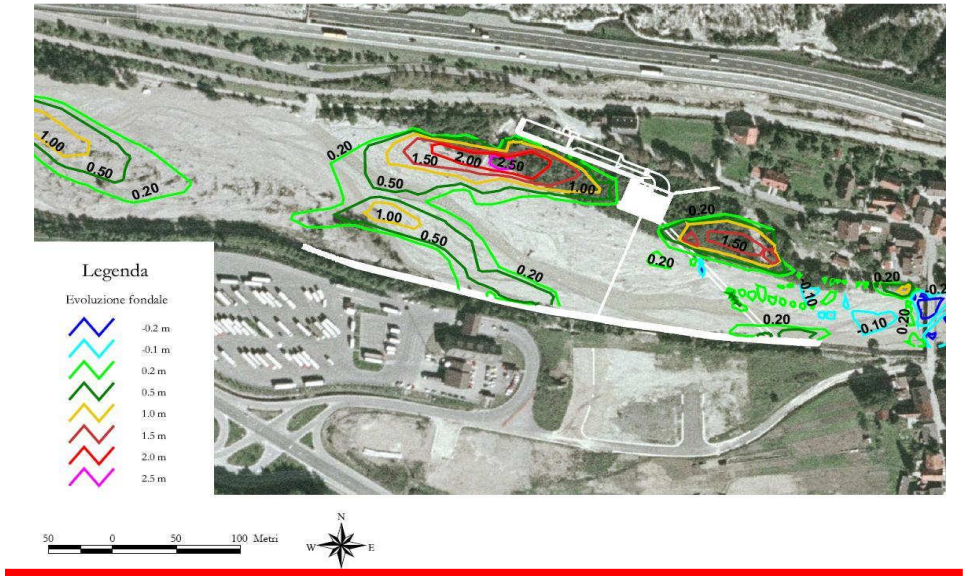
AUTORE: Alexis Sabot

Geothermal-thermal well in LIGNANO SABBIADORO (Ud): hydro-geological-geothermal study, geothermal-thermal project and permits, direction of drilling works, flow and production tests, well management and hydro-chemical analysis in the period 2010-2012 , flow rate 5.5 l / s, temperature 65 ° C.

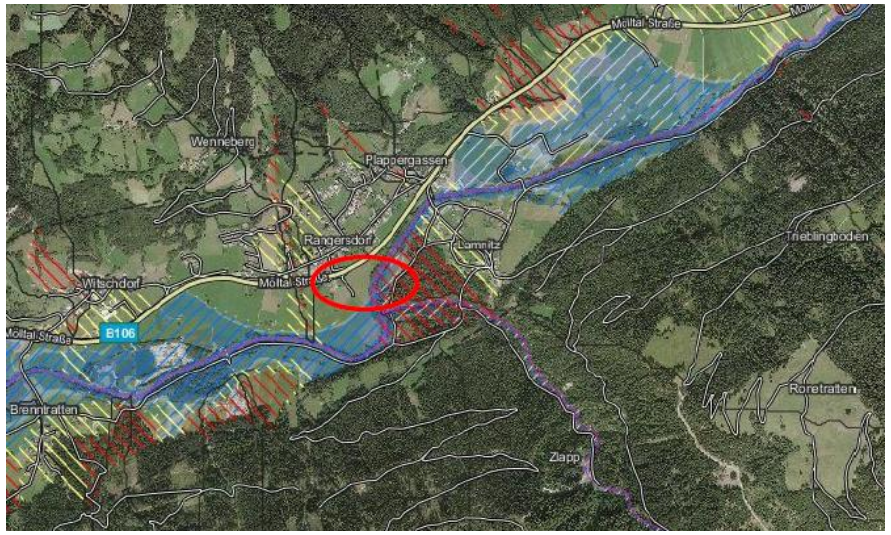


"Perforazione direzionale" pozzo deviato N.S.C. (estraggo l'utensile deviatore artigianale e scendo con scalpello "motore di fondo")

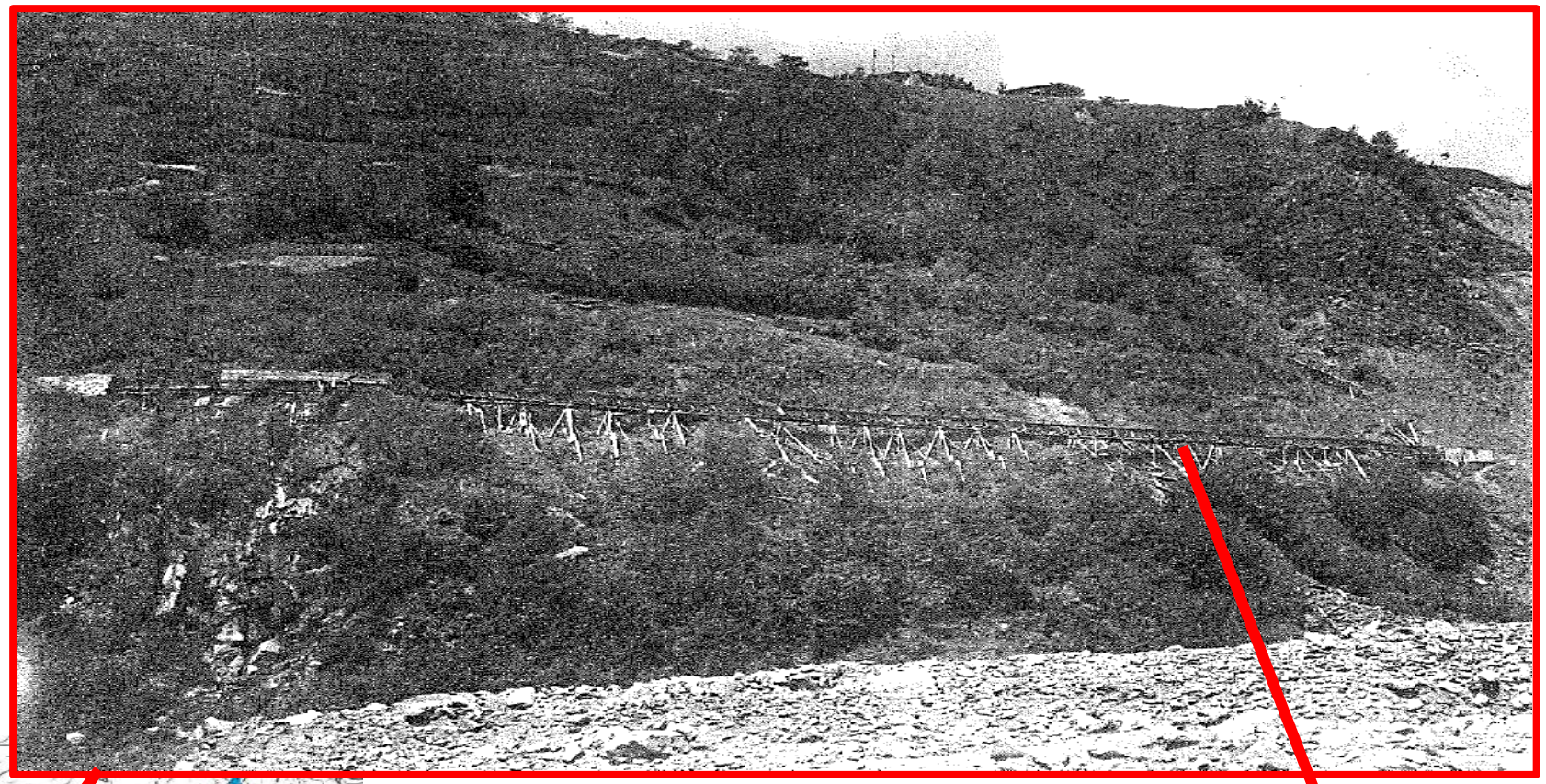
Project of the S. Rocco Hydroelectric Power Plant - PONTEBBA (Ud): Project, Environmental Impact Assessment, 2D numerical hydrological model for the calculation of water velocities in the riverbed, geometric triangular meshes of the riverbed, gravel volumes eroded from the banks and river bed in full phase with t = 100 years and 300 years, sampling point on F. FELLA with 3,000 l / s, power of the plant 1,7 MWe.

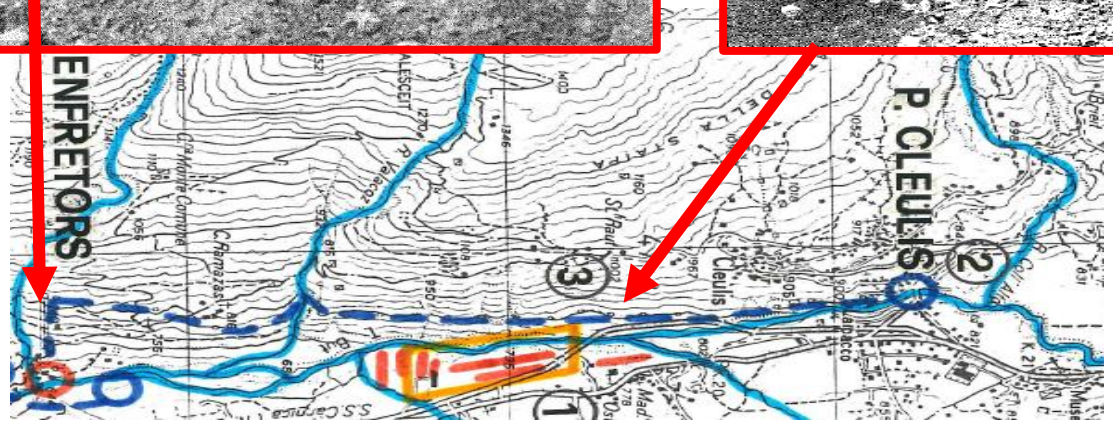


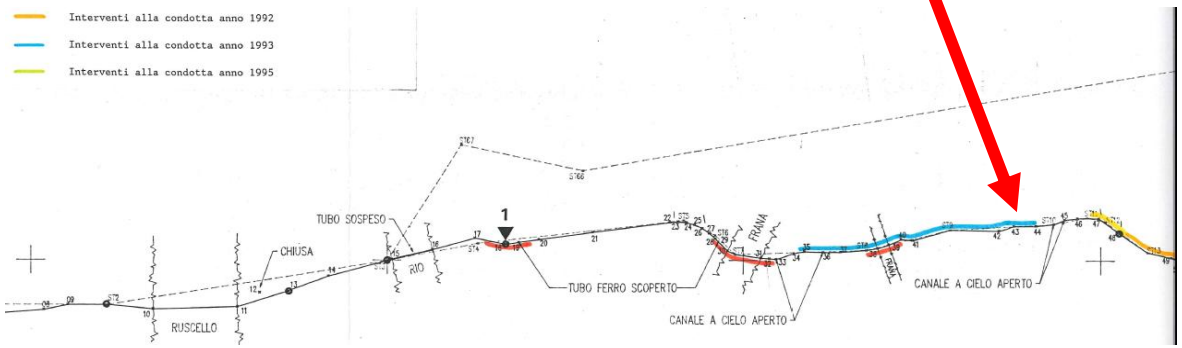
Hydroelectric Power plants BURGI (Gemona, Gorizia), AMGA-UDINE, LUSEVERA-Virgilio, WEISSENFELS (Fusine-Udine), RANGERSDORF (Austria), **BASSANO (Tv):** Hydrogeological studies, flow and hydrological-river measures, obtaining permitting-concessions of large water derivation, Consulting for Courts and CTP. **Gelindo COMPASSI hydroelectric power station destroyed by the flood of the Rio TERRE ROSSE in DOGNA (Udine):** hydrogeological-environmental study, Permits. **Paper Mill ERMOLLI of MOGGIO hydroelectric plant (Ud):** hydrogeological study, fluid dynamic model, revamping, obtaining Permits.



Remaking of the 1.4 km CLEULIS pipeline on the landslide side along the F. BUT (photo of the original wooden pipeline of 1936 and of the vertical fall channel at the ENFRETORS power station (SECAB hydroelectric plants - Paluzza): geological and hydrogeological surveys along the pipeline together with Dir. Roberto MAIER (ex SECAB Director) for the construction part, measures and geostatic project, environmental impact and Permits.







Some of our Projects & Studies

Decontamination and Remediation of Groundwater, Rivers and complex Water Systems

Resolution of water pollution problems and design of remediation works in contaminated areas, protection of drinking water, management of emergencies and serious or widespread environmental crises.

1 - "EX-BARCO" ABUSIVE LANDFILL DISCHARGE CASTELLAZZO BORMIDA: Geoelectric and hydrogeological groundwater investigations on an illegal landfill of industrial and toxic-harmful waste with an extension of 70 hectares with pollution of the Bormida River. CASTELLAZZO (Alessandria).

2 - «SIGNATURE CLEAN» PROJECT WITH REMOVAL OF 10 LANDFALLS AND 11 QUARRIES: hydrogeological and hydrological study for the management of groundwater contamination by NH4, NO3, Mn, project of hydro-sanitary interventions for the protection of the water table and the water of the F. NATISONE in a contaminated area with 11 landfills and 10 quarries within a 2km radius. PREMARIACCO (Udine).

3 - MANAGEMENT OF THE «ATRAZINE CRISIS» ON THE DRINKING WATERS OF THE LOW PLAIN FRIULANA: hydrogeological study of multilayer aquifers, census of 40,000 artesian wells for private drinking water, scheme of exploited aquifers, public actions for the hydro-sanitary protection of the affected population (81,000 people, 31 Municipalities, 2 provinces, crisis duration 2 years). UDINE, PORDENONE.

4 - SOCECO LANDFILL CONTAMINATION MANAGEMENT: Environmental Impact Study, groundwater monitoring project, remediation and monitoring project in the "post mortem" phase of the landfill (300,000mc) R.S.U. by UDINE.

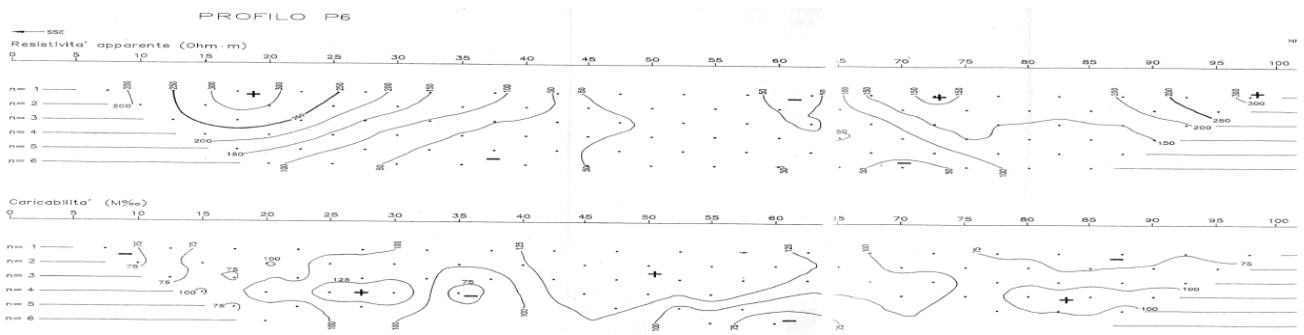
5 - WATER PROTECTION PLAN - FRIULI VENEZIA GIULIA 2008: responsible for the "Ground and surface water" Macroarea, Preparatory and Knowledge phase, regional hydrogeological-hydrological scheme, critical issues and prevention measures, Numerical model of flow and transport of the 4 major contaminants (industrial, agricultural, urban, landfills-quarries) in the aquifers of the Upper and Lower Friuli Plain, TRIESTE.

6 - "EX-COGOLO" AREA REMEDIATION hydrogeological and hydrochemical investigations, numerical flow model, reclamation project of the water table and of the two artesian aquifers, area of 240.000mq contaminated with tannery sludge (Cromo7 and CVM), restoration works (€ 10.5 million). S. Giorgio di Nogaro (Ud).

7 - "INDUSTRIE ILPEA S.p.A." REMEDIATION: piezometric and hydrochemical monitoring of a 15,000 sqm site contaminated with mineral oil, preliminary hydrogeological study, analytical model of flow and transport in the aquifer, groundwater remediation project. ZOPPOLA (Pordenone).

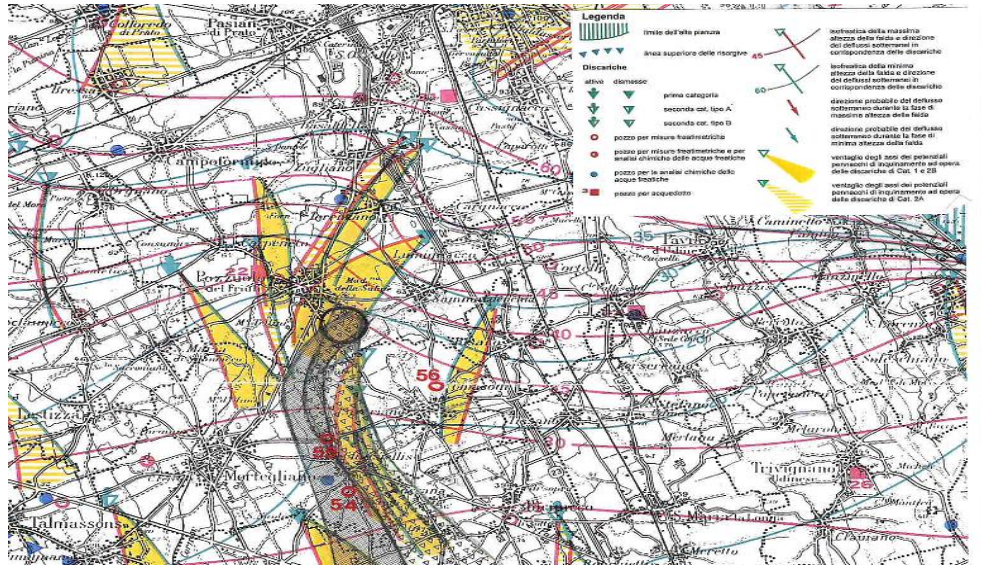
8 - PREVENTION, EMERGENCY RESPONSE AND PROTECTION PLAN FOR DRINKING GROUNDWATER IN THE PLAIN OF PORDENONE PROVINCE: actions against agricultural, urban, and industrial pollution, landfills, chemical risk areas, road axes, protection of aquifers and wells for drinking and irrigation water. (1996-98).

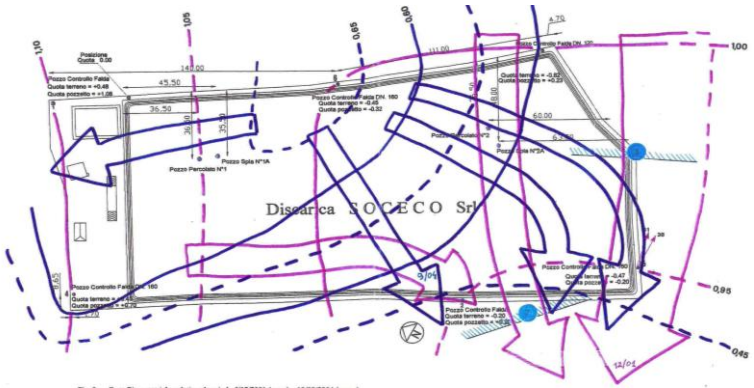
Remediation of the illegal Ex-Barco landfill - CASTELLAZZO BORMIDA (Al) with a surface of 70 hectares: on-site geoelectric surveys (SEV, detailed sections, tomography at -15m), hydrogeological, hydrological and environmental surveys on the F. ORBA, for the definition of the basins for the storage of industrial waste and for the remediation project - Castalia spa (photo: aerial overview of the site, work team commissioned by IDROGEO-Trieste, Section P6 profile of the waste basins).



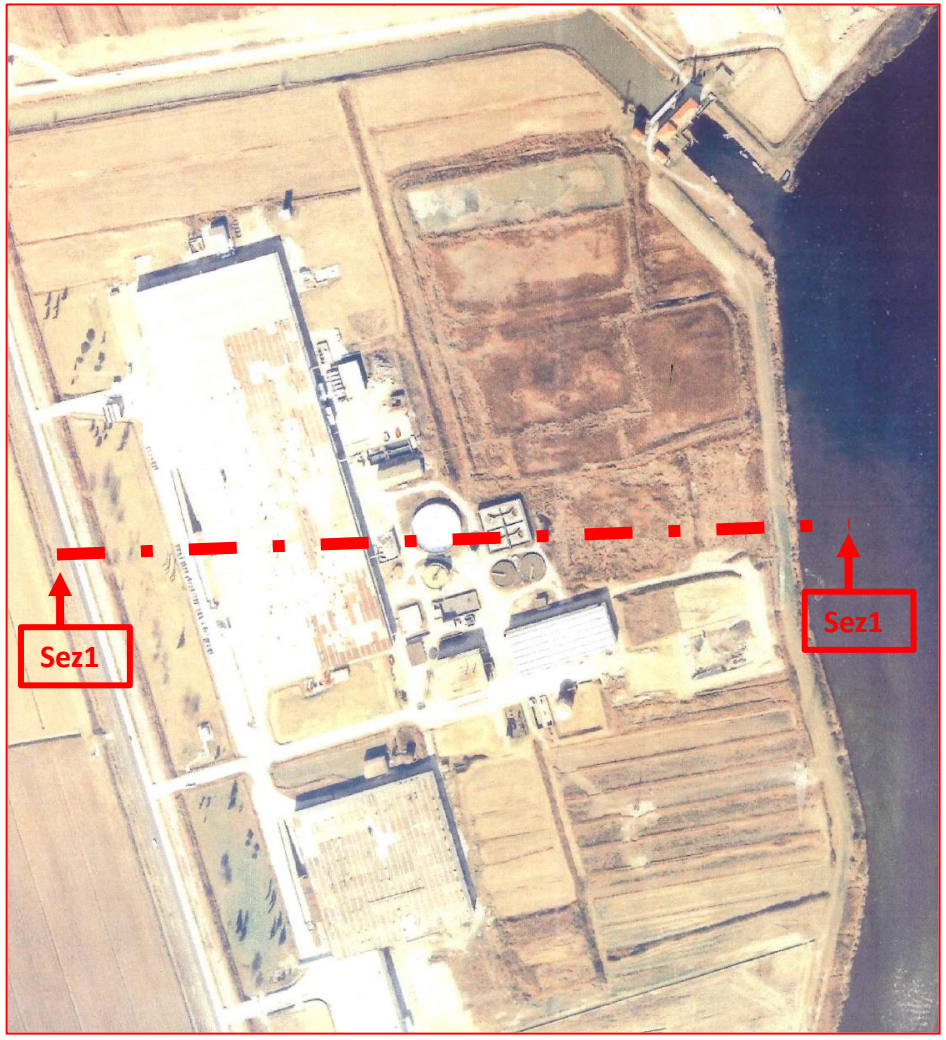
E.I.A. Environmental and Impact Assessment and environmental remediation project and expansion of the landfill 1,000,000mc UDINE "MIDOLINI - DI LA 'DA TOR«: environmental and hydrogeological analysis, inspection of the groundwater monitoring well at 34m depth to verify the presence of polluting emissions underground downstream of the existing landfill).

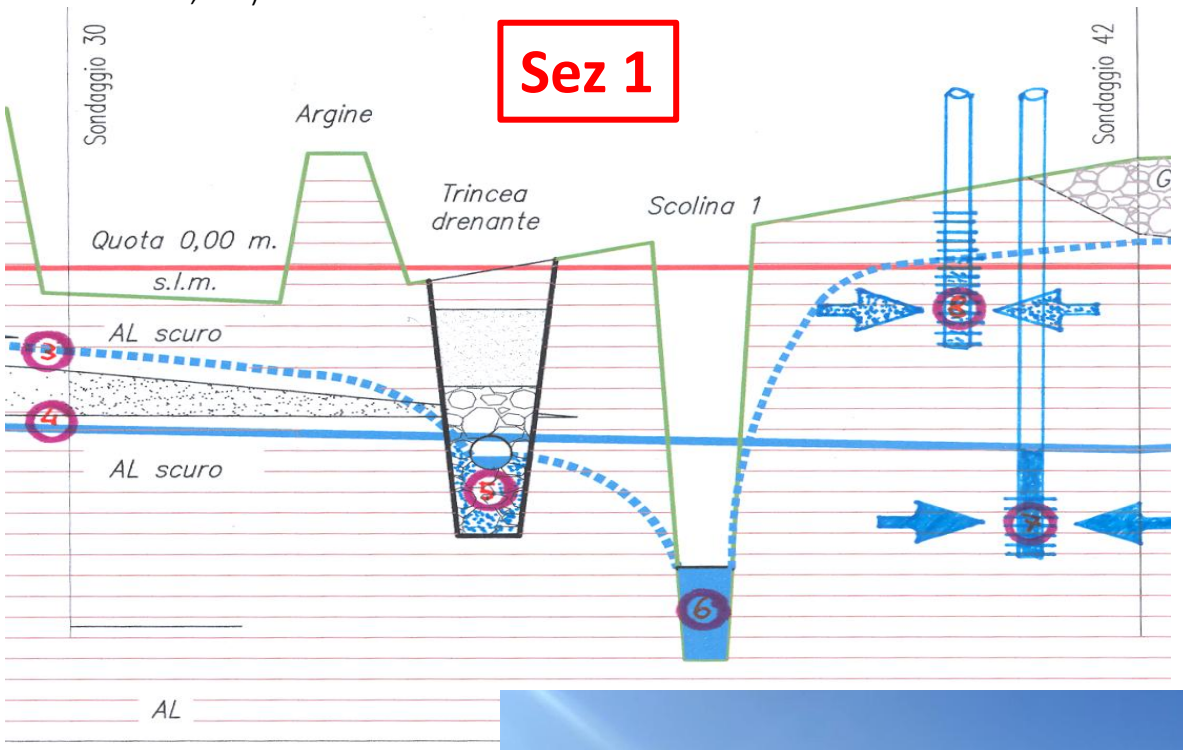
E.I.A. and hydrogeological and groundwater monitoring project of SOCECO landfill in UDINE: possible trajectory of a contaminating plume starting from the landfill, construction phases of the 300,000m3 landfill, piezometric measurements and on-site analysis of chemical-physical parameters of the water table, hydrogeological scheme of the preventive monitoring plan.





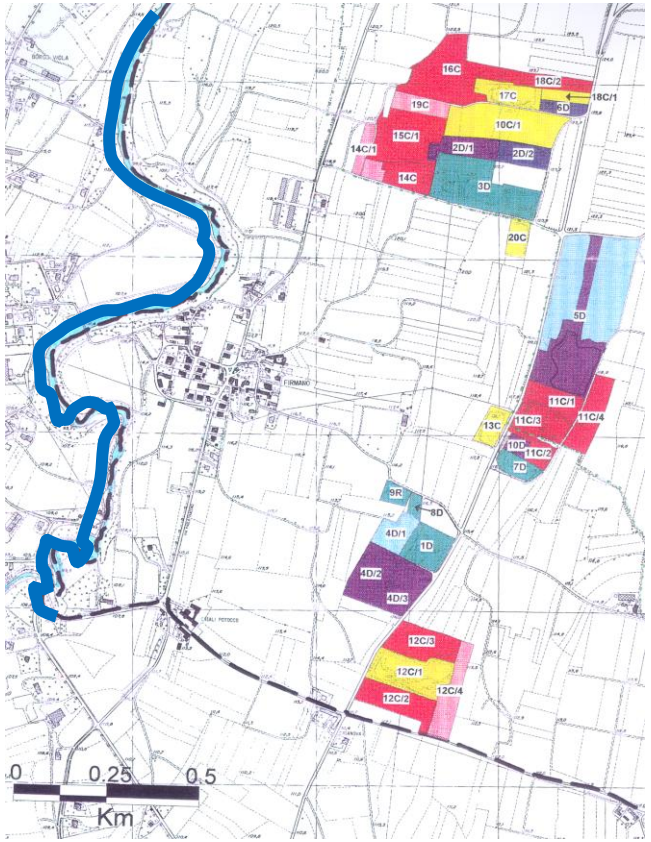
REMEDIATION OF «EX-COGOLO» TANNERIES AREA polluted by Chromium 7 and CVM: characterization of the hydrogeology of the two local stratums contaminated by Chromium 7 and CVM (groundwater and first artesian groundwater) through 70 telescopic structure piezometers to prevent the transfer of contamination between the two aquifers, project of remediation interventions on 240.000 sqm, 800 trucks of material disposed of in landfills, cost of remediation 10.5 million € (Zona Ind. AUSSA CORNO - S. GIORGIO di NOGARO, Ud).

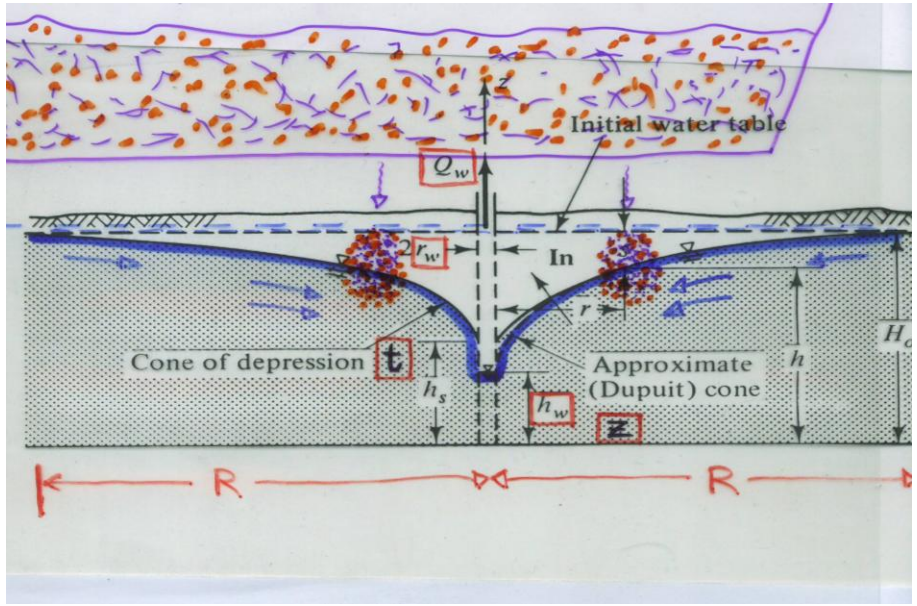




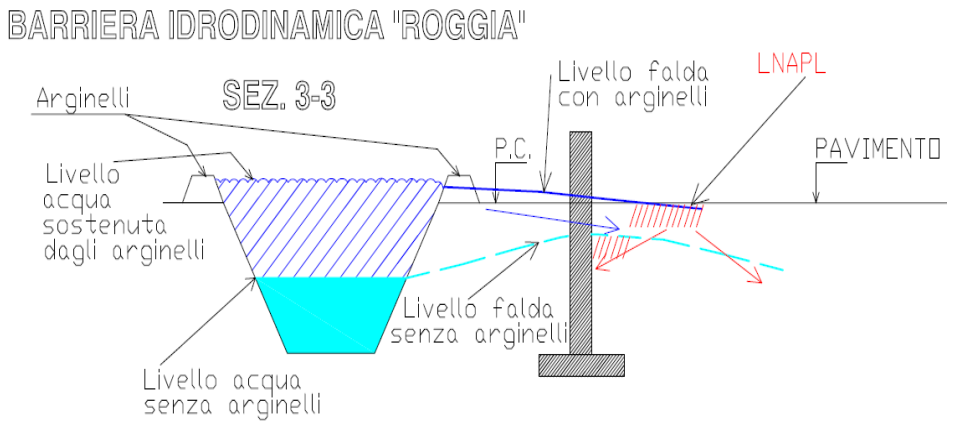
The site as it appears after the remediation and construction of the Glass Industry VDN s.r.l. factory.

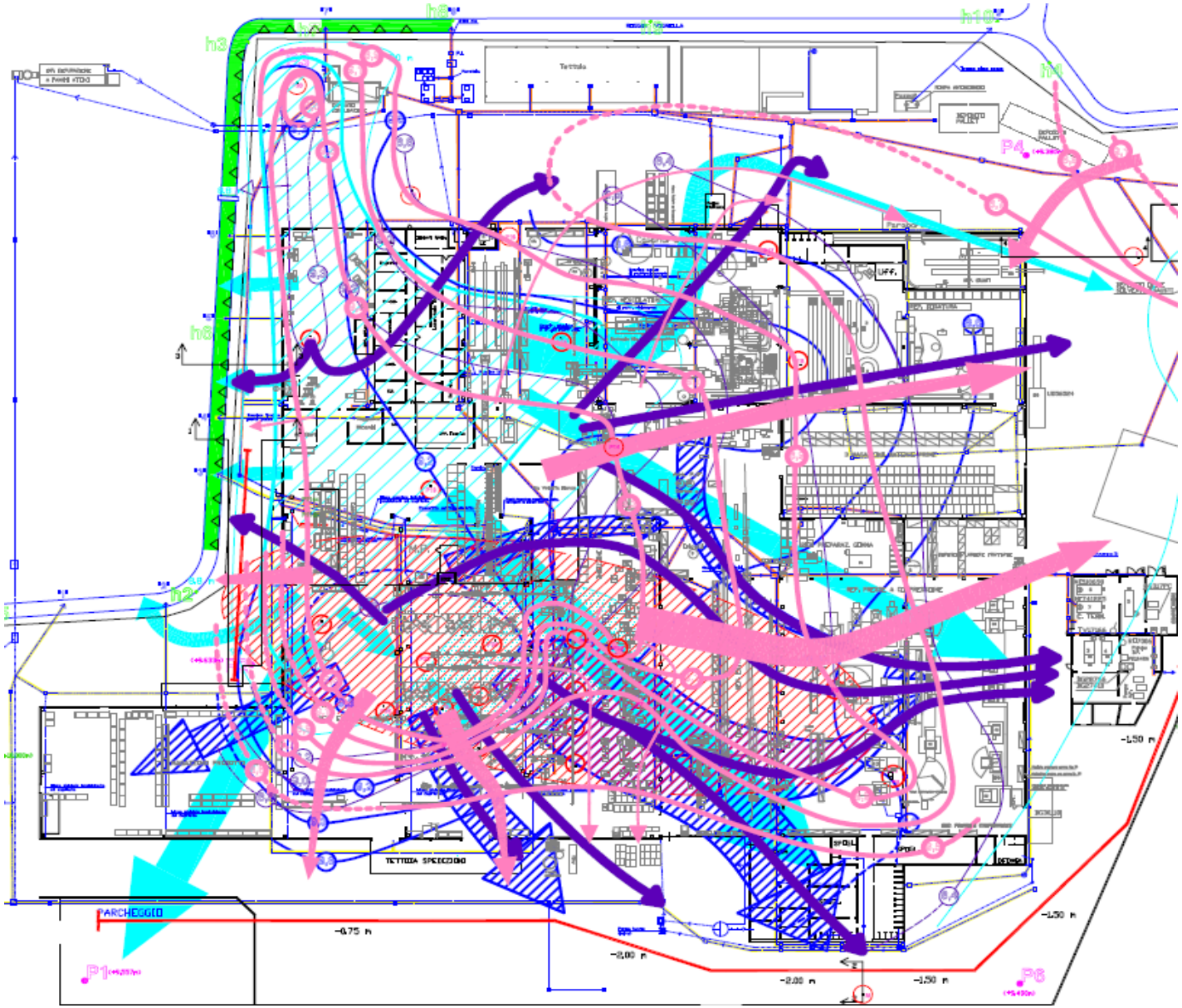
"FIRMANO CLEAN" PROJECT WITH RECLAMATION OF AN AREA WITH 10 LANDFILLS AND 11 QUARRIES: location of landfills and quarries, NATISONE River, protection of the freatic aquifer and river waters at risk of pollution, calculation of the cone of depression of the water table and monitoring with collection of all the contaminated aquifer.



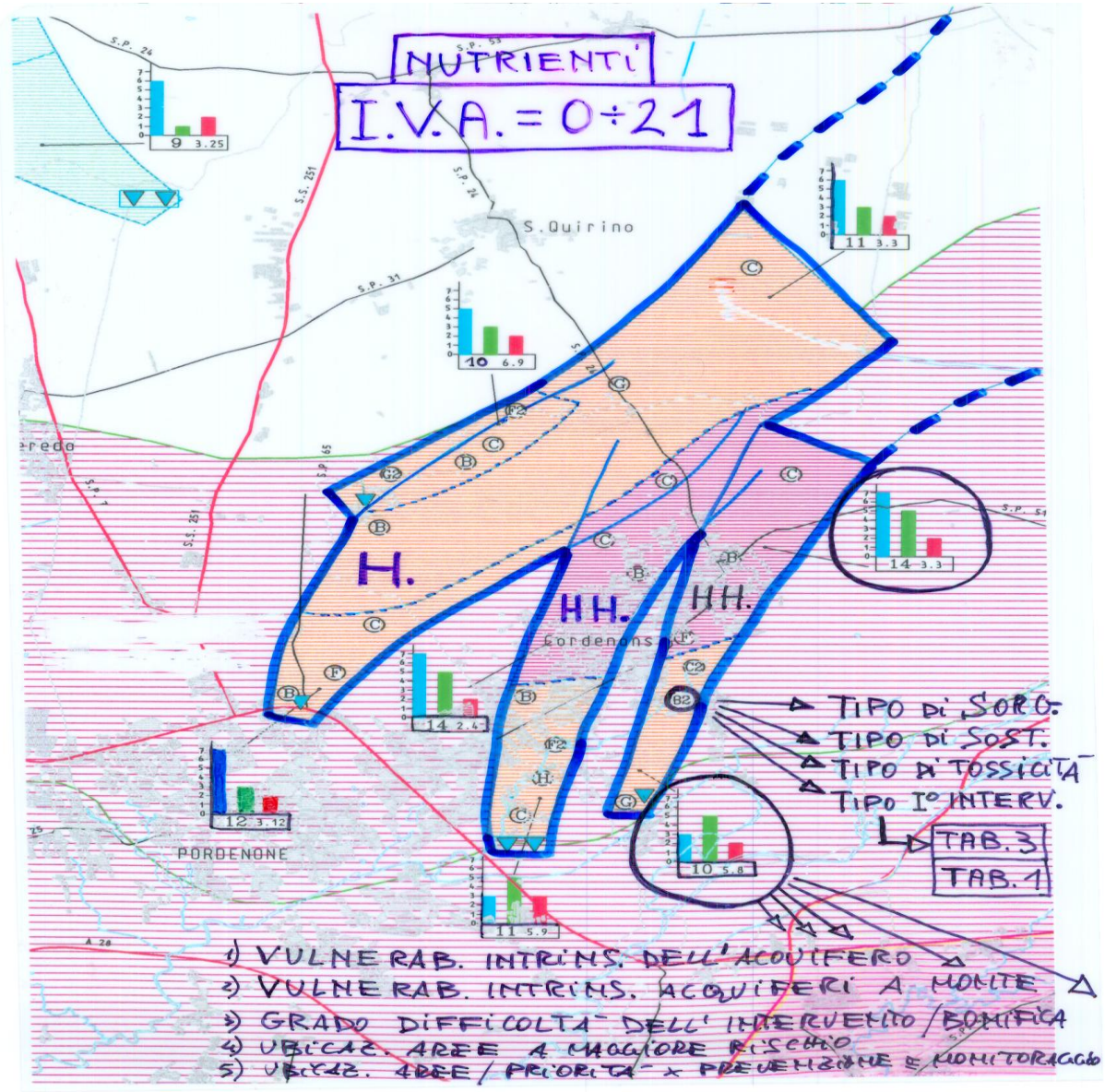


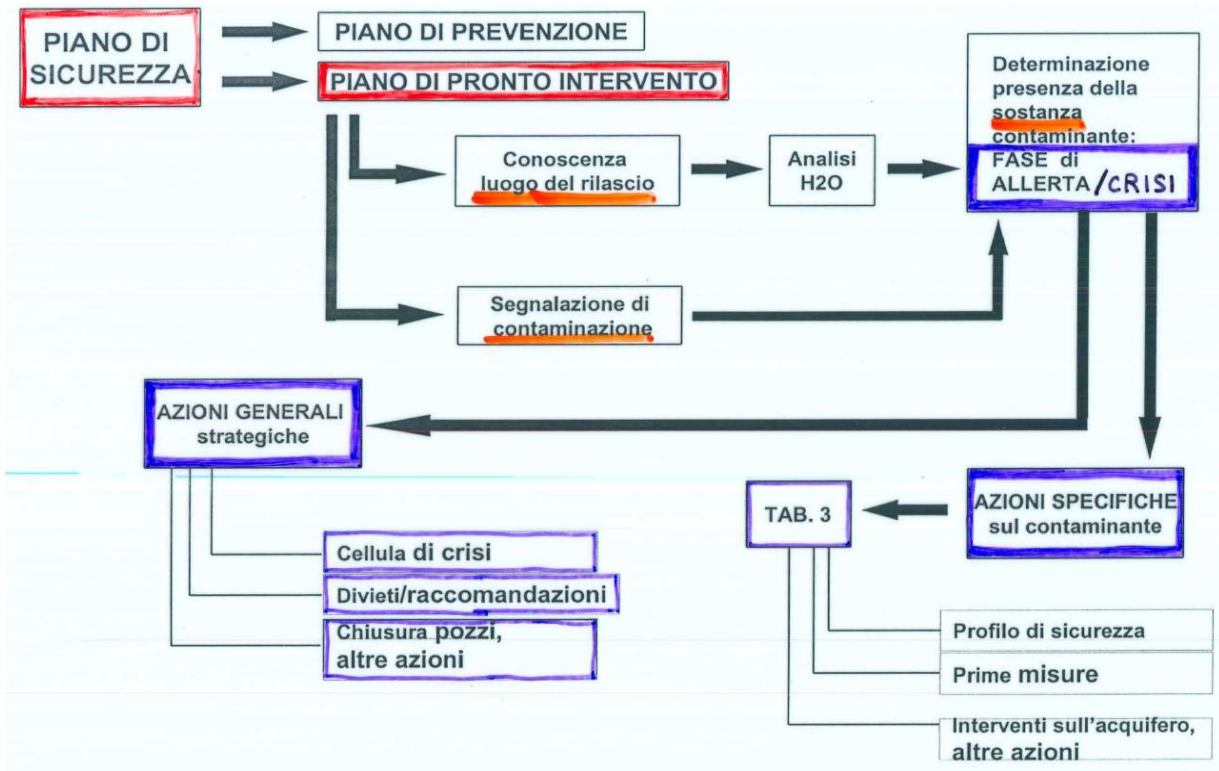
REMEDIATION «INDUSTRIE ILPEA» - ZOPPOLA (Pn): construction of the complex hydrogeological scheme with overlapping layers present under the industrial site (contaminated plume, aquifers monitoring points, suspended freatic aquifer flows, main freatic aquifer and artesian aquifer), piezometric map of flows in full-flood andscarcity water systems, section-type with definition of the remediation project (with hydrodynamic barrier of the canal and physical barrier due to the existing perimeter wall).





Prevention, prompt intervention and safety plan for the protection of the water-bearing strata of the upper and lower Friuli plains of Pordenone: actions against agricultural, urban, industrial, landfills, chemical risk areas, linear structures of contamination along the main road , protection of aquifers and withdrawal wells for drinking and water irrigation.





Some of our Projects & Studies

Fluid dynamic modeling for Hydroelectric Energy and Projects of Ports, Marine and Coastal Areas

Projects aimed at ensuring excellent water quality in ports and marinas, minimizing environmental impacts in coastal areas at risk of erosion and optimizing the performance of hydroelectric plants. Simulation of the hydrodynamic effect of industrial plants with a high environmental impact for the optimization of projects, management strategies, costs, and for obtaining permits.

1 - Defense against coastal erosion of LIGNANO SABBIADORO (Ud): 2D numerical hydrodynamic-sedimentary model for the definition of the strategy and interventions with embankments for the defense against storm surges and coastal erosion for a total length of 6 km.

2 - Foundational project for coastal works in LIGNANO: new pier and lighthouse of Marina Punta Faro, pillars for works and sewer pipes at sea, new cliff at the Foci del Tagliamento at "Camping Pino Mare", completion of the embankment with "Quota 13" in RIVIERA, project of the new embankment of the lagoon in the territory to the north with cycle path.

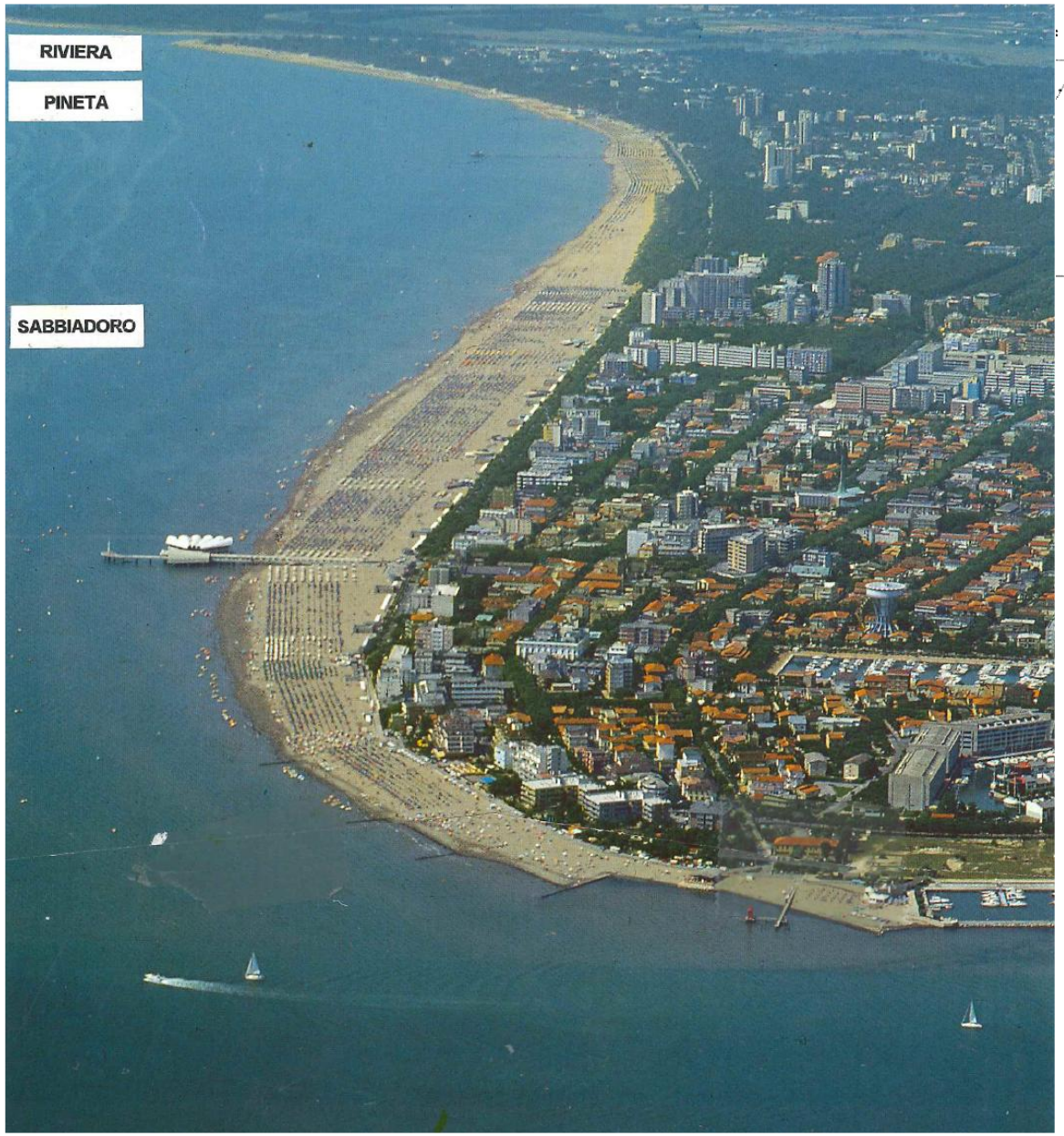
3 - «TORRE» hydroelectric plant (Udine): 3D numerical fluid dynamic model to calculate the criticality of the water flows, of the pressure fields entering the turbine and of the discharge outlet, project of the modifications for the increase of the electrical efficiency and the power plant productivity.

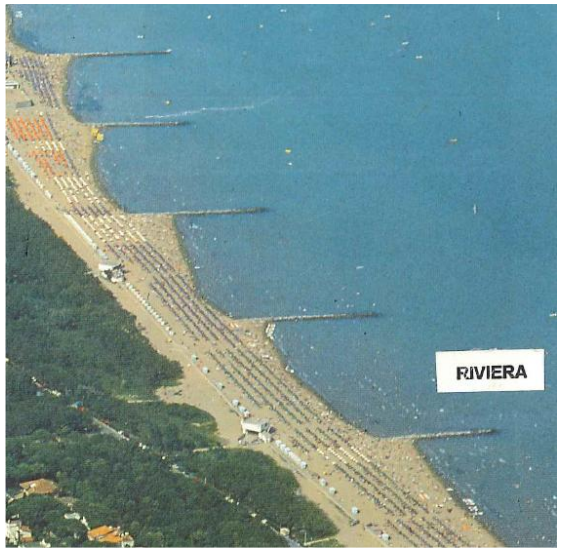
4 - «POZZUOLO» hydroelectric plant: 3D numerical fluid dynamic model for the determination of the criticality of the flow lines entering the turbine, for the design of the modifications aimed at increasing the efficiency and production of the plant. UDINE.

5 - Project of an underwater technological system in the bay on the Adriatic coast: 2D numerical fluid dynamic model, study of the thermal impact on the marine water flows of the bay for the introduction of 500 l / s of water at 23 ° C of the Plant. Definition of the hydro-thermal and geometric design parameters in order to minimize environmental impacts at sea and optimize management procedures and energy costs. ADRIATIC COAST.

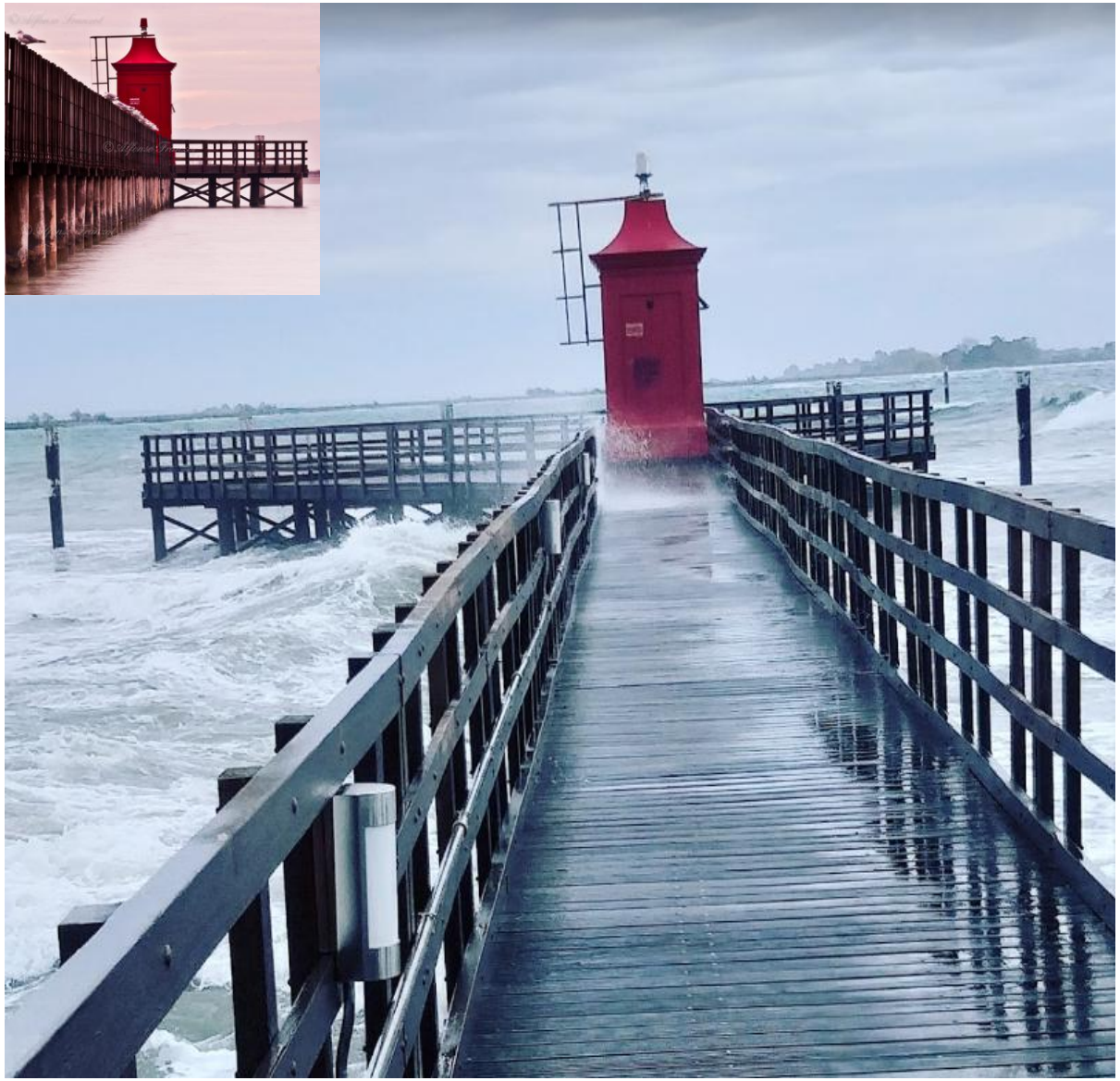
6. Project of a tourist Marina on the Adriatic coast: analysis of the 3D geometry of the Marina with 650 berths, simulations and definition of the thermal impacts on the waters, of the quality and cleanliness of the waters, of the punctual water flows. Simulations for different project solutions, optimal choice of the port project and inland water management. ADRIATIC COAST.

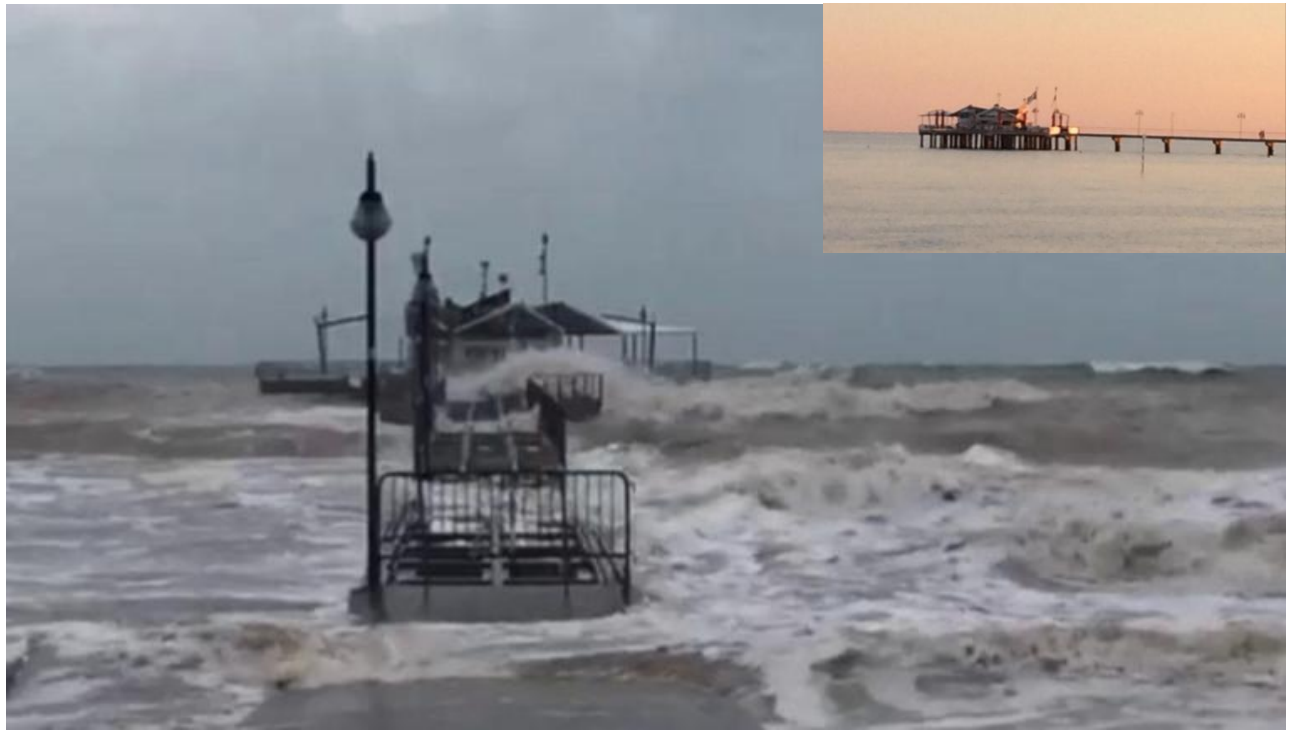
Defense from the coastal erosion of Lignano Sabbiadoro (Ud): total studied area of coast (6km long), erosion area of Marina Punta Faro, intervention areas A - B - C in Riviera, current annual nourishment works by barge and pumping of the sand towards the shore.



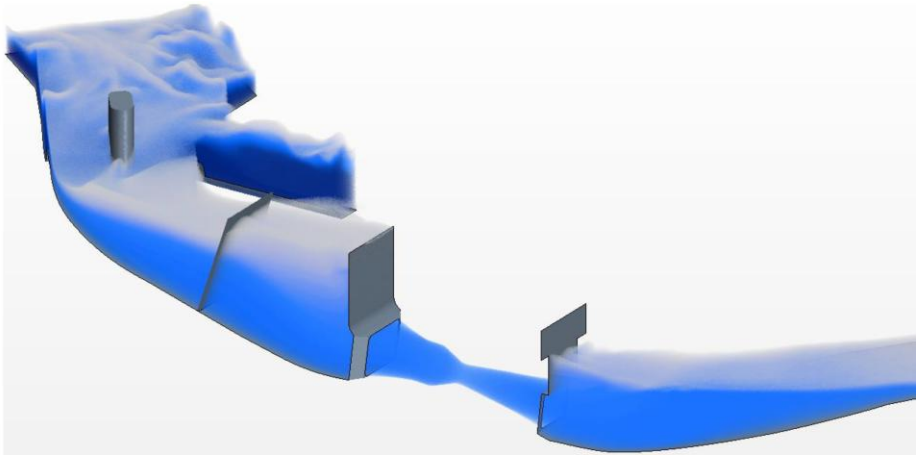


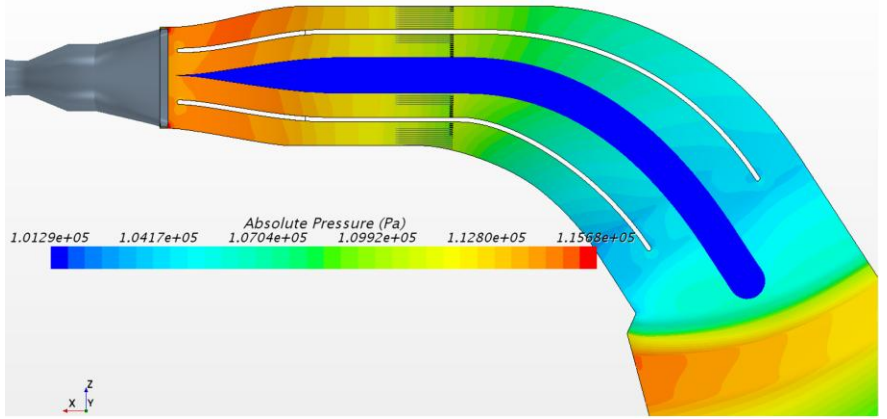
Foundations and protections of works at sea: hydrodynamic calculations of the maximum excavation depth of the wave flow during storm surges, sizing of the pillars and boulders of cliffs in Lignano (Ud). The new RED LIGHTHOUSE, the PIER OF PINETA, the protective cliff at the mouth of the Tagliamento at Camping PINO MARE.



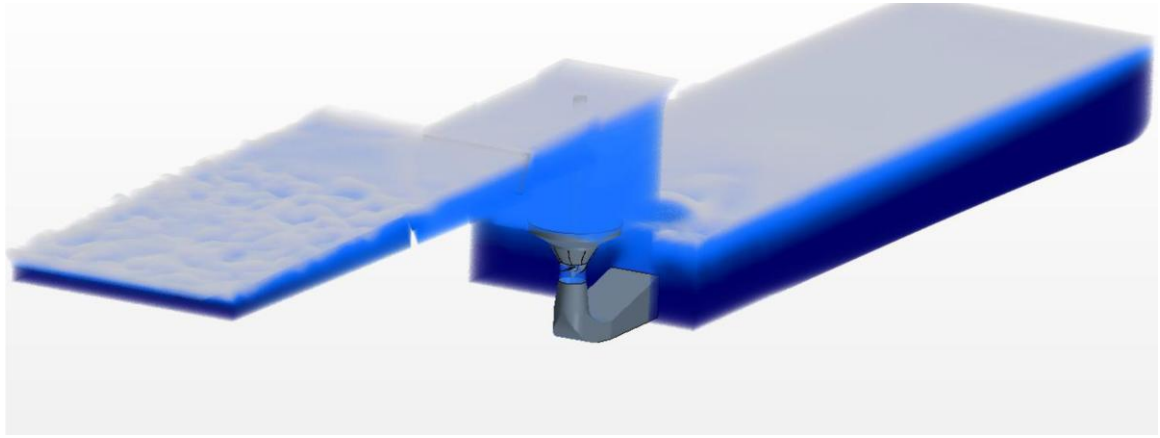


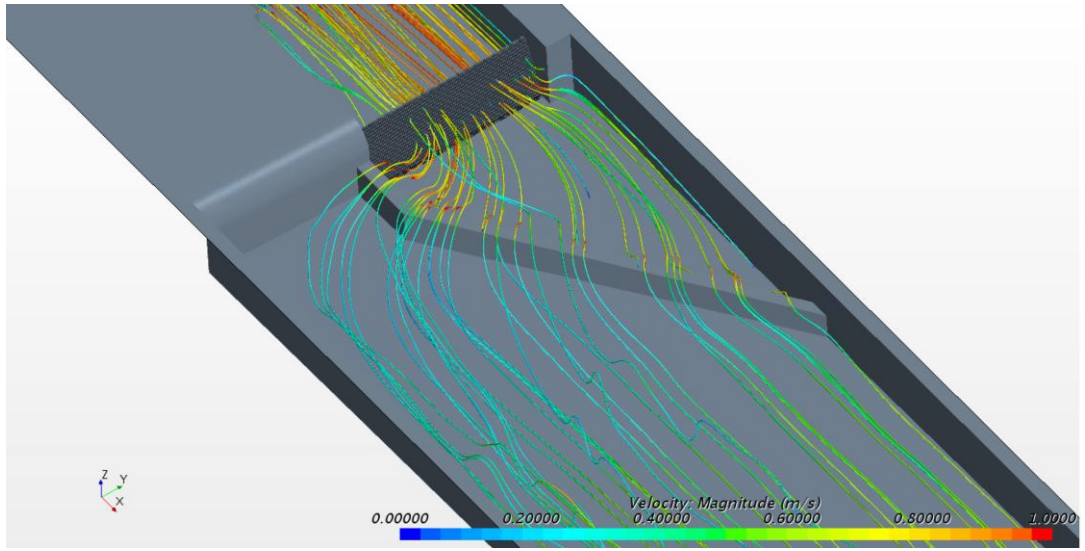
Study of the TORRE (Ud) Hydroelectric plant: numerical fluid dynamic model of the complete plant and pressure range at the turbine inlet.



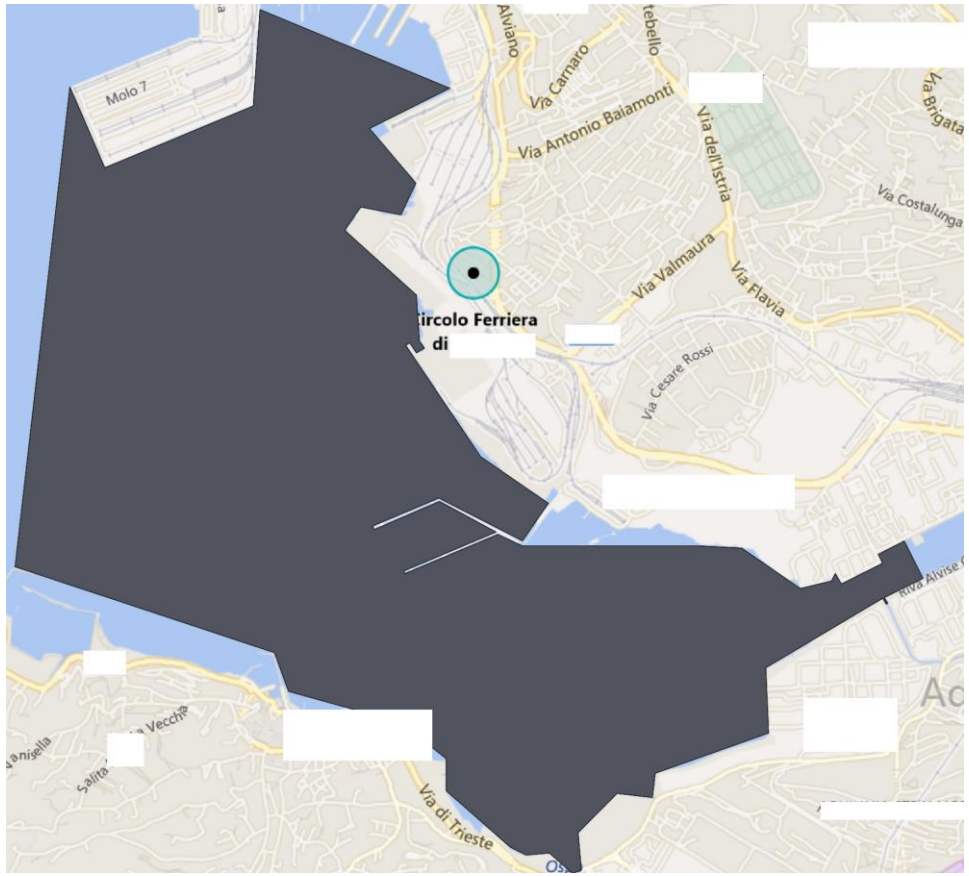


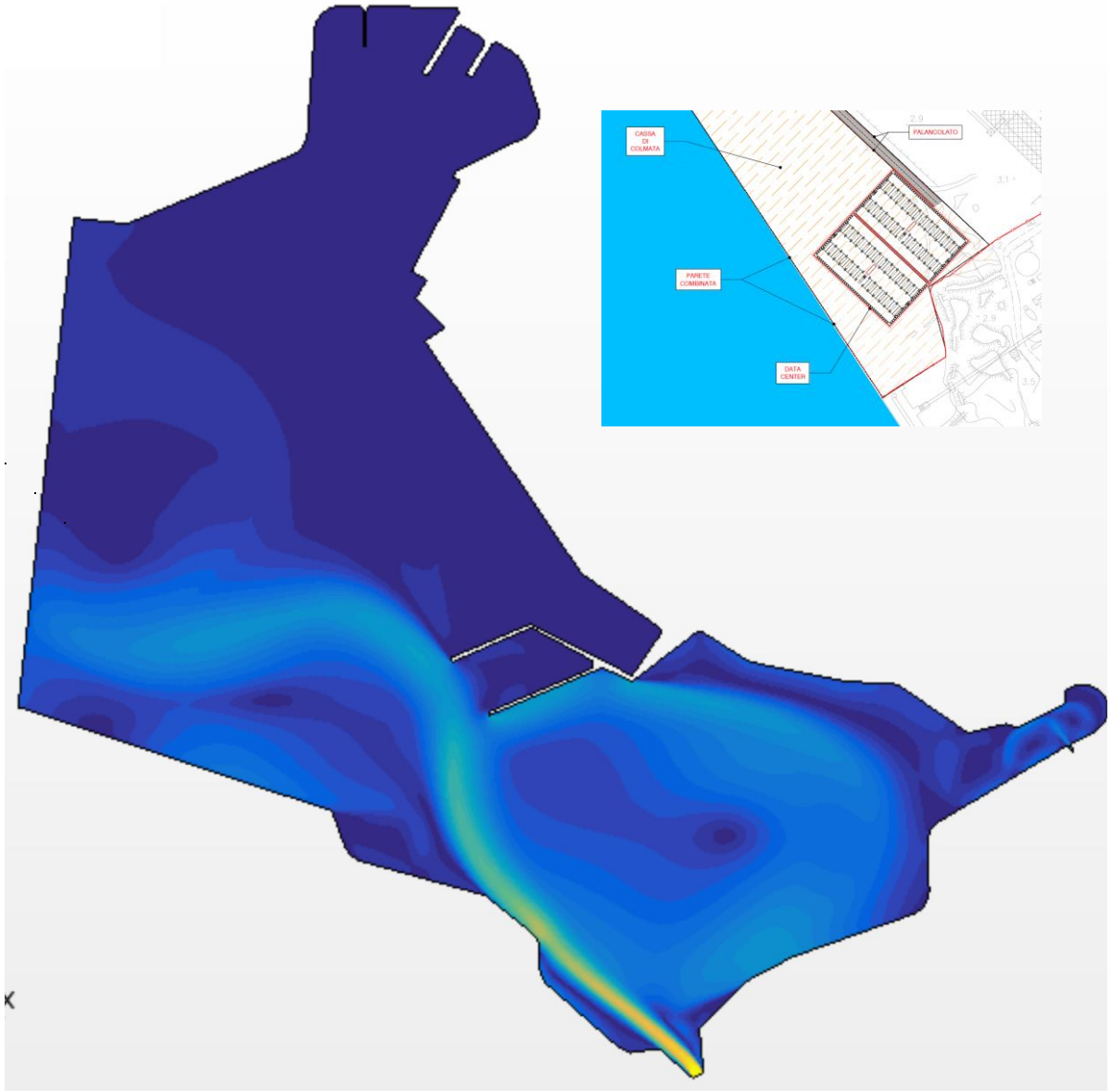
Study of the POZZUOLO (Ud) hydroelectric plant: numerical fluid dynamic model of the plant and flow lines at the turbine inlet (2018-19).





Underwater technological plant in the bay on the Adriatic coast: study of the impact of the industrial plant on the bay, numerical fluid dynamic model, area of the modeled calculation domain, water speed range in the bay for calculation of the thermal variations induced in the bay by the new structure.





Some of our Projects & Studies

Hydrogeological Instability, Environmental Impact Assessments, Construction Management, Special Water Measurements and Inspections

Resolution of river instabilities, punctual and extensive landslides, erosion of marine shores, management of port and marine waters. Environmental (E.I.A.) and Strategic Impact Assessments (S.E.A.), construction site management and Legislative Decree of hydrological and hydrogeological works.

1 – E.I.A .of the Third Highway Lane - Autovie Venete Villesse - Gorizia section: hydro-geological assessment and impacts on surface waters and roads. GORIZIA.

2 – E.I.A.. for the Croatia-Trieste underwater power line (TERNA): evaluation of underwater quality and instability, landscaping and health impacts, fishing, electromagnetic,navigation, accidents and breakages, construction phases. TRIESTE.

3 - E.I.A. of the ESSELUNGA project in Legnano: hydro-geological impacts of the OLONA River on the site of the Ex Cotton Mill Cantoni in LEGNANO (Milan).

4 - TESSINA landslide - S. Croce lake and Mount Teverone: monitoring, hydrogeological study, calculation of project solutions for the landslide remediation (12.000.000mc),drainage tunnel in the massif, diameter 2.5m, sampling 500 l / s, drainage of the limestone massif of M. Teverone, hydroelectric and drinking water use ALPAGO (Belluno).

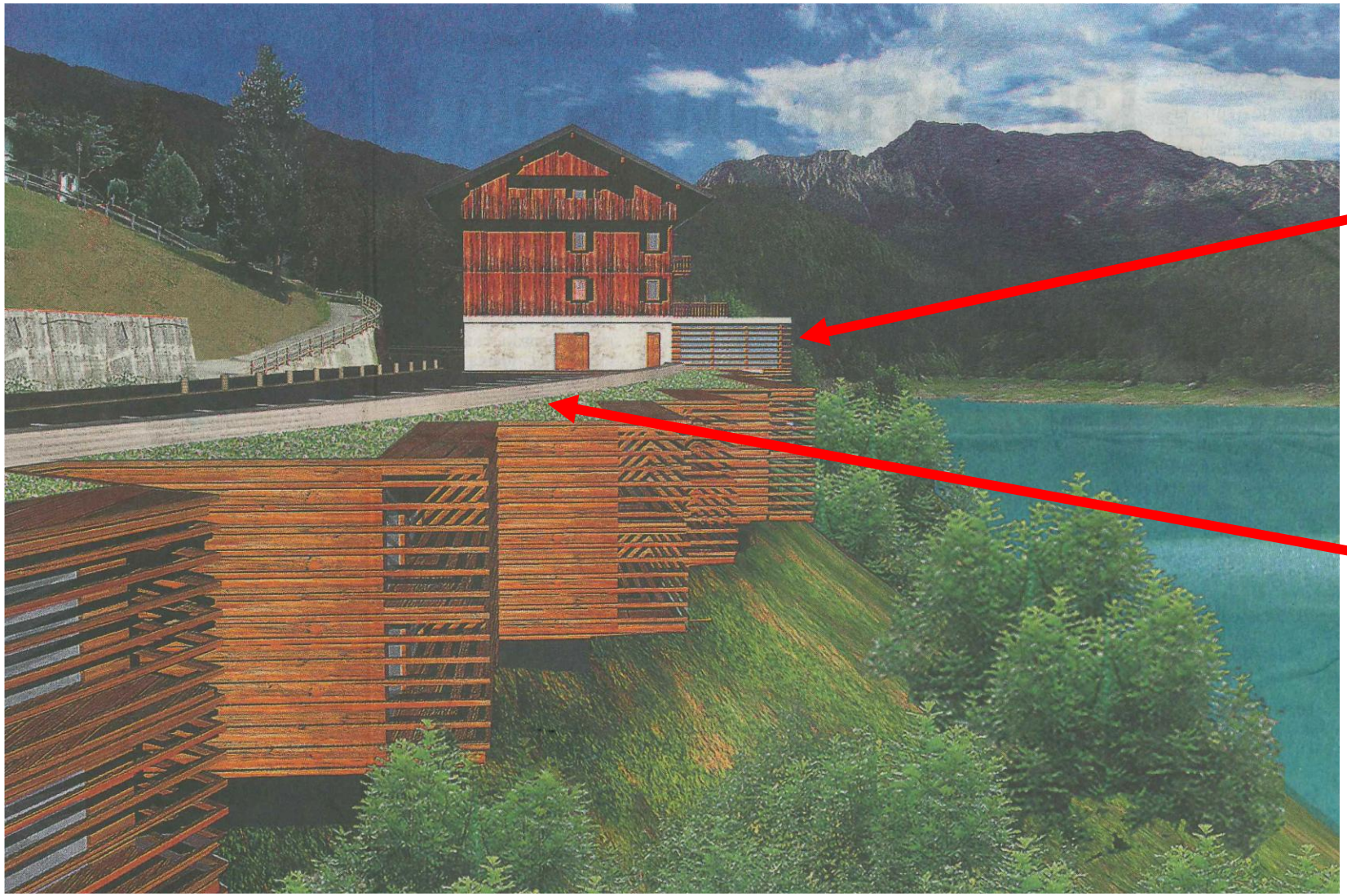
5 - Dissesment and flooding of the Park Candiani and Oberdan construction site in PORDENONE: analysis of the stability of the neighboring apartment buildings, video inspections and hydrodynamic tests in the 10 defective water drainage wells in the excavation on site, quantitative hydrogeological study, new drainage project, CTP in the legal dispute for the Municipality of PORDENONE.

6 - Landslides and mountain defense for the ski areas of PONTEBBA-NASSFELDPASS PRAMOLLO and the «High Links» of TARVISIO: Geological, hydrogeological and geostatic study, environmental analysis, technical-economic analysis of the interventions, study of alternatives and economic feasibility. (Province of UDINE-CTS).

7 - Landslide RUF DE VAEL - Val di Fassa: hydrogeological and geostatic study, collapse prevention works, overflow of the river, debris-flow and movement of two landslides currently at risk of collapse and invasion of the town at the bottom of the valley (5.000.000mc) . VIGO DI FASSA (Trento).

8 - Urgent Civil Protection interventions for extreme weather events of the storm VAIA 2018: hydrological-hydrogeological and hydraulic-river study, project parameters ofthe hydraulic-river works, excavations in the riverbed and banks for the recovery of the affected sites (21 sites in 4 municipalities of the Valli del Natisone, amount € 2.1m),Study of environmental impacts. S. LEONARDO (Udine).

Geognostic-geophysical investigation and hydrogeological-geotechnical study for the construction of the Hotel "LA NUOVA MAINA" - SAURIS (Ud). Geotechnical hydrogeological study to define and size the type of foundations of a building in a challenging mountain environment, "cantilevered terrece" on Lake Sauris and on a steep rocky slope.



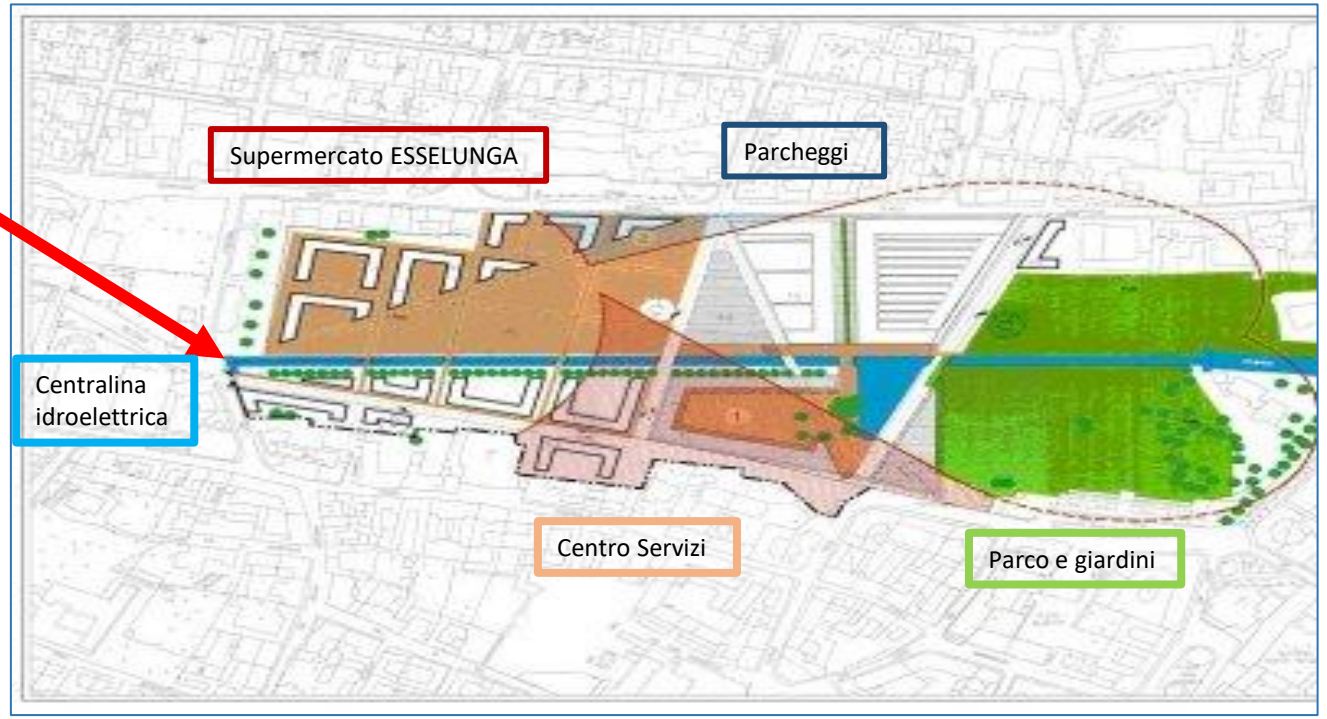
Avalanche protection nets on M. COLOVRAT in DRENCHIA (Ud): Avalanche, hydrogeological-geostatic and environmental study (testing phase of break rods with hydraulic jack, amount € 0.9 million).

Landslide of BRIZZA (Savogna - Ud): Hydrogeological-geostatic study and geoelectric surveys for the project of arrangement of a landslide in fractured limestone and with "furrowed fields" at the top of the slope (phase of the realization of the electrical surveys on the slope on the landslide, amount €0.3 million).

Disessment flooding of the sites of Park Candiani and Park Oberdan of PORDENONE: hydrogeological study, definition of the causes and solutions, CTP in defense of the Municipality of Pordenone in the legal procedure for construction defects of the 10 groundwater drainage wells, geostatic investigations on neighboring apartment buildings, hydrogeological tests and video inspections in the well, definition of the corrective works necessary to build the parking (parking works amount € 7 million).

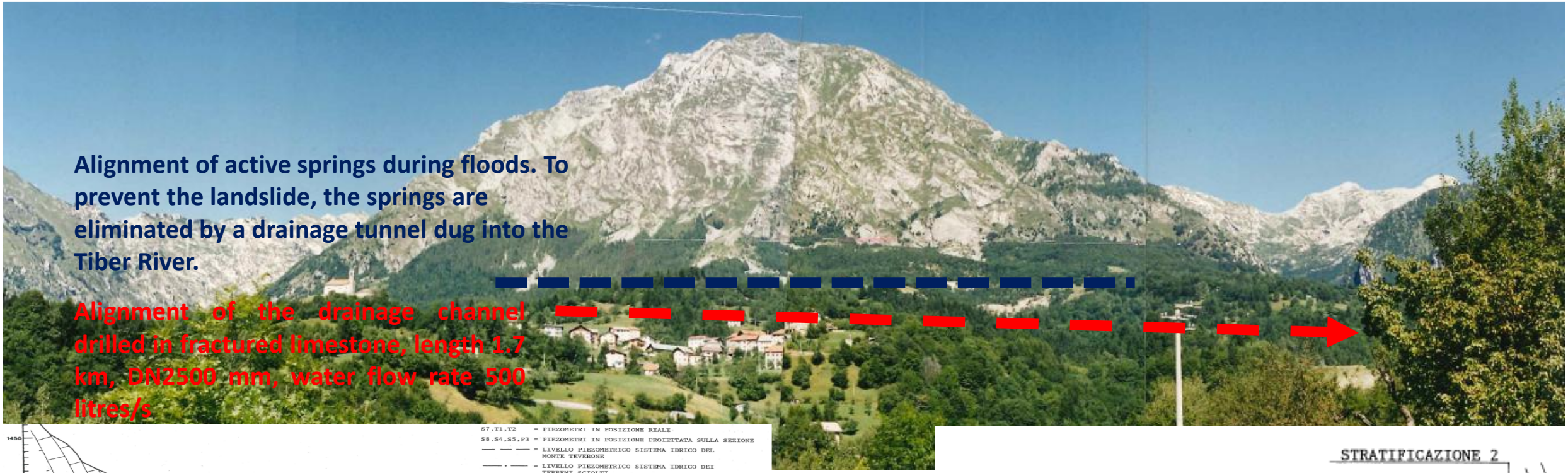
Elimination of significant landslides and fluvial instabilities: ridge and floodable area of SCRUTTO-Ud (amount € 2.2 million), storm over the Rio Terre Rosse basin (DOGNA-Ud), Ruf de Vael landslide in VIGO DI FASSA-Tn (5,000 .000 mc), SACROVINT landslide in FORNI-Ud (amount € 0.2 million), drainage of the flooded construction site "Condominio S. GIORGIO" (Pn)).

E.I.A. for the ESSELUNGA shopping center in LEGNANO (Milano): environmental study for the demolition of the ex-cotton mill Cantoni. Hydrological study with the elimination of the risk of flooding, the pollution of the OLONA River with the "black waters" coming from the Varese textile industry area and for the 40 KW hydroelectric station. Hydrogeological study for the protection of drinking water tables.



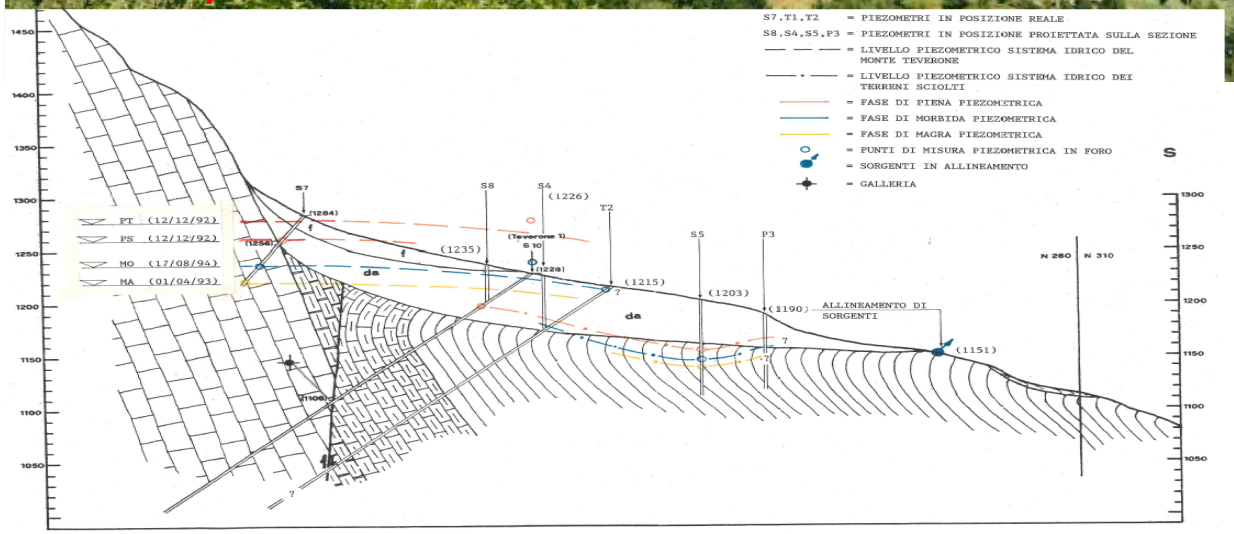
Study of river floods and project of interventions against river floods: prevention of the extreme flood of the River TAGLIAMENTO with comparative parameter the millennial flood of 1966 in the Municipalities of OSOPPO, GEMONA, BORDANO, TRASAGHIS, VENZONE (Ud). Interventions against the bank erosion on the right of F. ALBERONE in SAVOGNA (Udine), bank failure in the area of MALBORGHETTO (Udine).

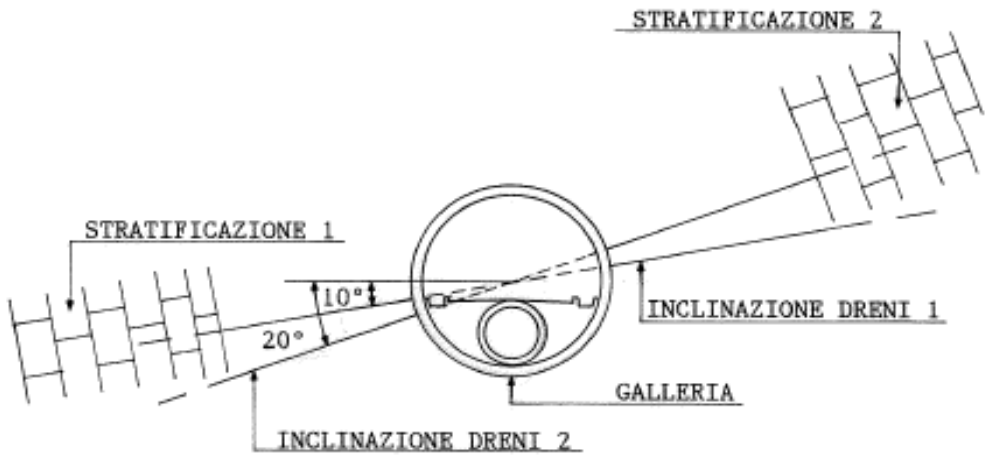
Landslide of TESSINA-Lake of S. Croce, Monte TEVERONE: during the very rainy periods the high villages of the ALPAGO slowly slide downstream because the waters coming from an alignment of springs at altitude present halfway up the TEVERONE coast. The solution is the drilling of a tunnel with sub-horizontal lateral drains in the fractured limestone massif to lower the flood piezometric line. The figure shows the tunnel inserted in M. TEVERONE for the drainage of the waters which are finally collected and used both for a hydroelectric power plant and to give drinking water to the villages.



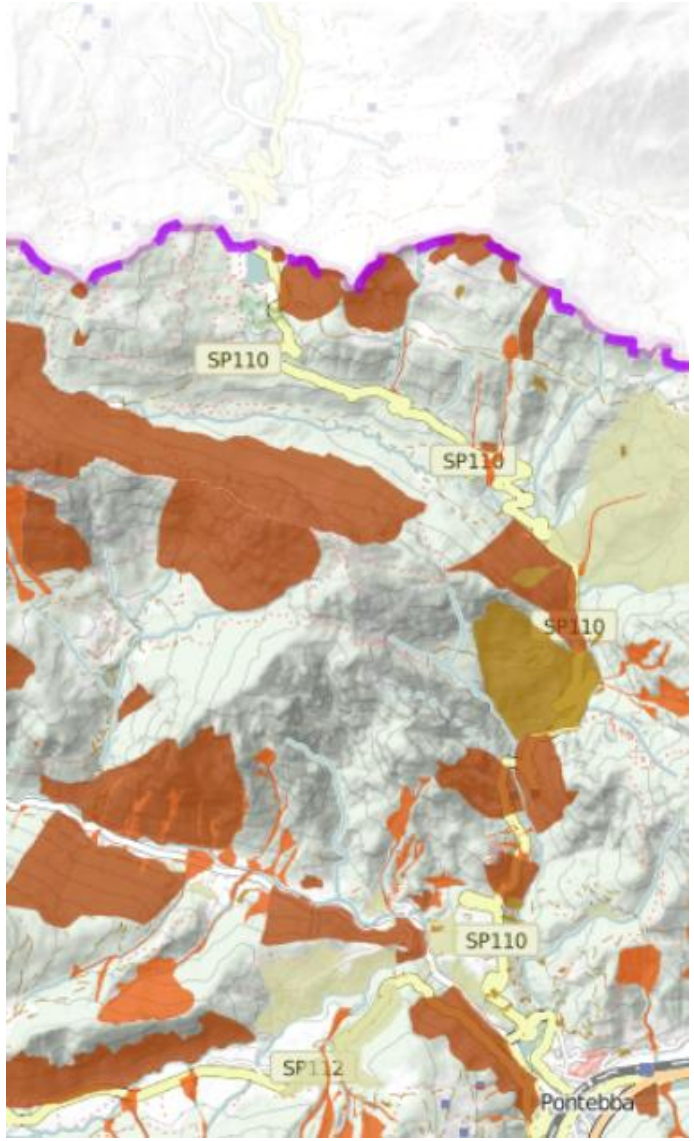
Alignment of active springs during floods. To prevent the landslide, the springs are eliminated by a drainage tunnel dug into the Tiber River.

Alignment of the drainage channel drilled in fractured limestone, length 1.7 km, DN2500 mm, water flow rate 500 litres/s



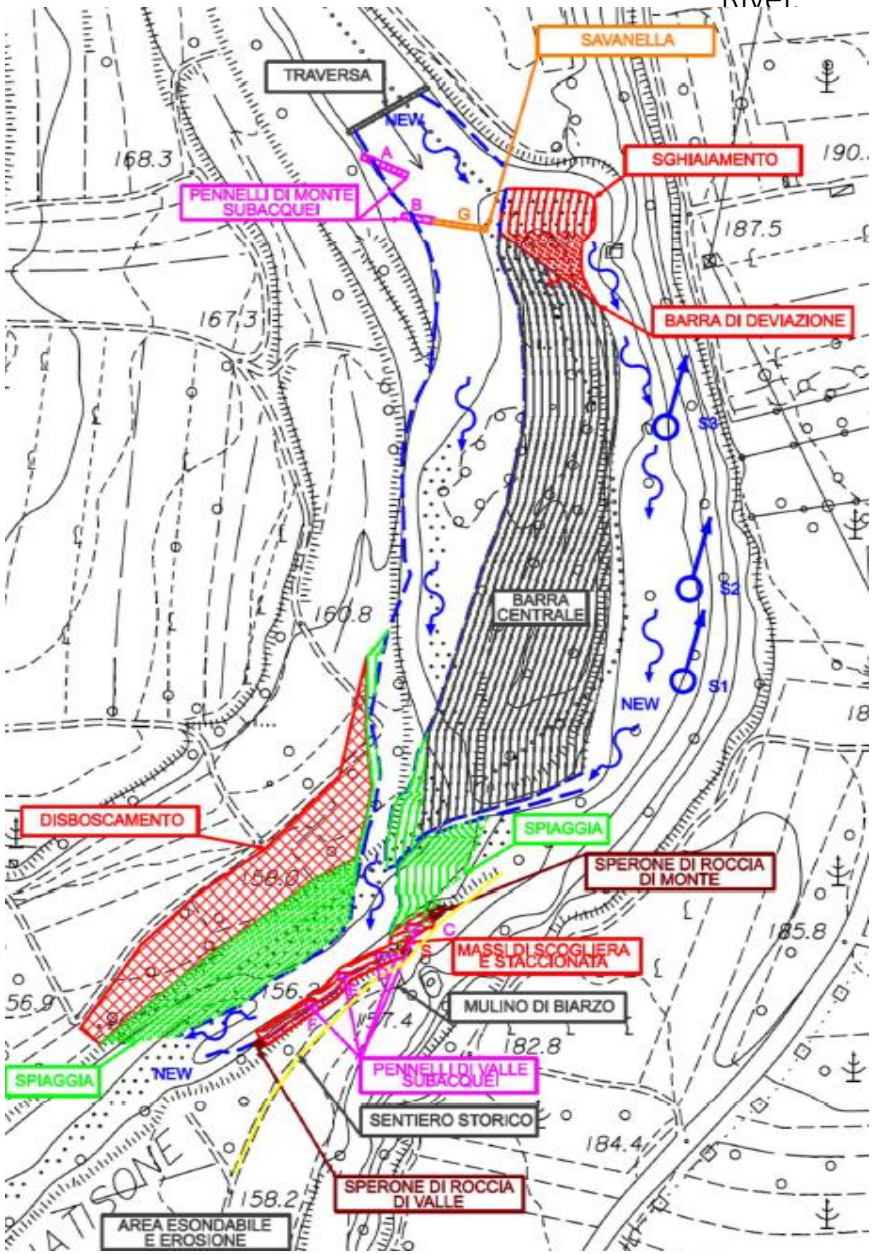


Landslides and mountain defense for the connection from PONTEBBA to the NASSFELDPASS PASSO PRAMOLLO ski area: Geological, hydrogeological and geostatic study, technical-economic analysis of the interventions and alternatives, technical-economic feasibility of the solutions for the project of the connections with the study of the solution through cogwheel train from STUDENA and the cable car on three pillars from PONTEBBA station (Province of UDINE, 2007).



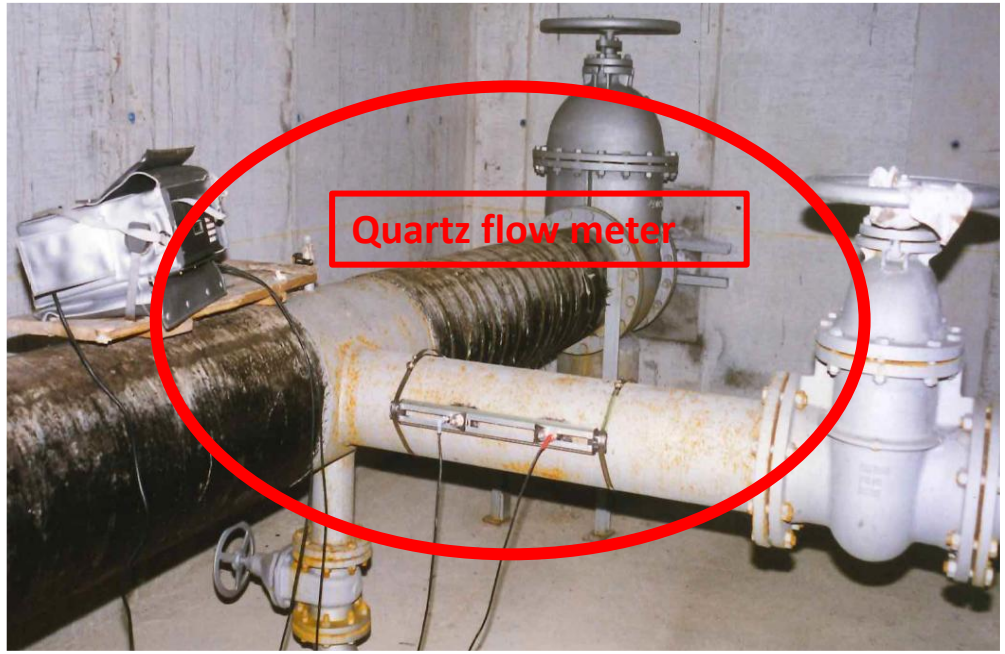
Ski development strategy, location of slopes and lifts, mountain defense works for the TARVISIO «High Links» skiing area: geological, hydrogeological and environmental analysis, technical-economic analysis of the interventions, study of alternatives and prescriptions for the realization of the "High Links". (CTS – Province of UDINE)

Urgent Civil Protection interventions for extreme weather events of the storm VAIA 2018 - VALLI DEL NATISONE: E.I.A., Hydrological-hydrogeological and hydraulic-river study, parameters for landslide remediation works, river instabilities and embankments on 21 sites at risk (Municipalities of S. Leonardo, S. Pietro, Pulfero, Savogna - amount € 2.1m) - In the photo the valley of M. Matajur (Udine) and the scheme of interventions at the site "Mulino di BIARZO" on the NATISONE River



Measurements, analysis, special on-site water inspections: flow measurements at the "ARZENTON" fish factory in PORPETTO (Ud), well inspections for stop of work on site and failures in CARPENETO (Udine), geoelectric surveys for water research in an extreme mountain environment (landslide of BRIZZA - Udine), inspection and well measurements at the RSU MIDOLINI landfill (Udine),

Special on-site water measurements and inspections: flow measurements with quartz probe on pressurized pipes of hydroelectric power plants and aqueducts (M.G GORIZIA), flow measurements with reel and study with Roberto MAIER for plant variants for increasing hydroelectric production at the Weissenfels-FUSINE power plant, groundwater piezometric measurements at the Nuova Azzurro - OSOPPO (Udine) fish farm, sub-horizontal piezometers drilling (TORRE sources - MUSI).



Some of our Projects & Studies

Consultancy for Courts, Legal Offices, Economic and Business Analysis

Legal advice on water, renewable energy, and the environment, including expert witnesses and technical consultants for the Courts of Udine and Ancona, economic and business feasibility studies for investments in renewable energy (RES), water and environmental projects, drafting regulations and standards for water and water resources, and due diligence for water and environmental projects for entrepreneurs, banks, funds, financial institutions, and insurance companies.

1 – Romanello Landfill Technical Consultant: hydrogeological study, on-site surveys and piezometers, analytical model predicting the evolution of ammonia and manganese contamination present in drinking water, legal analysis and parameters for the remediation project. UDINE. (2008).

2 – Due Diligence: Tarvisio ski area facilities (low and high connections): project integrations with the "High Connections", hydrogeological study of the project and economic-financial feasibility for the Province of UDINE (amount €12 million). TARVISIO (Udine). (2003).

3 – CTP Hydroelectric power station «Ponte degli Alpini di Bassano»: substantial variations and observations to the project, analysis and quantification of the elements of hydrogeological risk and impending collapses on Via Pusterla and the hill of the Ezzedini Castle of BASSANO DEL GRAPPA (Treviso). (2016).

4 – CTP «Discarica Bergantino»: observations on the project for a landfill (900,000 m3) of asbestos in an area at risk for health, hydrogeological reasons for the groundwater and fluvial risks due to the proximity of the River Po. BERGANTINO (Rovigo). (2014-15).

5 – Due Diligence for a geothermal-thermal system for hospitals: geothermal study and technical-economic feasibility analysis of an electric-thermal and thermal geothermal system for the LATISANA (UDINE) hospital and the Pederzoli hospital in PESCHIERA DEL GARDA (VERONA). (2013).

6 – Due Diligence for the management of geothermal and hydroelectric renewable energy sources at the «PALAIS LUMIERE»: technical-economic analysis and environmental impacts of the project, feasibility analysis for accreditation of auditing firms for investment funds. PORTO MARGHERA (Venezia). (2014-16).

7 – Economic Analysis and Due Diligence of the Geothermal System at IKEA-Villesse and the TIARE Shopping Center: Geothermal study and technical-economic feasibility analysis of a geothermal system for 100% self-sufficiency in heating and cooling (160,000 m3). VILLESSE (GORIZIA) (2015-19).

Some of our Projects & Studies

New regulations, advanced technologies, Patents

Drafting of regulations and regulations for the monitoring of decision-making, the protection of water from pollution, the management of serious water drinking crises, and of hydrogeological instability. Study of advanced technologies and methods for the simulation and prediction of water phenomena. We are owners of patents for groundwater decontamination plants, advanced production of zero impact renewable energy and green hydrogen.

1 - DROLI-VIVIAN METHOD: procedure with minimum and priority environmental impact for the location of sites suitable for the construction of landfills**.**

2 - NEW RULES FOR THE MANAGEMENT OF LANDFILLS AND WASTE (for Legislative Decree 36/2003): impacts, directives and hydrogeological prescriptions for the protection of groundwater (National Working Group of Prof. COSSU - Abano - Padua).

3 - DIRECTIVE FOR THE QUALITY CERTIFICATION OF HYDRO-DRINKABLE AQUIFERS: hydrogeological directives and prescriptions for the management of water reserves and groundwater intended for withdrawals through wells for drinking water and springs (Group of Prof. COLLIVIGNARELLI - University of BRESCIA).

4 - "VATT - WATER CRISIS MANAGEMENT" METHOD: hydrogeological-numerical method with the coupling of the temporal criterion, GIS mapping, intervention protocol for the protection of drinking and irrigation water against serious water crises. (DROLI method for the Court of UDINE, Aqueduct and S.I.I.).

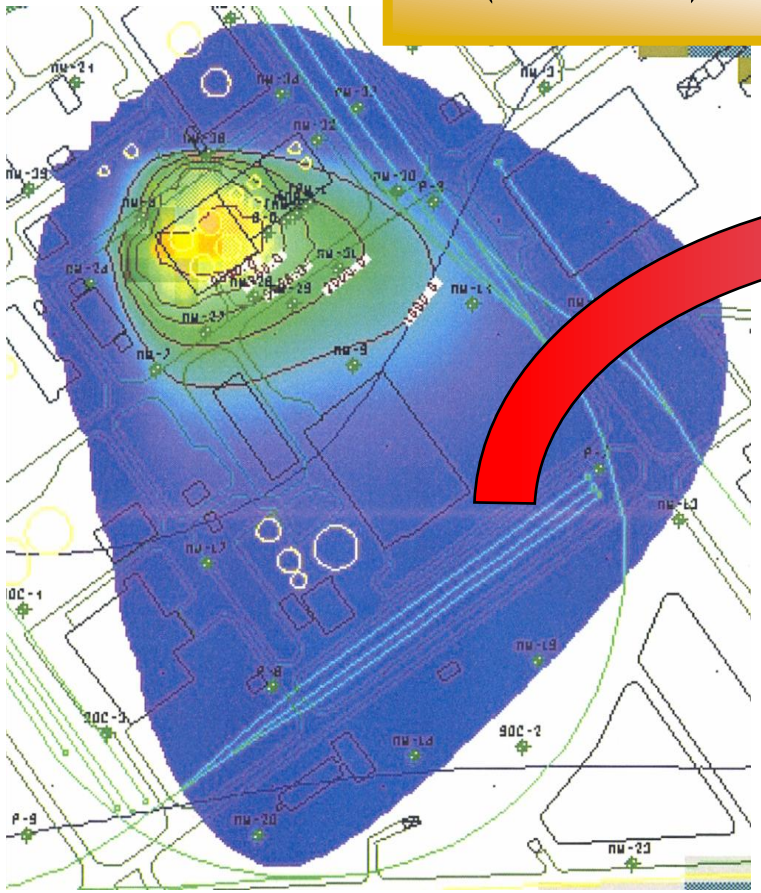
5 - «ALL RISK» GUARANTEE FOR THE MONITORING OF 100% POLLUTED GROUNDS: it guarantees 100% monitoring of all the plume of a polluted aquifer and the total block of its diffusion-dispersion downstream. (DROLI method for the Court of UDINE, LOMBARDY Region, aqueduct operators, Anti-pollution insurance and litigation on environmental disasters).

6 - «FLPS-ANNSCA» PATENT: (DROLI is ANNSCA partner) technology and laboratory tests for the protection of drinking and irrigated aquifers against unwanted fluids from fracking, finding in the aquifer, collection and disposal. SYDNEY (Australia).

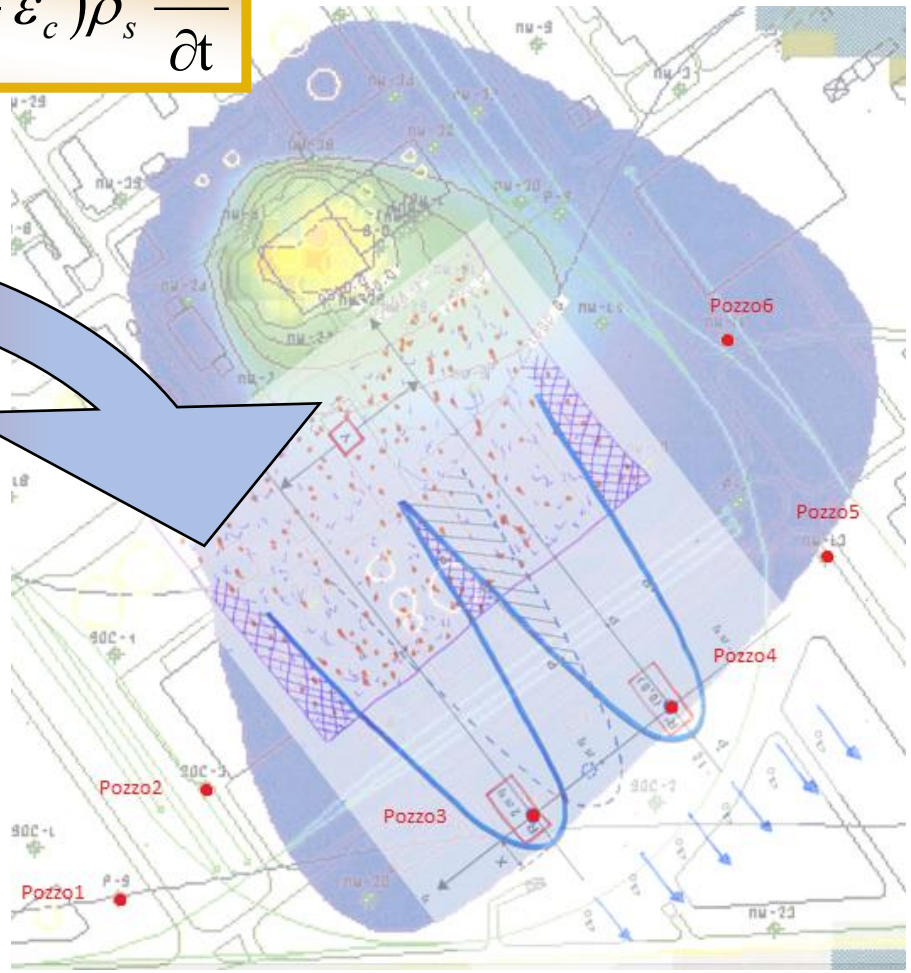
7 - «WAPPS-ANNSCA» PATENT: (DROLI is ANNSCA partner) technology, laboratory tests and construction of an active pilot plant for the collection of unwanted toxic gases in deep wells. The WAPPS is applied to oil-gas, geothermal wells and drinking wells damaged or under construction and is aimed at the protection of water-drinking or at risk aquifers (project amount € 2.5 million). SYDNEY (Australia)**.**

"ALL RISK" GUARANTEE FOR THE MONITORING OF POLLUTED GROUNDS: after the location of the polluted plume, it is calculated how to monitor the aquifer with piezometers, to calculate the actions to perfectly purify the aquifer with sampling wells and pump & treat. The method guarantees 100% both perfect monitoring and clean-up of all polluted plume with total blocking of downstream diffusion-dispersion. (DROLI method for the Court of UDINE, LOMBARDY Region,aqueduct operators, Anti-pollution insurance).

$$div\left(\overline{\overline{D}}\,\overrightarrow{grad}C\right) - div\left(\vec{v}C\right) = \varepsilon_c \frac{\partial c}{\partial t} + \left(1-\varepsilon_c\right)\rho_s \frac{\partial F}{\partial t}$$

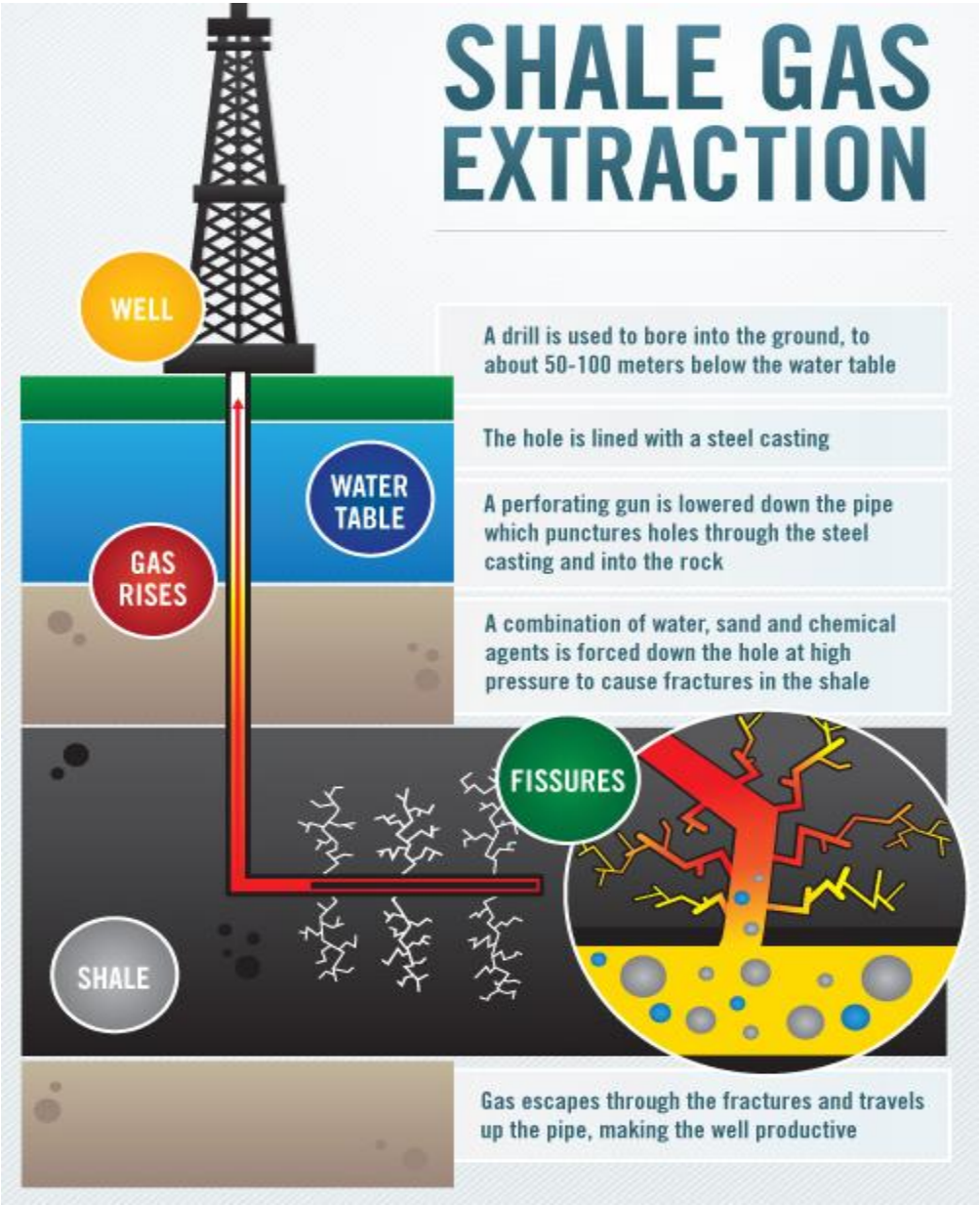


Polluted Aquifer



Remediated Aquifer

FLPS-ANNSCA patent: fracking leakage prevention system. Technology and laboratory tests for the protection of drinking and irrigated aquifers against unwanted fluids from fracking, found in the aquifer, collection and disposal. Patent no. AU2014901918. (SYDNEY - Australia.



WAPPS-ANNSCA patent: water air pollution prevention system. System for the collection of toxic or unwanted gases emitted from oil wells, geothermal, drinking water damaged or defective. WIPO Patent, Pub.No. WO / 2015176139. AusPat-Australian Government: 2015263771, Filing date 22/05/2015. European Patent Register: EP3146147. Well drilling DN = 1100 for WAPPS insertion, inserted WAPPS modules, CO2 load in the well for chemical tests with 97% efficacy.

News & Special Projects

1 - HIGH SPEED railway line "VARIANTE EMILIANA" (1993): hydrogeological study on aquifers, water sources, recharge of mineral and thermal waters.

2 - Management of the acute phase of the "ATRAZINE CRISIS" (97-99): resolution of pollution in the drinking artesian layers of the Friuli V. Giulia plain.

3 – PORDENONE PROVINCE PLAN FOR THE PREVENTION OF DRINKING WATER CRISES: prevention and emergency response actions, management of serious water crises, protection of the aquifers of the Friuli plain (1998).

4 - FRIULI VENEZIA GIULIA WATER PROTECTION PLAN (2006-08): Coordinator of the macroarea «Ground and Surface Water» - (2008).

5 - PROTECTION FROM MARINE WATER POLLUTION IN PORT AND HIGH NAVAL TRAFFIC AREAS (2009): general strategic plan.

6 - PALAIS LUMIERE - Porto Marghera - Venice (2014-16): hydrogeological and geothermal study for the design of the geothermal-electric and thermal plant.

7 – "NEW ROME STADIUM" (2016-17): hydrogeological and geothermal study for the heat-cold thermal energy self-sufficiency of the plant.

8 - "UDINE TOWN OF WATER" (2023): study for the urban enhancement of UDINE waters (irrigation ditches, fountains, wells, mills, geothermal energy).

9 - GEOTHERMAL-ELECTRIC AND BIOMASS POWER PLANT "M.G." in Curitiba: Technical-economic study, urban waste management and reuse plan, alternative analyses and impacts for a 2.2 MWel biomass and geothermal power plant for 2,000,000 inhabitants - S.Josè in Curitiba (Brazil). (2017).

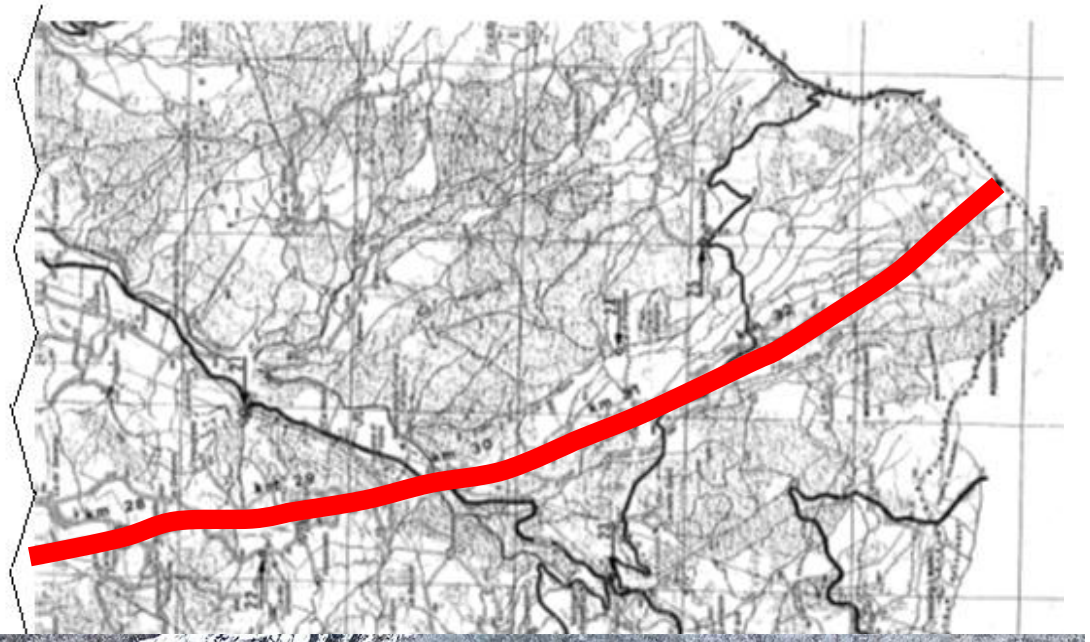
10 - «THE HYDROGEOLOGICAL TREASURE OF THE VALLEYS OF NATISONE» (2020): pilot basin-slope to predict water crises and manage waters in alpine areas.

11 – «IL TESORO IDROGEOLOGICO DELLE VALLI DEL NATISONE»: bacino-versante pilota per ricerche scientifiche e tecniche, previsione delle crisi idriche, dissesti idrogeologici, gestione ottimale delle acque e del servizio idrico pubblico in aree prealpine «difficili», gestione dei fiumi e balneabilità. (2018-ongoing).

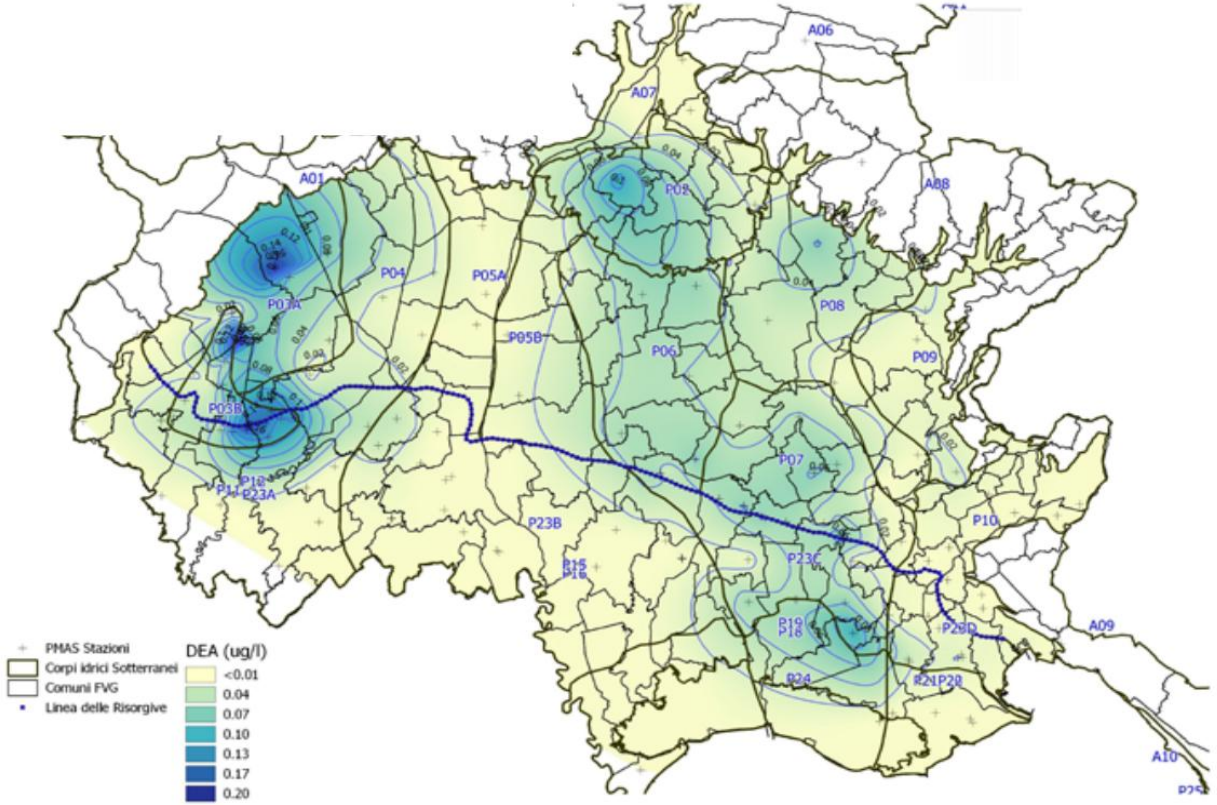
12 - REMEDIATION OF PFAS-POLLUTED GROUNDWATER at the former MITENI and former RIMAR sites in TRISSINO (Vicenza) : Hydrogeologist for the R.U.P. for site remediation. Hydrogeological study of PFAS transport, verification of projects submitted by ICI3 and of the hydrogeological-numerical model, piezometries, MISO and Remediation. Proposals by the R.U.P. at Service Conferences, groundwater management, coordination with the VENETO Region, ARPAV, the Province of VICENZA, the Civil Engineering Department, and public bodies (2019-ongoing).

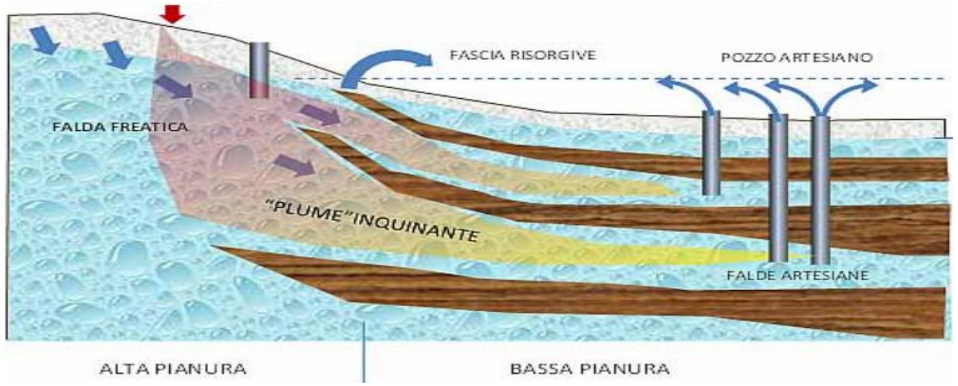
13 - 4.5 MWel GEOTHERMAL-ELECTRIC AND THERMAL POWER PLANT in APRILIA MARITTIMA (Udine): AGA 4.0 srl. General and detailed management of the project, of the Environmental Impact Assessment (P.A.U.R.), acquisition of geothermal permits and concessions (2020-ongoing).

HIGH SPEED railway line - Bologna-Florence Apennine stretch "EMILIAN VARIANT" (1993): campaign of hydrogeological and hydro-chemical investigations and measurements, on springs, wells and streams along 70 km of the track. Piezometric map of the first and second aquifer, hydrogeological study for the design of tunnels and excavations, interventions for the maintenance of the flow rates of the springs of the thermal centers and of the mineral water plants present in EMILIA near the tunnels.

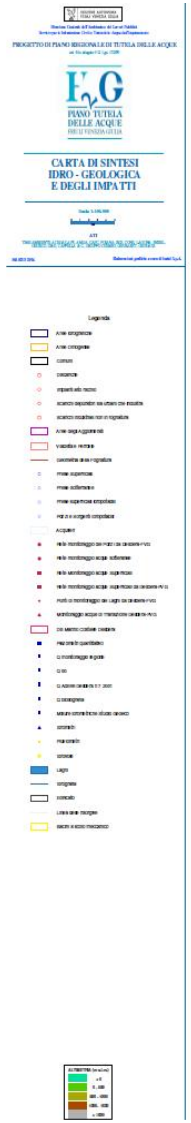


Management of the acute phase and resolution of the atrazine polluting crisis of FRIULI VENEZIA GIULIA with protection of the 20,000 private drinking artesian wells of the Lower Friuli Plain (1997-99). Hydrogeological study, analysis of the origin of contamination and transport, delimitation of groundwater at risk, definition of the protocol for the prevention of serious water crises, relations with the mass media and the regional press. Municipalities involved 37, population of 40,000 inhabitants, duration of the crisis about 18 months (management and coordination of the Regional Health Director of FRIULI V. Giulia, Dr. RINALDI).





FRIULI VENEZIA GIULIA WATER PROTECTION PLAN (2006-08): Preparatory and fact-finding phase 1 and 2, coordination of the groundwater and surface water sector, numerical hydrogeological model of the high and low plains, Map of impacts on regional waters (basins-slopes, mountain springs, aquifers, springs, rivers, lakes, lagoons, coastal areas) and points at risk (water outlets, contaminated agricultural-industrial-urban areas, sewers, large communication), standard scheme for automatic monitoring groundwater at critical points, contamination prevention and prompt intervention (water service value € 1000 million / year, 2008).



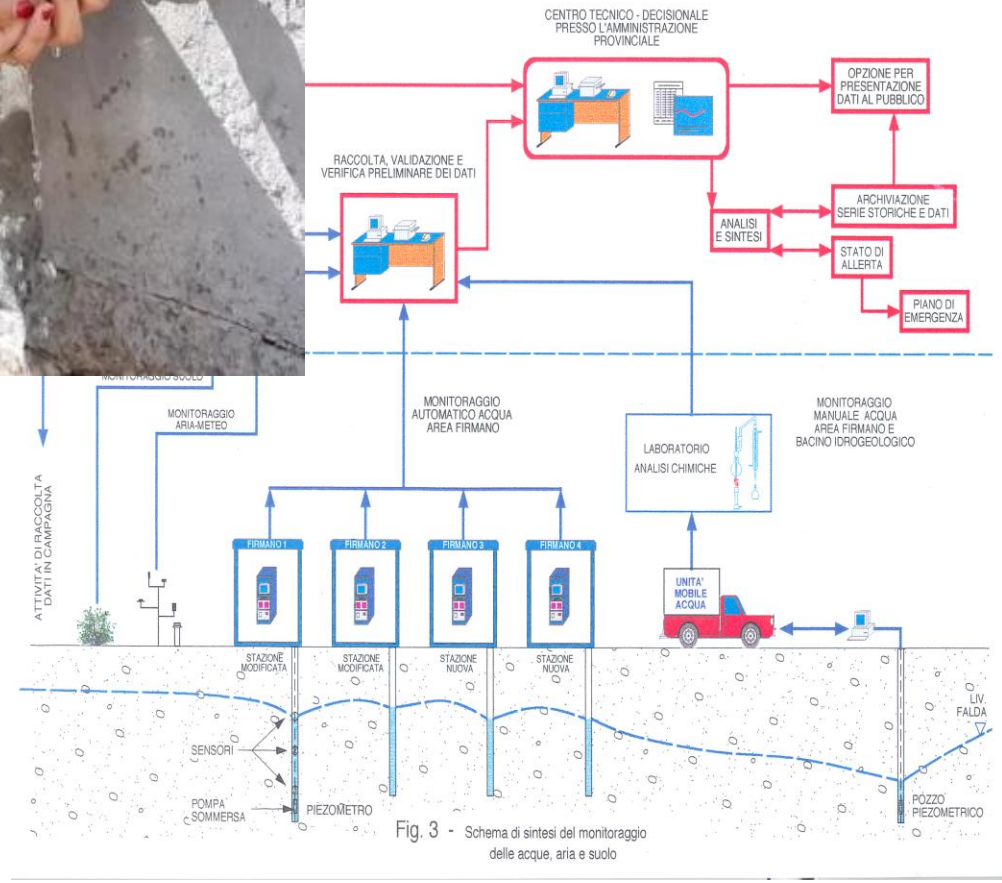
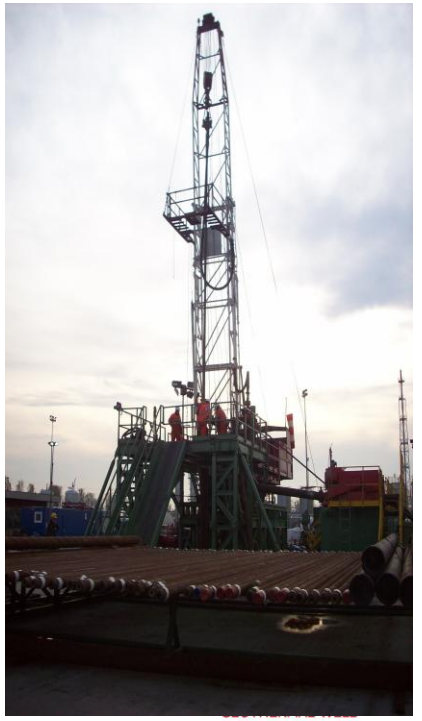
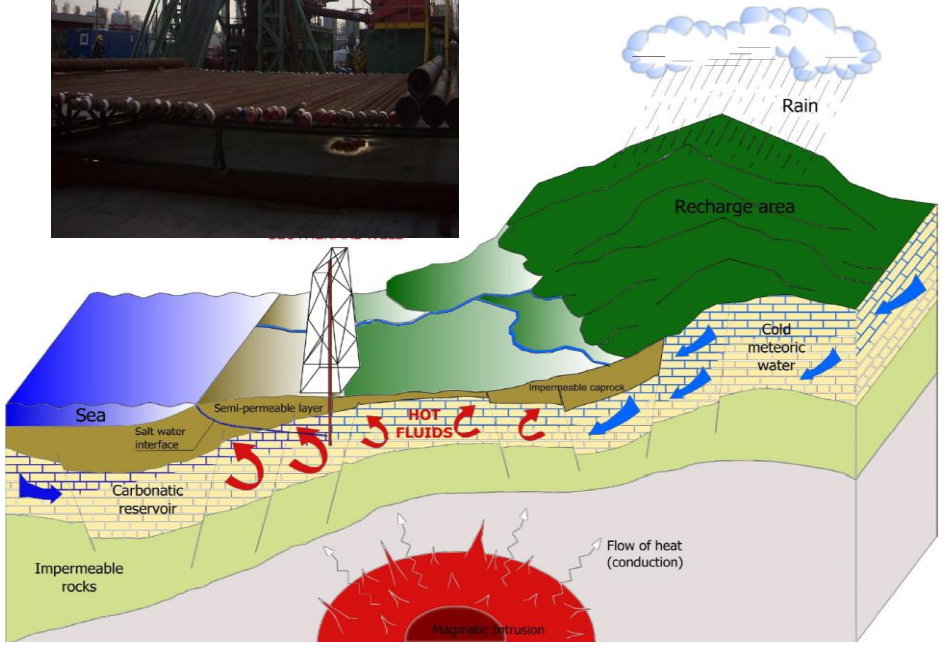


Fig. 3 - Schema di sintesi del monitoraggio delle acque, aria e suolo

PROTECTION FROM MARINE WATER POLLUTION IN PORT AND HIGH NAVAL TRAFFIC AREAS (2009): Operational plan - Meteorological model of storm forecast, hydrodynamic model of sea currents and forecast of the transport of containers and drifting bodies, chemical monitoring for the recognition of toxic substances and the prompt remediation of containers in safe conditions at sea (CEDRE-BREST plan). Collaboration plan with the EU maritime authorities. Weather station, instrumentation for measuring gas, toxic, explosive molecules, mobile emergency cell.

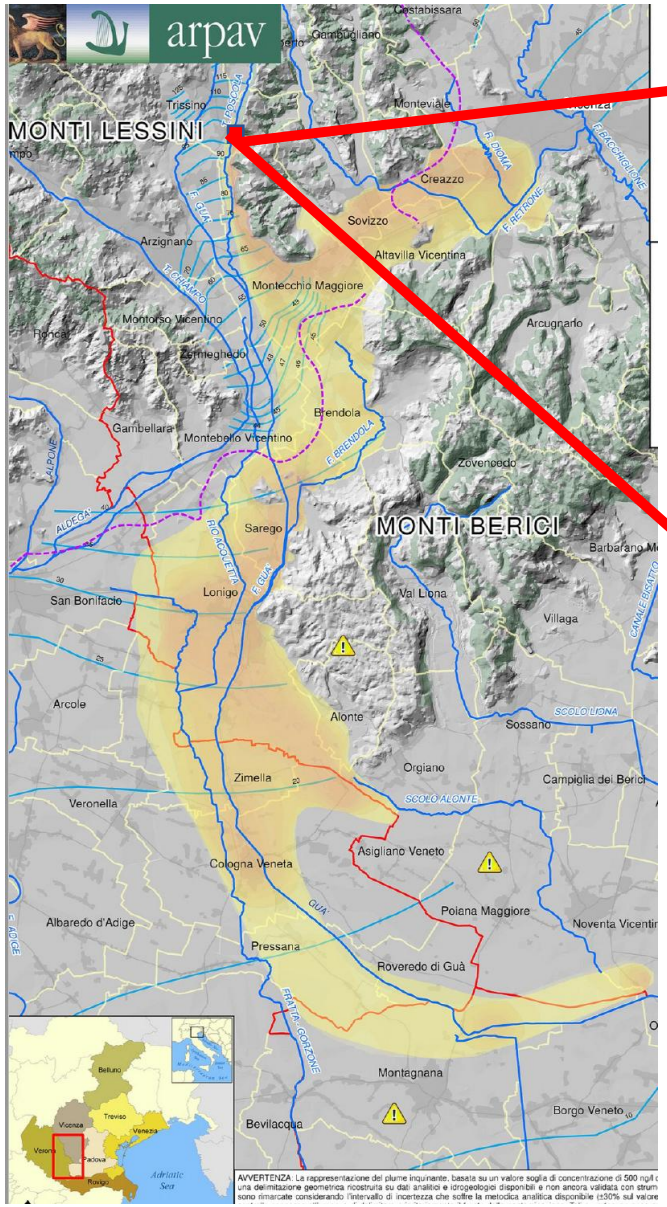
PALAIS LUMIERE - Porto Marghera (Venice), 2014-16: geothermal study, technical and economic cost-benefit feasibility for the production of geothermal energy, analysis of the critical factors of hydro-environmental impact of the project, geothermal scheme of deep hot water in carbonate rock (project value € 2,150 million).





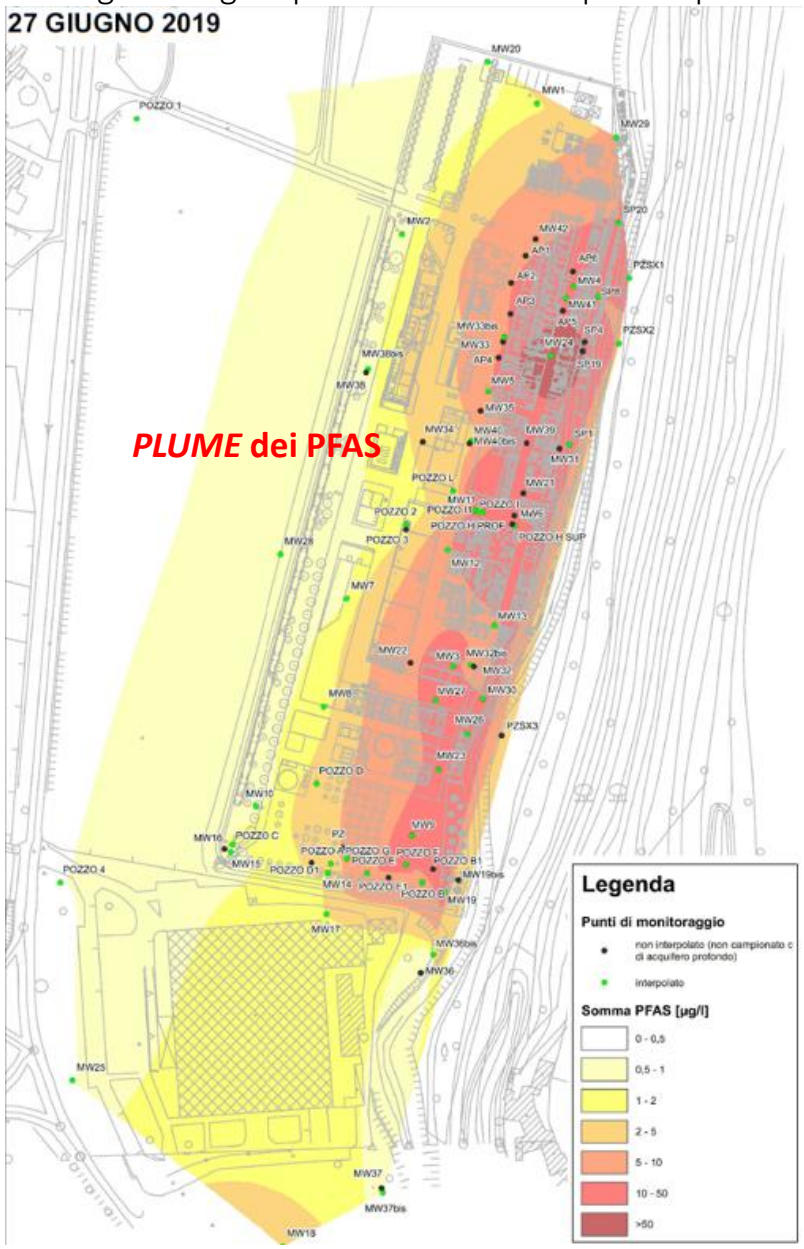
"UDINE CITTA 'D'ACQUA" project and integrated plan for the waters of UDINE (2019-20) with refurbishment and recovery of fountains, irrigation ditches, ancient mills and hydroelectric power plants, millenary wells, Piazza 1 ° Maggio, with the elimination of areas floodable and with hydrogeological instability on properties at risk (under the magical gaze of ……. LEONARDO Da VINCI).

Remediation of the PFAS-contaminated aquifer of the former MITENI and former RIMAR – Trissino (Vicenza) – Hydrogeological study and consultancy for the Remediation Procedure: Hydrogeological study of the flow and transport of PFAS in the aquifer, verification of the projects submitted by former MITENI-ICI3, of the numerical model, of the piezometric maps and the MISO project. Proposals by the R.U.P., management of hydrogeological issues in the Service Conferences and Technical Roundtables, coordination with the VENETO Region, ARPAV, the Province of VICENZA, the Civil Engineering Department and competent public bodies. (2019-ongoing).



PROBLEM DATA:

- This is the most serious PFAS contamination in EUROPE, affecting groundwater intended for drinking and agricultural use, which feeds the springs and rivers of the lower Veneto plain;
- 400,000 people exposed;
- 350 square kilometers of contaminated plume in the groundwater;affected provinces: Vicenza, Verona, and Padua;
- procedure underway: MISO and Remediation at the contaminated sites of the former MITENI and former RIMAR;
- €300 million: estimated total costs for direct and indirect damage to the site and the wider regional territory.



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