

Managing environmental data in Esdat to meet regulatory requirements and support efficient workflows

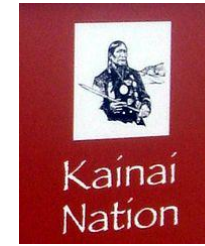
Presenters:

Jane Pirie, Civil & Environmental Project Engineer @ Gwaii Engineering

Nick Tumney, Senior Implementation Specialist @ EScIS

Land Acknowledgement

- Kainai Nation
- Siksika Nation
- Piikani Nation
- Tsuut'ina
- Nakoda Nation
- Métis Nation





GWALL

ENGINEERING

CIVIL & ENVIRONMENTAL ENGINEERING
PROJECT & CONSTRUCTION MANAGEMENT



Our Services

- Civil Engineering
- Planning
- Project Management
- Environmental Engineering
- Design/Build Capability

A tall, vertical totem pole stands in the center of the image. It is intricately carved with several distinct faces, each with unique features like large eyes, prominent noses, and various mouth shapes. The colors used in the carvings include white, black, red, and blue. The background is a soft, misty forest of evergreen trees, creating a serene and atmospheric setting.

**Strength Through
Relationships**

TRENT FORCEMAIN JACOB BROS

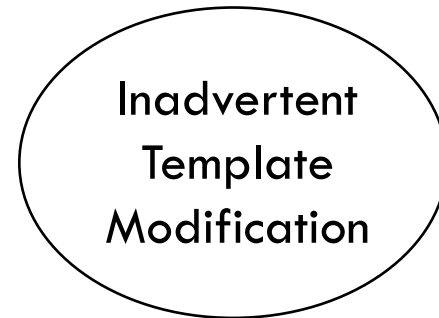
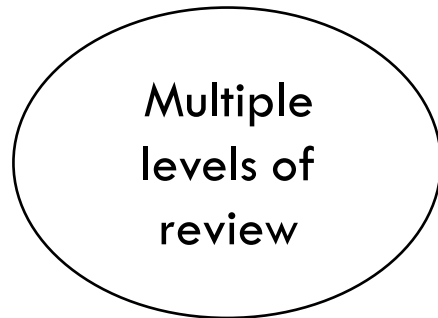
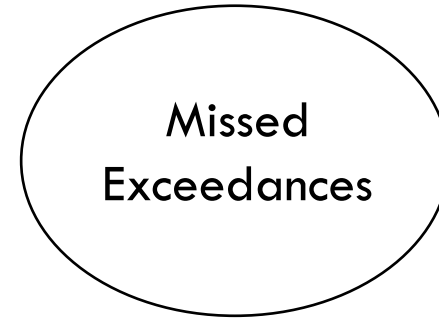
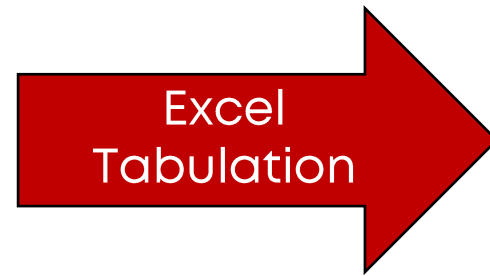
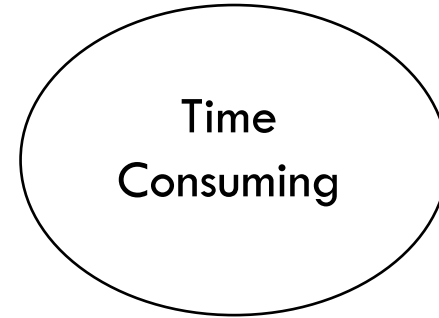
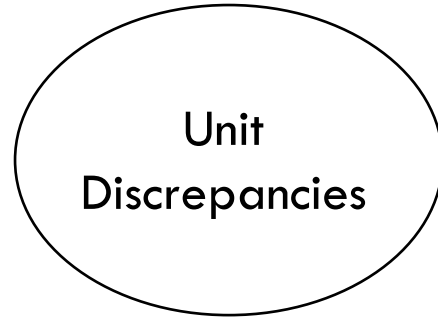
- Part of the CRD
Wastewater Treatment
Project
 - 1.9 km of pipe
- \$6.8M PROJECT BUDGET
- MAIN DELIVERABLES:
 - Environmental Protection Plan
 - Construction Monitoring
 - Contaminated Soils Investigation and Disposal



McLOUGHLIN POINT WWTP

- **Brownfield Development**
- **Completed by Gwaii's sister company**
- **\$765M PROJECT BUDGET**
- **MAIN DELIVERABLES:**
 - **Stage 1 Preliminary Site Investigation (PSI)**
 - **Stage 2 PSI**
 - **Detailed Site Investigation (DSI)**
 - **Site Remediation**





DATA MANAGEMENT CHALLENGES



Expensive

Manual
updates

Limited
alternate
services...

Internal
Database

Limited
standards

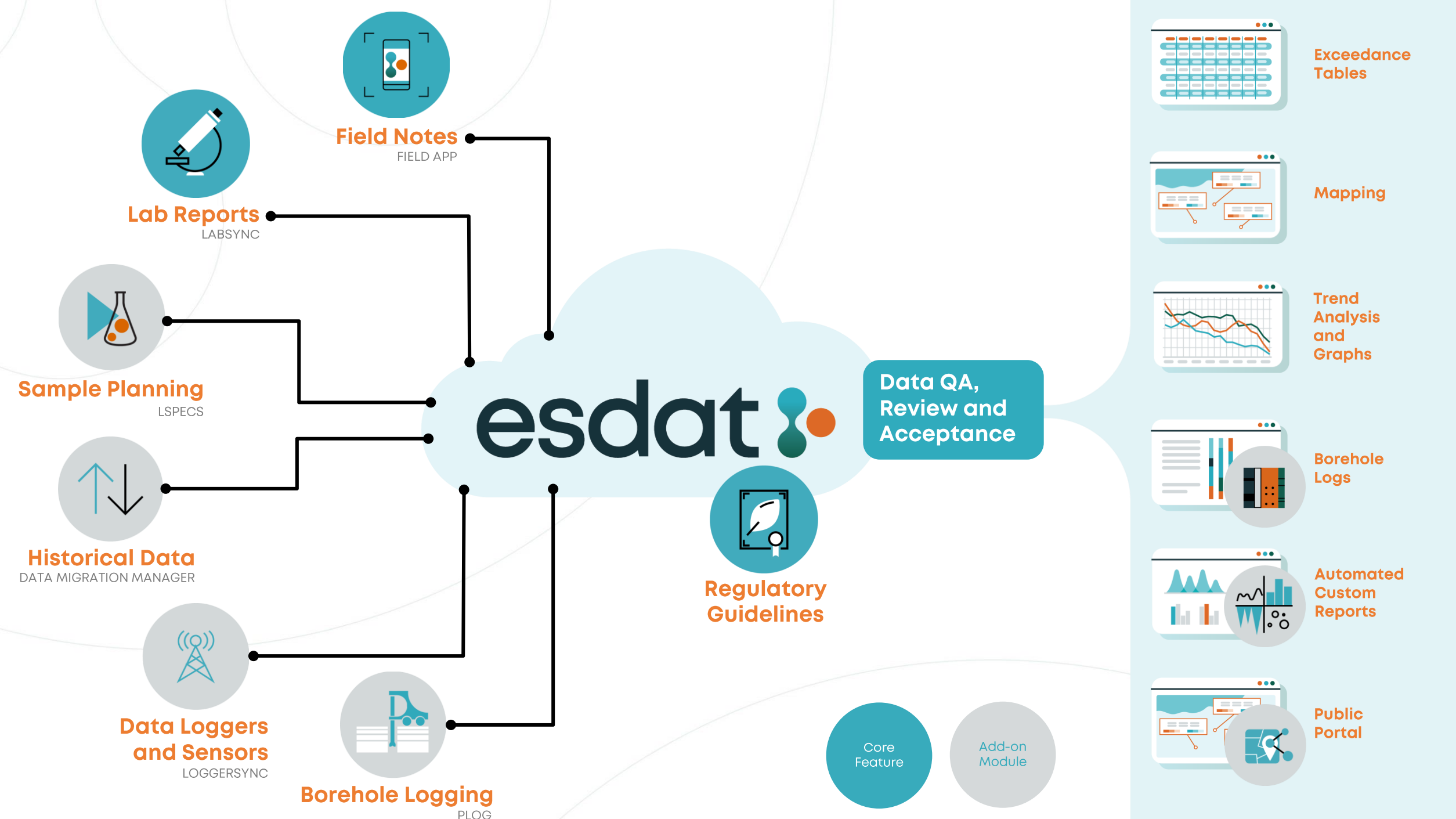
OPTIONS FOR DATA MANAGEMENT





- An Environmental Data Management Software (EDMS) and Solutions company.
- Develop Esdat: a turnkey yet configurable EDMS platform
- Government, industry, energy, mining, and environmental consultants in Canada and internationally.

Simple
Efficient
Effective



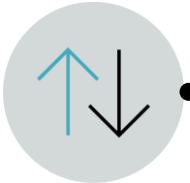
Field Notes
FIELD APP



Lab Reports
LABSYNC



Sample Planning
LSPECS



Historical Data
DATA MIGRATION MANAGER



Data Loggers and Sensors
LOGGERSYNC



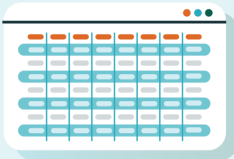
Borehole Logging
PLOG

esdat

**Data QA,
Review and
Acceptance**



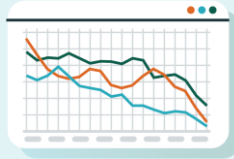
**Regulatory
Guidelines**



**Exceedance
Tables**



Mapping



**Trend
Analysis
and
Graphs**



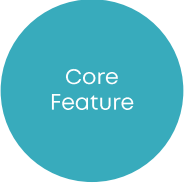
**Borehole
Logs**



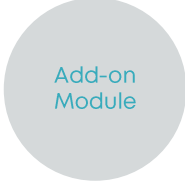
**Automated
Custom
Reports**



**Public
Portal**



Core
Feature



Add-on
Module



Lab Reports

LABSYNC

- LabSync provides a dedicated email address for receipt of laboratory analytical results.
- Canadian laboratories that support Esdat format include:





Lab Reports

LABSYNC

- Received lab reports are validated against Esdat specifications.



- Non-conformances with the format are automatically reported back to the lab for resolutions and reissue.
- Escis engage with labs directly to help resolve issues.



Lab Reports

LABSYNC

- Imported lab reports are listed by Project



Lab Reports									
Details Edits Chem Tables QA Map Outliers Exceedances Other Formats									
Add Lab Report									
All Sites & Projects									
<input type="checkbox"/>	Date Added	Lab Name	Lab Report Number	Project ID	Site ID	Matrix Types	Status		
<input type="checkbox"/>	22 Feb 2022	EV Data	EVW3521	EV_Demo	EV_Site	Water	⌘	<input type="checkbox"/>	✕
<input type="checkbox"/>	17 Feb 2022	BrisLab	BL20200723	01_ESdat_Training			⌘		
<input checked="" type="checkbox"/>	12 Nov 2021	Tute Laboratory	TLEDD001	01_ESdat_Training	01_ESdat_Training	Water	⌘		
<input type="checkbox"/>	23 Jul 2020	TVLab	20200722	01_ESdat_Training		Soil	⌘		
<input type="checkbox"/>	10 Oct 2018	Tute Laboratory	DEMO001	05_No_Site		Water	⌘		
<input type="checkbox"/>	18 Jan 2018	ESD	Site A Historical 2010	04_Example Mining	04_Mine_Site_1	Water	⌘		
<input type="checkbox"/>	27 Oct 2017	Lab01	EDDdemo01	03_Soil Vapour	03_Demo_Site	Water	⌘		
<input type="checkbox"/>	27 Oct 2017	Lab02	EDDdemo02	03_Soil Vapour	03_Demo_Site	Water	⌘		
<input type="checkbox"/>	01 Dec 2016	GSLab	Q16713	01_ESdat_Training	01_ESdat_Training	Water	⌘		
<input type="checkbox"/>	06 Jun 2016	Historical	Historical	01_ESdat_Training	01_ESdat_Training	Soil, Water	⌘		
<input type="checkbox"/>	01 Jun 2016	LabTrain-SYD	16713	01_ESdat_Training	01_ESdat_Training	Water	⌘		
<input type="checkbox"/>	01 Jun 2016	LabTrain-SYD	16715	01_ESdat_Training	01_ESdat_Training	Water	⌘		



Lab Reports

LABSYNC

- Review and assign sample information



Lab Reports: EVW3521

Selected Lab Report: EVW3521 | Date Reported: 23 Nov 2019
Lab Name: EV Data | Project ID: EV_Demo
Lab Report Number: EVW3521
Lab Signatory: [Empty]

Lab Report Files are not available for Download

Comments: [Empty] | Approved: No | [Reject] [Approve]

Matrix Type	Field ID	Sample Date	Site/Location	Assign	Well	Depth	Sample Type	Parent Sample	Sample Code	Sampling Met...	Matrix Descri...	Sample Com...	Conditional Matrix Typ
Water	GW01_20191114	14 Nov 2019 2:25 PM	EV_Site / GW01	[Edit]	-	-	Normal		B9W3521GW025				
Water	GW02_20191113	13 Nov 2019 10:41 AM	EV_Site / GW02	[Edit]	-	-	Normal		B9W3521GW029				
Water	GW03_20191115	15 Nov 2019 4:45 PM	EV_Site / GW03	[Edit]	-	-	Normal		B9W3521GW043				
Water	GW04_20191113	13 Nov 2019 10:27 AM	EV_Site / GW04	[Edit]	-	-	Normal		B9W3521GW058				
Water	GW05_20191112	12 Nov 2019 9:33 AM	EV_Site / GW05	[Edit]	-	-	Normal		B9W3521GW071				
Water	GW06_20191115	15 Nov 2019 2:15 PM	EV_Site / GW06	[Edit]	-	-	Normal		B9W3521GW084				
Water	QA01_20191113	13 Nov 2019		[Edit]	-	-	Field_D	B9W3521GW029	B9W3521GW106				
Water	GW07_20191113	13 Nov 2019 1:10 PM	EV_Site / GW07	[Edit]	-	-	Normal		B9W3521GW113				
Water	GW08_20191113	13 Nov 2019 6:45 PM	EV_Site / GW08	[Edit]	-	-	Normal		B9W3521GW114				
Water	GW09_20191115	15 Nov 2019 3:44 PM	EV_Site / GW09	[Edit]	-	-	Normal		B9W3521GW115				
Water	GW10_20191111	11 Nov 2019 4:36 PM	EV_Site / GW10	[Edit]	-	-	Normal		B9W3521GW134				
Water	GW11_20191115	15 Nov 2019 10:47 AM	EV_Site / GW11	[Edit]	-	-	Normal		B9W3521GW142				

1 - 15 of 15 items

[Save Changes] [Undo Changes]



Lab Reports

LABSYNC

- Complete QA/QC tasks
 - RPDs
 - Frequency
 - Blanks



QA Settings					Chem Profile	Env Standards	Sample Information	Results	Excel Export				
					Matrix Type:	Inorganics				Metals			
					Water	pH (Lab)	Hardness as CaCO3 (filtered)	Sulfur (filtered)	Sodium (filtered)	Aluminium (filtered)	Antimony (filtered)	Arsenic (filtered)	Barium (filtered)
						pH	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
EQL						0.5	3	0.05	0.003	0.0005	0.0001	0.001	
Date	Field ID	Sample Type	Lab Report N...	Matrix Type									
11/13/2019	GW02_20191...	Normal	EVW3521	Water	7.44	324	<3	1.1	<0.003	<0.0005	<0.0001	0.0161	
11/13/2019	QA01_20191...	Field_D	EVW3521	Water	7.1	1720	482	93.1	<0.015	<0.0025	<0.0005	0.026	
RPD					5	137	198	195	0	0	0	47	



Lab Reports

LABSYNC

- Complete QA/QC tasks
 - RPDs
 - Frequency
 - Blanks



QA Config

QA Settings Default Save Changes Duplicate Rename Delete Set as Default

Sample Frequency Validation

- Field or Interlab Duplicates
- Laboratory Duplicates
- Field Blanks
- Laboratory Blanks
- Matrix Spikes
- Trip Spikes
- Surrogates
- Lab Control Samples
- Standard Reference Materials
- Certified Reference Materials
- Inorganics
- Default Formatting

Sample Frequency Validation - Number of QA Samples Required

Non-compliant Cell Style A ▼

+ Add

1	Field_D	for 20	Normal	per			
1	Interlab_D	for 20	Normal	per			
1	Rinsate	for 20	Normal	per	SDG		
1	Field_B	for 1	SDG	per			
1	Trip_B	for 1	Lab Report	per			
1	Lab_D	for 10	Normal	per	Lab Report		



Lab Reports

LABSYNC



Regulatory Guidelines



Examination Tables

ESdat

Projects & Sites | Lab Uploads | Lab Reports | Data View

Lab Reports | Details | Edits | Chem Tables | QA | Map | Outliers | Exceedances | Other Formats

Lab Report: A16713

Sample Types in "Normal" | Add Filter | Search

Chem Profile | Env Standards | Sample Information | Results | Points & Labels | Export | Print

Field ID	Date	Cr	Cr (F)	Cu	Cu (F)	Fe	Pb	Pb (F)	Zn	Zn (F)
BH03_2014-07-28	2018-11-29	0.16	0.17	1	0.93	20	0.093	0.056	90	69

Field ID	Date	Cr	Cr (F)	Fe	Pb	Pb (F)	Zn	Zn (F)
BH10_2014-07-28	2018-11-29	0.082	0.025	5.3	0.006	0.006	4.5	4.4

Field ID	Date	pH (Lab)	Cu	Pb	Pb (F)	Zn	Zn (F)
BH21_2014-07-28	2018-11-29	5.5	0.008	0.01	0.002	0.33	0.19

Field ID	Date	Fe	Zn	Zn (F)
BH08_2014-07-28	2018-11-29	120	180	130

Field ID	Date	pH (Lab)	Cr	Cr (F)	Fe	Pb	Pb (F)	Zn	Zn (F)
BH01_2014-07-28	2018-11-29	5.5	0.064	0.017	12	0.032	0.022	9.1	6.8

Field ID	Date	pH (Lab)	Cr	Pb	Pb (F)	Zn	Zn (F)
BH25_2014-07-31	2018-12-02	5.7	0.006	0.007	0.002	0.073	0.035

Field ID	Date	Fe
BH05_2014-07-28	2018-11-29	75

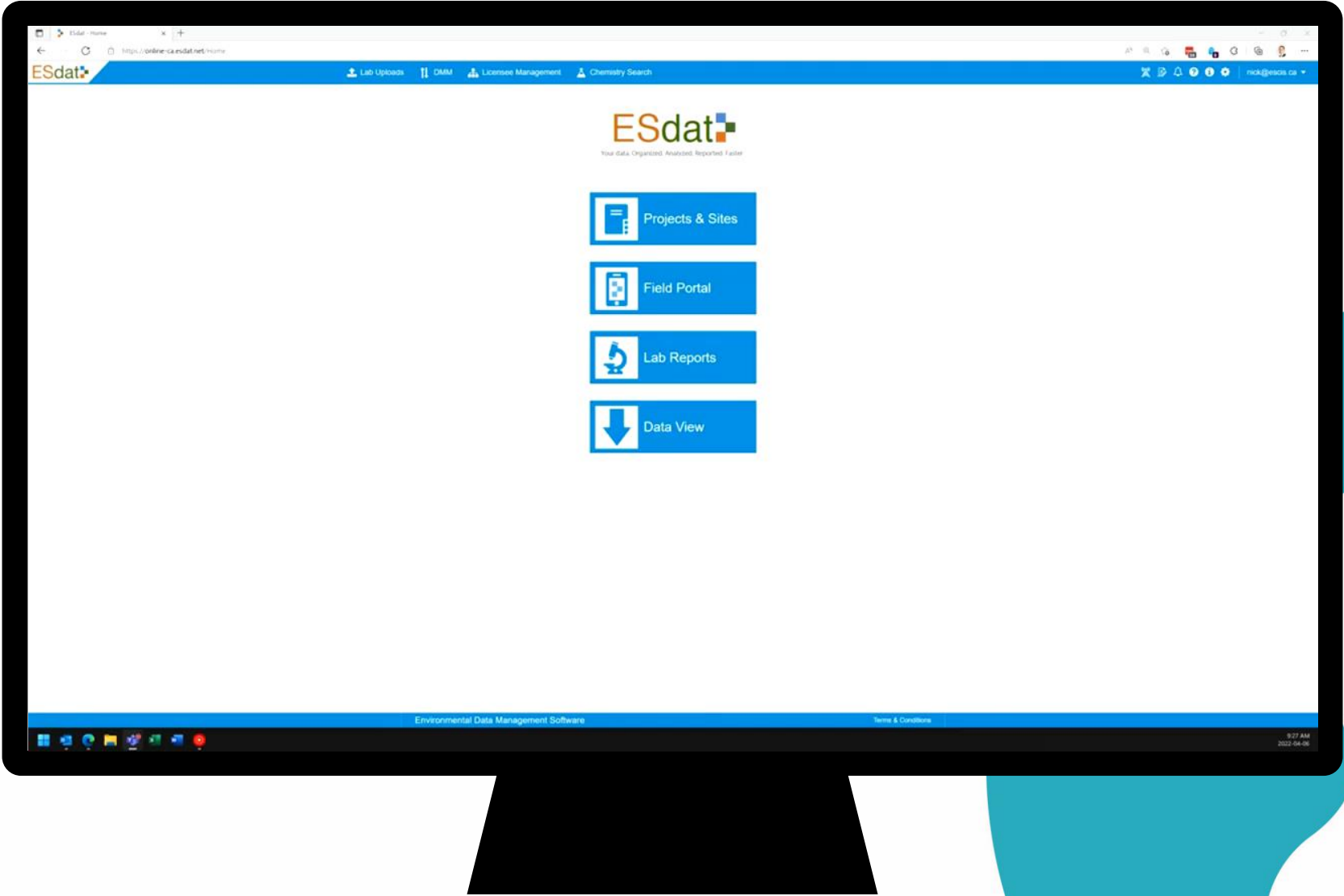
Field ID	Date	pH (Lab)	Cr	Cr (F)	Fe	Zn	Zn (F)
BH24_2014-07-28	2018-11-29	5.5	0.01	0.008	260	320	240

Field ID	Date	pH (Lab)	Cr	Cr (F)	Cu	Cu (F)	Fe	Pb	Pb (F)	Zn	Zn (F)
BH14_2014-07-28	2018-11-29	5.7	0.26	0.19	0.61	0.17	26	0.12	0.093	88	60

Field ID	Date	pH (Lab)	Cr	Cr (F)	Cu	Fe	Pb	Pb (F)	Zn	Zn (F)
BH23_2014-07-28	2018-11-29	5.7	0.1	0.06	0.051	770	0.089	0.079	200	160

Field ID	Date	pH (Lab)	Cr	Fe	Zn
BH02_2014-07-31	2018-12-02	5.5	0.012	9.4	0.16

200 m | 125,944, 39,046



ESdat

Your data. Organized. Analyzed. Reported. Faster.

 Projects & Sites

 Field Portal

 Lab Reports

 Data View



Borehole Logs



ESlog
FAQs | Terms & Conditions

Data
Print & PDF
Page Setup
Selected Log: BH04
Depth per page: 5
Start Depth: 0
End Depth: 4

ENVIRONMENTAL WELL BH04

PROJECT NUMBER LSPECS_Demo; SampleHy; DRILLING COMPANY	COORDINATES 754748.461; 4326141.217
PROJECT NAME Demo; Sample Hydro Geo DRILLER	COORD SYS WGS_84_UTM_zone_51N
CLIENT DRILL RIG	SURFACE ELEVATION 43.25
ADDRESS DRILLING METHOD	WELL TOC A=43.2; B=42.19
DRILLING DATE 2/02/2005 12:00:00 AM - 3/02/2005 12:00:00 AM	TOTAL DEPTH 4.000
LICENCE NO.	DIAMETER 120 mm
	LOGGED BY M. Smart
	CHECKED BY M. Smart

COMPLETION	CASING	SCREEN
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COMMENTS

Depth (m)	Drilling Method	PID	Samples	Sample Type	Is Analysis?	Water	Well Installation Details	Graphic Log	Material Description	Moisture	Consistency	Additional Observations	Elevation (m)
0.2	NDC	BH04_0-0-0.1			Y				TOPSOIL, (PT), dark brown, saturated, high organic content.	S			43.2
0.4									CLAYEY SILTY SAND, (SC), fine to medium grained, poorly graded, flat and elongated, subangular, weak cementation, pale greenish brown, little chert, some coal, moist, medium bedding thickness, laminated, widely fissured fracture spacing, Calcareous	M	iron oxide staining, no odour, weak HCL reaction	42.80	
0.6													42.60
0.8													42.40
1.0													42.20
1.2													42.00
1.4													41.80
1.6													41.60
1.8													41.40
2.0													41.20
2.2	PT												41.00
2.4													40.80
2.6									CLAYEY QUARTZ SANDSTONE, medium grained, very dark brownish grey, dry, very hard, thickly crossbedded, bioturbated, flow banded, very wide fracture spacing, moderately weathered			iron oxide staining, slight odour	40.60
2.8													40.40
3.0													40.20
3.2													40.00
3.4									GRANITE				39.80
3.6													
3.8													
4.0													

Edit Column Manage Columns

Title: Material Description

Data Layout

Text Add

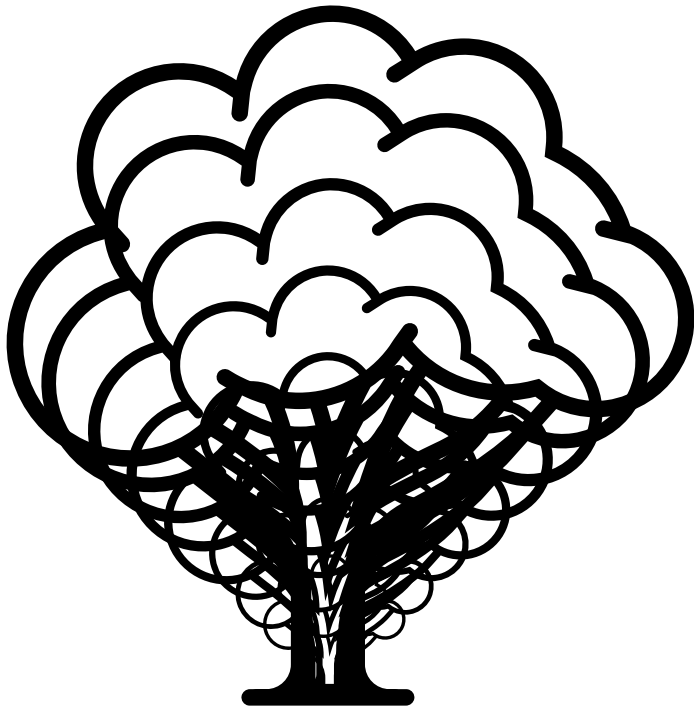
Depth	Text
0 - 0.4	TOPSOIL, (PT), dark brown, saturated, high organic content.
0.4 - 2.8	CLAYEY SILTY SAND, (SC), fine to medium grained, poorly graded, flat and elongated, subangular, weak cementation, pale greenish brown, little chert, some coal, moist, medium bedding thickness, laminated, widely fissured fracture spacing, Calcareous
2.8 - 3	CLAYEY QUARTZ SANDSTONE, medium grained, very dark brownish grey, dry, very hard, thickly crossbedded, bioturbated, flow banded, very wide fracture spacing, moderately weathered
3 - 4	GRANITE

Waterstrikes Add

End Depth Comment: Termination Depth at: 4.000 m.

Integrate

- Training
- Exploration
- Adapt



Improve

- Automated data upload & updates
- Consistent table presentation
- Error reduction
- Decreased data tabulation time by over 80%

GWAII OUTCOMES



Thank you

Questions?