ABN 27 153 876 861

Suite 103, 2 Queen St Melbourne VIC 3000
P: +61 3 8395 5446
E: info@atrumcoal.com
W: atrumcoal.com

ASX: ATU

Atrum Coal
COAL FOR STEEL

ASX Announcement

25 November 2020

ISOLATION SOUTH RESOURCE UPDATE

Atrum Coal Limited (ASX: ATU) (**Atrum** or the **Company**) is pleased to advise of an interim update to the resource estimate for the Isolation South deposit at its 100%-owned Elan Hard Coking Coal Project (**Elan Project**) in southern Alberta, Canada.

HIGHLIGHTS

- **Resource update following 2020 Elan Project drilling program at Isolation South**
- **Isolation South Measured + Indicated (M+I) resource increased 93 Mt to 175 Mt (+113%)**
- **Total Isolation South resource increased 32 Mt to 262 Mt (+14%)**
- **Total Elan Project resource now 486 Mt (7 Mt Measured, 228 Mt Indicated and 252 Mt Inferred)**
- **Dual infill and extensional objectives satisfied: (1) substantial upgrade to resource classification; and (2) further expansion of the Isolation South resource base**
- **Successful upgrade of large portions of previously Inferred resources at Isolation South has delivered substantial expected upside to the life-of-mine production target and forecast base case economics presented in the Elan Project Scoping Study results (April 2020)[1]**
- **Updated Scoping Study outcomes expected to be released in December 2020**
- **Final Isolation South resource expected in 1Q 2021 following receipt of residual coal quality results; further resource classification upgrades expected**
- **Final Isolation South resource to underpin Elan Project PFS expected by mid-2021**

Commenting on the interim Isolation South resource update, Atrum Managing Director and CEO, Andy Caruso, said:

"The initial resource outcomes from the 2020 Elan drilling program are excellent. Over two thirds of the total Isolation South resource is now in the higher confidence Measured and Indicated categories. The team has also managed to deliver a further 14% increase to the large existing Isolation South resource base. Importantly, the magnitude of the classification upgrades with this interim resource allow us to enlarge, and further enhance, the mine schedule from the Elan Project Scoping Study – with these outcomes to be presented in an Updated Scoping Study targeted for release next month. The upgrades also deliver us the opportunity to declare a substantial Coal Reserve with the Elan Project PFS next year."

[1] At Isolation South, 108Mt of Inferred resource within the optimised pit shell was excluded from the mine schedule and production target in the Elan Project Scoping Study (which totaled 126Mt), in accordance with the current ASX/ASIC regulatory framework (see Atrum ASX release dated 16 April 2020, *Elan Project Scoping Study*). Upgrade of these Inferred Resource portions of Isolation South into Indicated and/or Measured Resource categories has now delivered the strong potential for inclusion in the mine schedule for the Elan Project PFS and subsequent conversion to Coal Reserves. Other than the content of this release, Atrum confirms that all material assumptions underpinning the production target and forecast financial information within the Scoping Study continue to apply and have not materially changed.

2020 drilling program

The 2020 drilling program at the Elan Project focused solely on Isolation South. The program comprised 125 rotary air blast (**RAB**) holes, 35 large diameter core (**LDC**) holes and 6 HQ geotechnical and hydrogeological holes. The RAB holes were completed across a typical spacing of 100 to 200 metres. The LDC drilling was designed to reduce the spacing between coal quality data points to around 250 metres; it achieved this along with excellent core recoveries. The program had both an infill and extensional focus, aimed at significantly upgrading resource classification and potentially also expanding the Isolation South resource base.

Isolation South interim resource update

Northern Area

The Isolation South (Northern Area) resource estimate has increased to 240 Mt (7 Mt Measured, 168 Mt Indicated and 66 Mt Inferred). Measured and Indicated resources now total 175 Mt (or 73% of the total Northern Area resource), as summarised in Table 1. The thick Seam 3 package comprises 146 Mt (or 61%) of the total Northern Area resource.

Table 1 Isolation South (Northern Area) Resources (November 2020)

Seam Group	MEASURED (Mt)	INDICATED (Mt)	MEASURED and INDICATED (Mt)	INFERRED (Mt)	TOTAL (Mt)
SEAM 1	4.6	18	22	9	31
SEAM 2	2.3	13	16	10	25
SEAM 3	-	119	119	28	146
SEAM 4	-	18	18	20	37
TOTAL	**6.9**	**168**	**175**	**66**	**240**

The strong conversion of previously Inferred resources to Measured and Indicated classification has demonstrated that the previously lesser explored northern areas at Isolation South are broadly consistent with the southern Indicated resource areas within the pit shell defined during the Scoping Study.

Southern Area

No exploration was carried out in the southern area (south of the Oldman River) in 2020 and therefore no adjustment to the Isolation South (Southern Area) resource estimate has been made (Table 2).

Total Isolation South

Total Isolation South resources have increased 32 Mt (+14%) to 262 Mt (7 Mt Measured, 168 Mt Indicated and 88 Mt Inferred).

Table 2 Total Isolation South Resources (November 2020)

AREA	MEASURED (Mt)	INDICATED (Mt)	MEASURED and INDICATED (Mt)	INFERRED (Mt)	TOTAL (Mt)
NORTHERN AREA	6.9	168	175	66	240
SOUTHERN AREA	-	-	-	22	22
TOTAL	**6.9**	**168**	**175**	**88**	**262**

Critically, the interim resource update has delivered a total of 175 Mt resources classified as either Measured or Indicated (a 113% increase in M+I quantity).

A comparison with the previous Isolation South resource estimate is provided in Table 3 below.

Table 3 Changes in total Isolation South Resources (November 2020)

UPDATE DATE	MEASURED (Mt)	INDICATED (Mt)	INFERRED (Mt)	TOTAL (Mt)
Starting base (Feb 2020)	0	82	148	230
Interim resource (Nov 2020)	**6.9**	**168**	**88**	**262**
2020 Program Increase (Mt)	6.9	86	-60	32
2020 Program Increase (%)	**-**	**105%**	**-41%**	**14%**

For details of the previous Isolation South resource estimate, see Atrum ASX release dated 10 February 2020.

Global Elan Project resource estimate

Total Elan Project resources now stand at 486 Mt (7 Mt Measured, 228 Mt Indicated and 252 Mt Inferred) – a 32 Mt increase.

Following the substantial classification upgrade to the Isolation South resource, higher confidence Measured and Indicated resources now comprise almost 50% of the total Elan Project resource base per Table 4 below.

Table 4 Total Elan Project Resources (November 2020)

PROJECT	PROJECT AREA	MEASURED (Mt)	INDICATED (Mt)	MEASURED + INDICATED (Mt)	INFERRED (Mt)	TOTAL (Mt)	DATE REPORTED
ELAN NORTHERN TENEMENTS	ISOLATION SOUTH	7	168	175	88	262	25-Nov-20
	ISOLATION	-	-	-	51	51	22-Jan-19
	SAVANNA	-	-	-	30	30	22-Jan-19
ELAN SOUTH	SOUTH EAST CORNER	-	16	16	22	38	10-Feb-20
	FISH HOOK	-	15	15	11	26	10-Feb-20
	OIL PAD RIDGE	-	29	29	50	80	10-Feb-20
TOTAL		**7**	**228**	**235**	**252**	**486**	

Tier 1 HCC quality

Coal quality testwork is continuing at several laboratories. The comprehensive coring program in 2020 (35 LDC and 6 hydrogeology / geotechnical holes) resulted in over 400 seam composites being sampled, prepared and submitted for testing, with the seam composites combined from discreet ply samples.

The interim Isolation South resource estimate has been prepared based on the raw and clean coal quality data that was available as at November 2020, with a minimum requirement of at least the raw quality test results completed for a valid coal quality point of observation.

Of the 35 LDC holes completed in 2020, 21 have been completed to at least raw quality testwork, while 12 have been completed through to testing of clean coal composites. Coal quality data used in the geological model is also incorporated from two hydrogeology / geotechnical holes and 15 cored holes drilled historically by Scurry Oil.

Coal quality attributes for the coal resources reported are summarised in Table 5 below, as determined from individual grid models for each quality variable on an individual ply basis. Coal quality attributes are reported on an air-dried basis and weighted by resource tonnes.

Table 5 Isolation South (Northern Area) Resources with raw quality attributes (November 2020)

SEAM GROUP	RESOURCE (Mt)	Total Thickness (m)	RD (ad)	IM % (ad)	Ash % (ad)	VM % (ad)	FC % (ad)	CSN	TS %
SEAM 1	31	6.6	1.49	0.8	24.4	24.0	50.8	5	0.76
SEAM 2	25	5.6	1.45	0.9	20.5	23.1	55.7	4	0.56
SEAM 3	146	18.5	1.49	1.0	22.7	21.6	54.6	3	0.38
SEAM 4	37	5.2	1.56	0.8	30.3	20.6	48.4	4	0.63
Grand Total	**240**								

Coal core samples from the LDC program were submitted to GWIL Birtley in Calgary for detailed coal quality, washability and clean coal laboratory testwork. Additional clean coal analysis is being completed by COALTECH Petrographic Associates, USA (for clean coal characterisation tests). Blended products are designed by Atrum and prepared by Birtley for delivery to coal carbonisation laboratories in Europe; DMT Coal Coke Group (Germany) and INCAR (Spain)[2].

Indicative clean coal quality attributes are presented on a seam group basis in Table 6 below, providing further confidence in the ability of Isolation South to deliver premium mid to low volatile hard coking products.

Table 6 Weight averaged clean coal attributes by seam group

Seam Group	Composites Tested	Ash % (ad)	VM % (ad)	FC % (ad)	TS %	Phos %	Max. Fluidity ddpm	CSN	Reactive Macerals %	Mean Max Reflectance %
Seam 1	22	7.7	26.7	64.6	0.83	0.054	791	8	76.1	1.11
Seam 2	10	8.0	24.5	66.7	0.68	0.039	231	7	67.5	1.16
Seam 3	12	8.3	23.5	67.2	0.47	0.023	95	5	64.7	1.20
Seam 4	16	8.8	24.6	65.9	0.65	0.008	1,442	6.5	66.9	1.15

[2] For further details of the clean coal and coke characterisation testwork completed, see Atrum ASX release dated 7 October 2020, *Isolation South Tier 1 HCC*

The data acquired from the coal quality testwork has been used to generate raw and clean coal quality grid models, and the data will feed into the Coal Handling and Preparation Plant (CHPP) design, and determination of practical processing yield and product specification within the current PFS.

Next steps

The core objectives of the 2020 exploration program at Isolation South were to demonstrate structural and coal quality continuity of the four seam groups over the pit shell extent identified in the Scoping Study, upgrade resource classification and to acquire the necessary data to underpin key Elan Project Pre-Feasibility Study (**PFS**) workstreams (including mine planning, plant design and product strategy to market). These aims have all been achieved.

The significant increase in Measured and Indicated resources at Isolation South provides the potential for declaration of a substantial maiden Coal Reserve in accordance with JORC (2012) following the targeted completion of a successful PFS by mid-2021.

More immediately, the magnitude of the classification upgrades delivered with the interim Isolation South resource now allow us to enlarge and enhance the production target from the Elan Project Scoping Study (April 2020). These outcomes are set to be presented in an Updated Scoping Study targeted for release next month.

The context to this is that approximately 108Mt of Inferred resource within the Isolation South optimised pit shell was excluded from the mine schedule and production target in the Scoping Study (which totaled 126Mt), in accordance with the current ASX/ASIC regulatory framework (see Atrum ASX release dated 16 April 2020, *Elan Project Scoping Study*). The now successful upgrade of large portions of previously Inferred resources within that optimised pit shell to Measured and Indicated status has delivered substantial expected upside to the life-of-mine production target and forecast base case economics presented in the Scoping Study results.

A further update to the Isolation South resource is also expected in 1Q 2021, following receipt of residual coal quality testwork results. Further resource classification upgrades are expected with this final resource update from the 2020 exploration program.

This ASX release was authorised on behalf of the Atrum Coal Board by:

Andrew Caruso, Managing Director and CEO

For further information, contact:

Andrew Caruso
Managing Director and CEO
T: +61 3 8395 5446

Justyn Stedwell
Company Secretary
T: +61 3 8395 5446
E: jstedwell@atrumcoal.com

Michael Vaughan
IR & Media, Fivemark Partners
T: +61 422 602 720

About Atrum Coal

Atrum Coal (ASX: ATU) is a metallurgical coal developer. The Company's flagship asset is the 100%-owned Elan Hard Coking Coal Project in southern Alberta, Canada. Elan hosts large-scale, shallow, thick, hard coking coal (HCC) deposits with a current resource estimate of 486Mt (7Mt Measured, 228Mt Indicated and 252Mt Inferred). Comprehensive coal quality testing from the 2018, 2019 and 2020 exploration programs, combined with review of substantial historical testwork data for the broader Elan Project, has confirmed Tier 1 HCC quality.

Elan's southern boundary is located approximately 13 km from an existing rail line with significant excess capacity, providing direct rail access to export terminals in Vancouver and Prince Rupert. It shares its southern boundary with Riversdale Resources' Grassy Mountain Project, which is in the final permitting stage for a 4.5Mtpa (saleable) open-cut HCC operation. Around 30km to the west, Teck Resources operates four mines (the Elk Valley complex) producing approximately 25Mtpa of premium HCC for the seaborne market.

Atrum completed a Scoping Study in April 2020 which demonstrated the strong technical and economic viability of development of the Elan Project. For full Scoping Study and resource details refer to Atrum ASX release dated 16 April 2020, *Elan Project Scoping Study*. Atrum confirms that all material assumptions underpinning the production target and forecast financial information within the Scoping Study, and the resource estimate outlined above, continue to apply and have not materially changed.

APPENDIX A: Further information relating to Isolation South resources

Isolation South exploration

The 2020 exploration campaign was successfully completed in October 2020 with rotary air blast (**RAB**) and cored drilling and 2D seismic survey undertaken at the northern (Cabin Ridge) area at Isolation South. The overall aim of this year's exploration program was to demonstrate structural and coal quality continuity of the four seam groups over the pit shell extent identified in the Scoping Study, upgrade resource classification and to acquire the necessary data to underpin the Pre-Feasibility Study (**PFS**).

During the 2020 field program, 125 RAB holes, 35 150 mm large diameter cored (**LDC**) and six HQ cored holes (for hydrogeology and geotechnical analysis) were completed, along with five 2D seismic lines. This complements the program of 49 RAB holes that were completed in 2019 in the northern Cabin Ridge area at Isolation South.

Exploration completed at Isolation South in 2019 and 2020 (northern area)

YEAR	RAB Holes	LD Cored Holes	HQ Hydrogeology / Geotechnical Holes	2D Seismic Lines
2020	125	35	6	5
2019	49	-	-	-
TOTAL	**174**	**35**	**6**	**5**

The RAB drilling program was successfully completed in September 2020 with 125 RAB holes drilled (for 21,500 total metres), 117 of which were located within the Scoping Study pit shell area. The resultant RAB hole spacing typically ranges from less than 100 metres up to 200 metres between holes and provides significant confidence in geological interpretation and modelling.

The LDC coring program was successfully completed with a total of 35 LDC holes completed at Isolation South. The quantity and distribution of LDC holes was planned to delineate spatial variability in coal quality and washability attributes and to support improved resource classification, with the spacing between coal quality data points typically 300 metres or less within the Scoping Study pit shell area.

Six multi-purpose hydrogeological / geotechnical holes were also completed in the 2020 program. These boreholes are fully cored (HQ size) and have been used for the assessment and monitoring of groundwater aquifers, geotechnical logging and sampling, and coal quality testwork. The 2020 coring program is also complemented by 18 historical fully cored holes drilled in the 1970's by Scurry Oil.

All holes were completed with downhole geophysical logging incorporating gamma, density, caliper, deviation, dipmeter and sonic wireline logging undertaken.

Elan Project resource estimate

This update to coal resource estimates for Isolation South is prepared and reported in accordance with the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (JORC Code) 2012 Edition.

Resources for the Isolation South pit shell area are classified according to depth of cover increments in the table below. This demonstrates high potential for open cut mining at favourable strip ratios, with greater than 47% of the total resource occurring at a depth of cover of less than 100 metres, and 40% less than 200 metres.

Isolation South (Northern Area) Resources subset by depth increments

Depth Subset (m)	MEASURED (Mt)	INDICATED (Mt)	MEASURED and INDICATED (Mt)	INFERRED (Mt)	TOTAL (Mt)
0 - 100	6.1	80	87	26	113
100 - 200	0.8	79	79	17	96
200 - 300	-	7	7	12	18
300 - 400	-	2	2	11	13
Total	**6.9**	**168**	**175**	**66**	**240**

Geological interpretation and modelling

The 2020 exploration program was planned and managed by Atrum following industry protocols and best practice. This includes use of independent third-party specialty contractors for drilling, geophysical logging and laboratory testing. Lithological logs, geophysical LAS curves and coal quality data are used to undertake detailed correlation of the coal plies. 3D geological models have been constructed using Dassault Systems Geovia Minex modelling software by Palaris in collaboration with Atrum.

The coordinate system used for geological modelling and GIS systems is the NAD1983 Universal Transverse Mercator (UTM), Zone 11N. A Light Detection and Ranging (LiDAR) survey was flown in July 2020 and the resultant high-resolution topography surface has been incorporated into the geological model.

The structural model was created using the borehole collar data and seam intersections compiled in the Minex borehole database, based on the geological data acquired by Atrum. The collaborative approach between Atrum and Palaris provides significant confidence in the development of the geological models. With the current tight borehole spacing (< 50 to 200m) at Isolation South and depth of boreholes drilled sufficiently deep to encounter the full section of coal, the model provides good representation in three dimensions.

Structure and coal quality grids are based on 25 m mesh (grid cell) size with a scan distance of 5,000 metres. The use of dummy boreholes or trend surfaces has not been used in structural modelling. At this stage, modelling of any overthrust coal seams in faulted areas has not been incorporated into the geological model. After receival of the results of the seismic program, 3D faulting will be incorporated into the updated geological model and next resource estimate (expected 1Q 2020).

Density values modelled are air-dried, true relative density values which are based on crushed samples and take into account density variations resulting from pore spaces in the coal. Density values used for resource estimation are on an air-dried basis and have not been adjusted to in-situ moisture (further work is required to determine a reasonable estimate of in-situ moisture).

Resource classification and limits

Coal resources are generally defined in areas of elevated topography and are generally distanced from rivers and streams, although a 100-metre exclusion buffer is applied adjacent to the Oldman River on the southern extent of the Northern Area resource estimate. Coal seam outcrops define the eastern and northern limits of the resource, while the tenement boundary limits the western down-dip extent of the resource.

A coal ply thickness of 0.3 metres has been applied as the minimum coal thickness for inclusion in the resource estimate. The upper limit of the resource is the limit of weathering surface based on the LiDAR topographical surface minus three metres. The lower limit of the resource is at a maximum depth of 400m below the topographical surface (pit optimisation has not identified any coal that is beyond an economic strip ratio, noting there are limited coal resources below 200 metres depth).

Points of observation used in the classification and estimation of resources are identified as either:

1. Points of observation for coal quality and structure (cored hole with geophysical logging and coal quality data); or
2. Points of observation for structure (RAB open holes with geophysical logging).

Cored holes have been drilled in locations that twin existing RAB holes with the coring intervals targeting the main seam intervals based on depths in the pilot hole. Resource polygons were created around points of observation for both structure and quality as defined in the table below, and subsequently rationalised based on the quantity and location of coal quality data points, isolated data points and variability shown in continuity and grade. Extrapolation distances beyond drill holes in any direction are usually very limited due to tenure, depth of cover and seam subcrop limits, with most Inferred resources located in the north-western area adjacent the tenement boundary and in the southern area near Oldman River.

Isolation South resource classification limits

Classification	Valid Cored Holes with Coal Quality Data	RAB Holes with Geophysical Logs
Measured	Points of observation normally < 400m apart (200m radii), Seam 1 and 2 only	Typically < 150m between holes, Seam 1 and 2 only
Indicated	Points of observation normally < 600 to 800m apart (300-400m radii)	Typically <200m between holes
Inferred	Points of observation normally > 600m apart or lacking valid coal quality data points	Sufficient distribution with maximum 500m extrapolation distance

Geology of the Isolation South area

Isolation South is located approximately 20 km north of the Elan South area within the Elan Project. Historically referred to as the Oldman River Prospect, the main target area at Isolation South occurs on Cabin Ridge, on the McConnell Thrust fault and bounded to the west by the Twin Ridge Thrust. The Oldman River flows south-east through the Isolation South area and dissects the project into northern and southern areas with the majority of the resources in the area north of the river (Cabin Ridge).

The coal seams at Isolation South dip to the west at relatively moderate angles (around 20 degrees). Over most of the project area, the dip angle of the coal seams mimics the topographical surface and represents a dip slope on the western side of the ridge. The coal seams outcrop near the surface expression of the McConnell Thrust fault and in a crescent shaped cropline due to a topographical feature associated with Manystick Creek located midway along Cabin Ridge.

Isolation South contains four main seam groups that have been correlated with high confidence into the plies of Seam 1, Seam 2, Seam 3 and Seam 4 groups. Where intersected, the full sequence of coal seams can present more than 40m of cumulative coal thickness (apparent) without any structural thickening evident, and exceeding 100 metres where thrust faulting and / or structural thickening are prevalent.

Competent Persons Statement

Exploration Results

The information in this document that relates to reporting of Mineral (Coal) Resources for the Isolation South project is based on, and fairly represents, information and supporting documentation prepared by Mr Brad Willis, who is a Member of the Australasian Institute of Mining and Metallurgy (#205328) and is a full-time employee of Palaris Australia Pty Ltd.

Mr Willis has read and understands the requirements of the 2012 Edition of the Australasian Code for Reporting of Exploration Results, Exploration Targets, Mineral Resources and Ore Reserves (JORC Code, 2012 Edition). Mr. Willis is a Competent Person as defined by the JORC Code, 2012 Edition, having twenty years' experience that is relevant to the style of mineralisation and type of deposit described in this document.

Neither Mr. Willis nor Palaris Australia Pty Ltd has any material interest or entitlement, direct or indirect, in the securities of Atrum or any companies associated with Atrum. Fees for the preparation of this report are on a time and materials basis. Mr. Willis has visited the Elan project site with Atrum coal personnel during the exploration programs in 2018 and 2019.

The JORC Code (2012)

Table 1 - Sampling Techniques and Data

Criteria	JORC Code explanation	Commentary
Sampling techniques	▪ *Nature and quality of sampling (eg cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as down hole gamma sondes, or handheld XRF instruments, etc). These examples should not be taken as limiting the broad meaning of sampling.* ▪ *Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.* ▪ *Aspects of the determination of mineralisation that are Material to the Public Report.*	▪ In total, 35 cored drillholes have been completed in 2020 at Isolation South for the collection of large diameter (LD) samples which are logged and sampled for coal quality and washability testwork ▪ Sampling has been undertaken on LD (150mm or 6" diameter) cored holes, as well as HQ core samples from six hydrogeology / geotechnical holes and 18 historical holes ▪ Samples are taken on ply intervals and are manually composited in the laboratory after results for raw light transmittance (LT) ash, ARD and IM are received from sub-samples ▪ Atrum Coal provides the instructions to the laboratory for manually compositing individual ply samples ▪ In order to ensure representivity, coal seams sampled with <80% linear core recovery are not tested at the laboratory ▪ From the 125 RAB holes completed to date in the 2020 program, drill cuttings have been collected at 1m depth intervals. These samples are not intended to be used for coal quality testwork
Drilling techniques	▪ *Drill type (eg core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc) and details (eg core diameter, triple or standard tube, depth of diamond tails, face-sampling bit or other type, whether core is oriented and if so, by what method, etc).*	▪ 35 LDC holes were completed between February and October 2020 (150mm or 6" diameter core) ▪ The LD cored holes are drilled with PDC or tungsten bits and use double tube core barrels (triple tube core barrels with LD core are uncommon in Canada) ▪ The LD holes were geophysically logged to total depth in the open hole, with seam and sample intervals adjusted to the geophysical log depths (where necessary) ▪ The 125 RAB completed in 2020 are percussion (rotary air blast) boreholes with a 4 1/2" diameter hammer drill bit ▪ All of the boreholes completed in 2020 were geophysically logged to total depth in the open hole, or through HQ drill pipe in the event of severe hole instability
Drill sample recovery	▪ *Method of recording and assessing core and chip sample recoveries and results assessed.* ▪ *Measures taken to maximise sample recovery and ensure representative nature of the samples.* ▪ *Whether a relationship exists between sample recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.*	▪ The LD cored boreholes were geophysically logged and cored seam intervals are calibrated to the geophysical log data ▪ Achieving consistently high core recoveries can be difficult due to the fractured and friable nature of the coal seams, however the 2020 LDC program was very successful ▪ The large diameter (6" core size) coring programs at Elan have generally achieved better core recoveries than PQ or HQ cores, and appears to be a more suitable coring technique for this type of coal

Criteria	JORC Code explanation	Commentary
		▪ Core recoveries were recorded and cumulative tallies kept. Any samples from seams with less than 80% linear recovery (relative to geophysical log depths) are not tested by the laboratory ▪ Cored boreholes were geophysically logged to calculate linear recovery, and ensure recovered core lengths are representative of the full seam
Logging	▪ *Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies.* ▪ *Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.* ▪ *The total length and percentage of the relevant intersections logged.*	▪ Core samples were logged in detail including lithology, brightness, sedimentary features and defects ▪ Boreholes were geophysically logged with downhole tools including long and short spaced density, caliper and gamma, sonic, deviation and dipmeter ▪ The seam intervals in RAB holes have been determined from the geophysical log signatures ▪ Six HQ core holes have been geotechnically logged to assist with geotechnical aspects of the PFS mine design
Sub-sampling techniques and sample preparation	▪ *If core, whether cut or sawn and whether quarter, half or all core taken.* ▪ *If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.* ▪ *For all sample types, the nature, quality and appropriateness of the sample preparation technique.* ▪ *Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.* ▪ *Measures taken to ensure that the sampling is representative of the in situ material collected, including for instance results for field duplicate/second-half sampling.* ▪ *Whether sample sizes are appropriate to the grain size of the material being sampled.*	▪ All core sampled is sent to the testing lab (no slabbing or splitting of core is undertaken) ▪ The LD cores are subject to drop shatter testing, sizing analysis and subjected to float sink testing by size fraction (50mm x 4mm, 4mm x 1mm, 1.0mm x 0.25mm and -0.25mm), with raw coal analysis being undertaken after completion of the initial drop shatter and dry sizing. ▪ Clean coal composites are typically prepared at selected cut-points for each size fraction as directed by Atrum Coal, for detailed coal quality and carbonisation testing. ▪ Carbonisation samples are generally seam blend composites, with varying proportions of each seam group, as directed by Atrum Coal ▪ The LD core provides a much better representation of size fractions relative to smaller diameter core samples and is preferred for coal preparation design
Quality of assay data and laboratory tests	▪ *The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.* ▪ *For geophysical tools, spectrometers, handheld XRF instruments, etc, the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc.* ▪ *Nature of quality control procedures adopted (eg standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (ie lack of bias) and precision have been established.*	▪ Analytical testwork (raw, washability and initial clean coal testing) undertaken by nationally accredited laboratory GWIL Birtley of Calgary, generally to ASTM standards. The lab participates in International Canadian Coal Laboratories Round Robin series (CANSPEX) and test results are consistently ranked in preferred groupings. ▪ The Competent Person undertook a site visit and tour of the GWIL Birtley laboratory in 2018 ▪ Drop shatter, sizing analysis and float sink testing is undertaken on LD samples according to testing protocols designed by Atrum Coal ▪ Clean coal composites are prepared by Birtley and forwarded to COALTECH Petrographic Associates, USA (for clean coal characterisation tests) ▪ Blended products are designed by Atrum and prepared by Birtley for delivery to two world-class coal carbonisation laboratories in Europe; DMT Coal Coke Group (Germany) and INCAR (Spain)
Verification of sampling and assaying	▪ *The verification of significant intersections by either independent or alternative company personnel.* ▪ *The use of twinned holes.* ▪ *Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.* ▪ *Discuss any adjustment to assay data.*	▪ Geological data is collected in line with Atrum Coal's exploration procedures and guidelines ▪ Sample interval depths are as measured by the field geologist (drillers depths), and adjusted to align with geophysical log depths, while measured sample interval thicknesses are retained ▪ GWIL Birtley undertakes preliminary checks of assay data using regression analysis, and the data is checked by Atrum Coal and Palaris geologists ▪ All data has been encoded, collated and cross checked by Atrum Coal, and later by Palaris ▪ Twinning of existing rotary air blast (RAB) holes is used for targeted coring of coal seams in the LD cored holes. The twinned cored holes are also geophysically logged

Criteria	JORC Code explanation	Commentary
		▪ Coal quality data (raw, washability and clean coal) is checked and validated by metallurgical consultants A&B Mylec ▪ Reported results in this announcement have not been adjusted in any way, shape or form
Location of data points	▪ *Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.* ▪ *Specification of the grid system used.* ▪ *Quality and adequacy of topographic control.*	▪ The collar locations of the LD boreholes have been surveyed using Trimble surveying technology ▪ The co-ordinate system is UTM projected grid NAD83 Zone 11N ▪ The topographical surface is sourced from a LiDAR survey and has a reasonable correlation with borehole collars (in 2020 a new LiDAR survey has been flown and incorporated into the geological model) ▪ RAB and LDC hole collars and associated borehole details are provided in Appendix A of this announcement
Data spacing and distribution	▪ *Data spacing for reporting of Exploration Results.* ▪ *Whether the data spacing and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied.* ▪ *Whether sample compositing has been applied.*	▪ RAB hole density has been increased to a typical spacing of <100 – 200 metres between holes within the pit shell extent defined during the Scoping Study ▪ The 35 LDC holes drilled are located within the Scoping Study pit shell area of Isolation South and are typically spaced at approximately 200 to 400m apart ▪ The data spacing of RAB and cored coal quality holes provides sufficient confidence in geological and grade continuity for the respective proportions of Measured, Indicated and Inferred resources, and to underpin the PFS mine design. No reserves have been stated for the Elan project. ▪ Resource classification and estimation will be revisited at completion of the laboratory testing program and seismic survey (Q1 2021) ▪ Sample compositing (into seam intervals) is generally manually undertaken in the laboratory after instructions are provided by Atrum Coal. ▪ Additional compositing is undertaken in Minex software and requires 80% linear recovery as specified in the Minex BHDB settings, while composite values are mass weighted using both thickness and true RD as weighting variables
Orientation of data in relation to geological structure	▪ *Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.* ▪ *If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if material.*	▪ The 35 LD holes completed in 2020 have been drilled vertically, twinning existing vertical RAB holes with targeted coring intervals ▪ The RAB holes completed in 2020 are mostly vertical, with some inclined holes as shown in the borehole collar table in Appendix 1 ▪ Electronic deviation data from each hole is imported into the Minex borehole database. The geological modelling software captures the downhole inclination and deviation, and structural modelling assists in correcting the apparent seam thicknesses to true thicknesses in model grids ▪ 3D representation is relatively good with the 2020 infill drilling completed, and will improve further with ongoing infill drilling ▪ A seismic survey was also undertaken in 2020, and the results will be incorporated into the next model update
Sample security	▪ *The measures taken to ensure sample security.*	▪ The LD core is photographed, sampled, labelled and bagged before being submitted to the testing laboratories ▪ Samples have a unique sample number that is provided on tags in the bag, outside the bag and in separate digital and hard copy sample advice. Each item of advice lists project name, borehole, top and base of sample and sample number ▪ The laboratory records provided include sample identification numbers and weighed sample mass

Criteria	JORC Code explanation	Commentary
		▪ All measures are taken to ensure sample security represents best practice by industry standards
Audits or reviews	▪ *The results of any audits or reviews of sampling techniques and data.*	▪ Palaris representatives visited the site in 2018 and 2019 to oversee the drilling program, and ensure a high standard of geological data is provided by Atrum Coal's geologists ▪ Processing consultants Sedgman have reviewed and provided input into the sizing and washability components of the testing program ▪ Coal quality data (raw, washability and clean coal) is checked and validated by metallurgical consultants A&B Mylec, requesting the testing laboratories to check and retest any anomalies identified

Table 1 – Reporting of Exploration Results

Criteria	JORC Code explanation	Commentary
Mineral tenement and land tenure status	▪ *Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.* ▪ *The security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to operate in the area.*	▪ The Isolation South coal agreements were granted to Elan Coal Ltd in 2012/13, Elan Coal was acquired by Atrum Coal in March 2018. Coal Lease agreements provide the right to exclusively explore the land within the boundaries of the lease and are granted for a term of 15 years (with an option to extend at expiry) ▪ The Property falls within the Rocky Mountain Forest Reserve, which is managed by the Alberta Government ▪ Exploration Permits for Isolation South were granted to Atrum Coal by the Alberta Energy Regulator (AER) covering exploration activities undertaken in 2020
Exploration by other parties	▪ *Acknowledgment and appraisal of exploration by other parties.*	▪ Scurry-Rainbow Oil Limited (Scurry) undertook exploration of the Isolation South area in the 1970s, then referred to as the Oldman River prospect. ▪ Exploration activities included bulldozer assisted trenching, establishment of access roads, numerous adits and 19 HQ size fully cored holes for a total of 3,286m of coring. ▪ The cored holes were accompanied by geophysical logging and seam intervals interpreted from geophysical log depths
Geology	▪ *Deposit type, geological setting and style of mineralisation.*	▪ Atrum Coal's Elan project is located in the province of Alberta, in the Crowsnest Pass area of the Crowsnest Coalfield, on the Front Ranges of the Canadian Rocky Mountains ▪ Coal-bearing sedimentary sequences occur within the Mist Mountain Formation of the Late Jurassic to Early Cretaceous aged Kootenay Group, which was strongly deformed during the Late Cretaceous Laramide Orogeny. This resulted in the development of north to northwest-trending folds and steeply dipping reverse faults. The project is located within the Rocky Mountain Thrust Belt, west of the Livingstone Thrust fault and the project extent encompasses the McConnell thrust sheet ▪ Major folds regionally trend in a northerly direction. Secondary local thrusts typically occur within the area, generally determining the distribution and outcrop of coal seams along the thrust fault zones. In many areas of the Crowsnest Coalfield, structure is principally the controlling factor in resource development.
Drill hole Information	▪ *A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes:* o *easting and northing of the drill hole collar* o *elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar* o *dip and azimuth of the hole* o *down hole length and interception depth*	▪ This information is provided for all RAB and LDC holes completed in 2020 at Isolation South, in Appendix 1 of this ASX announcement

Criteria	JORC Code explanation	Commentary
	○ *hole length.*	
Data aggregation methods	▪ *In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (eg cutting of high grades) and cut-off grades are usually Material and should be stated.* ▪ *Where aggregate intercepts incorporate short lengths of high grade results and longer lengths of low grade results, the procedure used for such aggregation should be stated and some typical examples of such aggregations should be shown in detail.* ▪ *The assumptions used for any reporting of metal equivalent values should be clearly stated.*	▪ No cut-off grades were applied to the exploration results in this announcement ▪ Composite or seam coal quality values are calculated by mass weighting the quality parameters by thickness and RD ▪ Stated coal quality accompanying the resource estimates is determined through grid models that account for spatial variability, and weighted by resource tonnes
Relationship between mineralisation widths and intercept lengths	▪ *These relationships are particularly important in the reporting of Exploration Results.* ▪ *If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.* ▪ *If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (eg 'down hole length, true width not known').*	▪ The results tabulated in this announcement are apparent thicknesses as recorded in vertical drill holes and may be different to the true thickness of the seams ▪ Seam dips are generally moderate (20 to 25 degrees) to the west at Isolation South ▪ True seam thickness is determined through use of borehole deviation survey data, seismic survey, and updated structural interpretation / fault modelling
Diagrams	▪ *Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported These should include, but not be limited to a plan view of drill hole collar locations and appropriate sectional views.*	▪ Previous ASX announcements have provided progressive updates on Exploration Results and Coal Resources at Isolation South ▪ Borehole locations plans are provided along with drill hole locations from the 2020 program
Balanced reporting	▪ *Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.*	▪ To ensure balance reporting of Exploration Results in previous ASX announcements, the total coal thicknesses stated are summarised along with the hole location for all holes drilled in 2020 ▪ Coal quality variables are weighted by resource tonnes, although coal quality statistics have been provided to show minimum and maximum values for each seam ▪ To ensure balance reporting of Exploration Results, Appendix 1 includes the results for all RAB holes drilled at Isolation South in 2020
Other substantive exploration data	▪ *Other exploration data, if meaningful and material, should be reported including (but not limited to): geological observations; geophysical survey results; geochemical survey results; bulk samples – size and method of treatment; metallurgical test results; bulk density, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances.*	▪ A 2D seismic of five lines and totalling 5 line km was completed in September 2020, with the data currently being processed ▪ Previous ASX announcements have provided progressive updates on Exploration Results and Coal Resources at Isolation South ▪ Metallurgical testing and studies are ongoing and will be incorporated into the PFS coal processing design ▪ Atrum Coal geologists have undertaken a significant surface mapping program in 2019, collecting data points from outcrops of the Cadomin Formation and coal seams of the Mist Mountain Formation
Further work	▪ *The nature and scale of planned further work (e.g. tests for lateral extensions or depth extensions or large-scale step-out drilling).* ▪ *Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.*	▪ While drilling activities are complete for 2020, the GWIL Birtley Calgary continues to process the large quantity of coal core samples that require sample preparation, raw quality testwork, attrition and float sink testing, and clean coal testwork that will continue into Q1 2021. ▪ Incorporate further laboratory testing data as it is received into updated raw and clean coal quality grid models ▪ The data acquired in the 2020 program will support geotechnical, coal quality and washability requirements to support the PFS work that has commenced and is ongoing ▪ As part of the PFS, a review of any data gaps and determination of required infill and coal quality drilling in 2021 will be undertaken (where possible to upgrade Measured or Indicated resources, minimizing any residual Inferred based on the PFS pit design and

Criteria	JORC Code explanation	Commentary
		production target) ▪ Incorporation of the results of the seismic survey into fault interpretation and updated geological model ▪ Palaris continues with the interpretation of data and updating 3D geological models of Isolation South, with an update to the resource estimate planned for Q1 2021 incorporating updated fault modelling and coal quality data.

Table 1 - Estimation and Reporting of Mineral Resources

Criteria	JORC Code explanation	Commentary
Database integrity	▪ *Measures taken to ensure that data has not been corrupted by, for example, transcription or keying errors, between its initial collection and its use for Mineral Resource estimation purposes.* ▪ *Data validation procedures used.*	▪ Geological data was acquired and collated by Atrum Coal, who undertake validation checks on each hole before the geological logs are finalised ▪ Geological data has been cross checked and re-interpreted by Palaris and used in the construction of geological models ▪ Structure and coal quality grids and data points are checked for outliers and addressed, or potential anomalies are omitted ▪ Data is currently stored in the Minex borehole database system, and has compatibility with formats used by Atrum Coal ▪ Coal quality data (raw, washability and clean coal) is checked and validated by metallurgical consultants A&B Mylec, requesting the testing laboratories to check and retest any anomalies identified ▪ Some historical data is relied upon and assumes that the original acquisition and management of data is sound ▪ Borehole seam profiles with lithology, seam intervals and coal quality results are produced to check validity of data
Site visits	▪ *Comment on any site visits undertaken by the Competent Person and the outcome of those visits.* ▪ *If no site visits have been undertaken indicate why this is the case.*	▪ The Competent Person has undertaken a site visit to the Elan project in 2018 and 2019 to inspect the site and drilling progress at Elan South and Isolation South, and to ensure alignment between Atrum Coal's geological data and Palaris' modelling and resource estimation processes ▪ The visits have been in relation to exploration assistance, geological modelling, and assisting with data QA/QC for model updates, and JORC resource estimates
Geological interpretation	▪ *Confidence in (or conversely, the uncertainty of) the geological interpretation of the mineral deposit.* ▪ *Nature of the data used and of any assumptions made.* ▪ *The effect, if any, of alternative interpretations on Mineral Resource estimation.* ▪ *The use of geology in guiding and controlling Mineral Resource estimation.* ▪ *The factors affecting continuity both of grade and geology.*	▪ Confidence in the geological data is considered to be sound, based on the level of structural complexity at Isolation South. ▪ Correlations have been established in detail and in most cases the seam correlations are straightforward ▪ Correlations can sometimes be difficult where seams are fault thickened or affected. Seam correlation has been a joint exercise between Atrum Coal and Palaris ▪ Coal seam correlations have been cross checked by geophysical logging and identifying characteristic signatures, which decreases the chance of miscorrelation. ▪ The only remaining area which may have some impact on resource tonnes is a zone of thrust faulting. While the zone has been well delineated by drilling, the results need to be aligned with the recent seismic survey to allow discreet modelling of the overthrust coal zones.
Dimensions	▪ *The extent and variability of the Mineral Resource expressed as length (along strike or otherwise), plan width, and depth below surface to the upper and lower limits of the Mineral Resource.*	▪ The size and extent of the resource can be visualised in the resource classification plans and cross sections in the appendices. The area defined by the resource estimate is ~6km along strike and up to 1.8km across strike ▪ The resource extents are limited by tenure boundaries in the west, 100m offset to the river in the south, and by seam outcrops in the east and north. ▪ In all areas, the bedding strikes roughly north – south along well defined ridgelines, and controlled by westerly dipping thrust faults, synclines and anticlines.

Criteria	JORC Code explanation	Commentary
		▪ The coal seams of the Mist Mountain Formation dip towards the west with dips ranging from 20 - 25 degrees on the western limb, and are brought to the surface through on the McConnell Thrust ▪ The upper limit of the resource is the limit of weathering surface which is the LiDAR topographical surface minus 3 metres ▪ The lower limit of the resource is at a maximum depth of 400m below topography.
Estimation and modelling techniques	▪ *The nature and appropriateness of the estimation technique(s) applied and key assumptions, including treatment of extreme grade values, domaining, interpolation parameters and maximum distance of extrapolation from data points. If a computer assisted estimation method was chosen include a description of computer software and parameters used.* ▪ *The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data.* ▪ *The assumptions made regarding recovery of by-products.* ▪ *Estimation of deleterious elements or other non-grade variables of economic significance (eg sulphur for acid mine drainage characterisation).* ▪ *In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.* ▪ *Any assumptions behind modelling of selective mining units.* ▪ *Any assumptions about correlation between variables.* ▪ *Description of how the geological interpretation was used to control the resource estimates.* ▪ *Discussion of basis for using or not using grade cutting or capping.* ▪ *The process of validation, the checking process used, the comparison of model data to drill hole data, and use of reconciliation data if available.*	▪ Geovia Minex software was used to create structural and coal quality grids, which are based on 25 m mesh (grid cell) size with a scan distance of 5,000 metres. ▪ Resource classification was undertaken using the methodology as outlined in the Appendix of this announcement ▪ There are some areas of extrapolated resources beyond the furthest boreholes located in the western down-dip areas ▪ Comparisons between previous estimates are provided in this announcement ▪ Grade cut-offs were not applied globally as all coal seams would be washed and blended into various products, consistent with Teck's mines in the Elk Valley, BC ▪ RD values used in resource estimation are based on air-dried true RD values from the laboratory. For historical holes where RD was unavailable, a regression between raw ash (ad) and laboratory tested true RD (air-dried) has been used to estimate RD from raw ash. ▪ The estimate has been internally audited and deemed reproducible. Resource classification has also been reviewed in detail by Atrum Coal geologists.
Moisture	▪ *Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.*	▪ RD values used in resource estimation are based on air-dried true RD values from the laboratory. No adjustment to in-situ moisture has been attempted at this stage until a reliable estimate of in-situ moisture can be provided. ▪ All quality parameters are reported on an air-dried basis unless stated otherwise
Cut-off parameters	▪ *The basis of the adopted cut-off grade(s) or quality parameters applied.*	▪ Grade cut-offs were not applied globally as blending and / or coal processing would be used to manage product quality attributes ▪ There are no seams included in the resource estimate that have poor coal quality attributes that may warrant coal quality cut-offs being applied
Mining factors or assumptions	▪ *Assumptions made regarding possible mining methods, minimum mining dimensions and internal (or, if applicable, external) mining dilution. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential mining methods, but the assumptions made regarding mining methods and parameters when estimating Mineral Resources may not always be*	▪ The potential mining method and the PFS mine plan is based on open cut mining due to the low stripping ratios ▪ Open cut resources are limited by a minimum 0.3m seam thickness, between the base of weathering and maximum 400 m depth, although the seams only reach greater depths adjacent to the western tenement boundary ▪ Open cut resources have not been limited by stripping ratios as pit optimisation has not identified coal that is beyond economic limits ▪ With the exception of the Oldman River at Isolation South, no

Criteria	JORC Code explanation	Commentary
	rigorous. Where this is the case, this should be reported with an explanation of the basis of the mining assumptions made.	surface constraints have been identified or used to limit or constrain the extent of the resource estimate ▪ Mining losses and dilution has not been factored in to the resource estimate
Metallurgical factors or assumptions	▪ *The basis for assumptions or predictions regarding metallurgical amenability. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential metallurgical methods, but the assumptions regarding metallurgical treatment processes and parameters made when reporting Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the metallurgical assumptions made.*	▪ Testing of clean coal quality and potential product types is ongoing and will continue to be reported to the market. ▪ Clean coal and carbonisation testing has been completed and demonstrates high potential for hard coking coal with CSR range of 69 to 74 %, for further details please see ASX announcement *Isolation South Tier 1 HCC* dated 7 October 2020 ▪ The primary products are expected to be premium low to mid volatile hard coking coals suitable for the export market, with a marketing strategy being developed as part of the ongoing PFS ▪ Some minor volumes of secondary thermal or PCI product may also be produced for the export market, with further work required during the PFS to quantify ▪ Detailed sizing, washability and clean coal composite testing is continuing with samples from Isolation South being tested.
Environmental factors or assumptions	▪ *Assumptions made regarding possible waste and process residue disposal options. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider the potential environmental impacts of the mining and processing operation. While at this stage the determination of potential environmental impacts, particularly for a greenfields project, may not always be well advanced, the status of early consideration of these potential environmental impacts should be reported. Where these aspects have not been considered this should be reported with an explanation of the environmental assumptions made.*	▪ An assessment of initial out of pit dump spaces is currently conducted as part of the PFS and is being led by SRK Consulting ▪ The PFS is currently progressing, and will include a detailed review of environmental factors for the Isolation South project area ▪ Environmentally sensitive areas are being considered during the current mine planning and PFS being undertaken ▪ Any coal mine development would need to go through the process of preparing an Environmental Impact Assessment (EIA) and submission of an application to the Alberta Energy Regulator (AER) under the Environmental Protection and Enhancement Act (EPEA) and Canadian Environmental Assessment Act 2012 (CEAA).
Bulk density	▪ *Whether assumed or determined. If assumed, the basis for the assumptions. If determined, the method used, whether wet or dry, the frequency of the measurements, the nature, size and representativeness of the samples.* ▪ *The bulk density for bulk material must have been measured by methods that adequately account for void spaces (vugs, porosity, etc), moisture and differences between rock and alteration zones within the deposit.* ▪ *Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.*	▪ All coal quality parameters are reported on an air-dried basis unless otherwise stated ▪ True relative density values (air-dried) basis are used in the geological modelling and resource estimation, and are based on a crushed sample that accounts for void spaces in the coal ▪ For historical samples, regression between raw ash (ad) and laboratory tested RD (air-dried) has been used to calculate RD from raw ash. ▪ Bulk density assumptions have not been made
Classification	▪ *The basis for the classification of the Mineral Resources into varying confidence categories.* ▪ *Whether appropriate account has been taken of all relevant factors (i.e. relative confidence in tonnage/grade estimations, reliability of input data, confidence in continuity of geology and metal values, quality, quantity and distribution of the data).* ▪ *Whether the result appropriately reflects the Competent Person's view of the deposit.*	▪ Resource polygons were rationalised according to the distribution and variability in coal quality data points, and the classification downgraded if coal quality data was sparse or highly variable. ▪ Seams 3 and 4 are currently limited to maximum Indicated classification pending updated structural interpretation and modelling of faults which impact those seam groups. ▪ Any extrapolated coal typically exists down-dip of existing data points, and is limited as much as possible ▪ The factors used in the rationalisation and determination of final resource classification polygons included: age and reliability of the data, consideration of 3D representivity and removal of isolated points of observation, quantity and location of coal quality data points, variability shown in continuity and grade, and likelihood of the coal seams being

Criteria	JORC Code explanation	Commentary
		mined ▪ In the view of the Competent Person, the resource classification reflects the level of geological confidence achieved through the 2020 and 2019 drilling programs
Audits or reviews	▪ *The results of any audits or reviews of Mineral Resource estimates.*	▪ Resource estimates were undertaken in three passes to ensure repeatability, with previous versions saved for reference ▪ The resource estimate has been internally peer reviewed, with a review of geological models and resource classification polygons undertaken by Atrum Coal geologists in December 2019 to January 2020.
Discussion of relative accuracy/ confidence	▪ *Where appropriate a statement of the relative accuracy and confidence level in the Mineral Resource estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the resource within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors that could affect the relative accuracy and confidence of the estimate.* ▪ *The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages, which should be relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used.* ▪ *These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.*	▪ The drill spacing is relatively tight at Isolation South. The spacing of structure holes is generally <200m which allows for good structural definition, with vastly improved distribution of coal quality data points (generally 200 – 400m apart) ▪ In the view of the Competent Person, the resource classification reflects the level of geological confidence achieved through the 2020 and 2019 drilling programs ▪ The level of confidence in the exploration and data acquisition is high based on the level of structural complexity and success in achieving high core recoveries ▪ Geostatistical analysis would be difficult due to the structural complexity and inclined nature of boreholes. It is recognised that Western Canadian coal deposits are often structurally complex (relative to Australian coal projects) and requires a much tighter borehole spacing to achieve the same level of geological confidence. This is reflected in the borehole spacing achieved and also the resource classification methodology. ▪ Atrum Coal and the Competent Person aim to apply some conservatism to the borehole spacing and resource classification in light of the complexity.

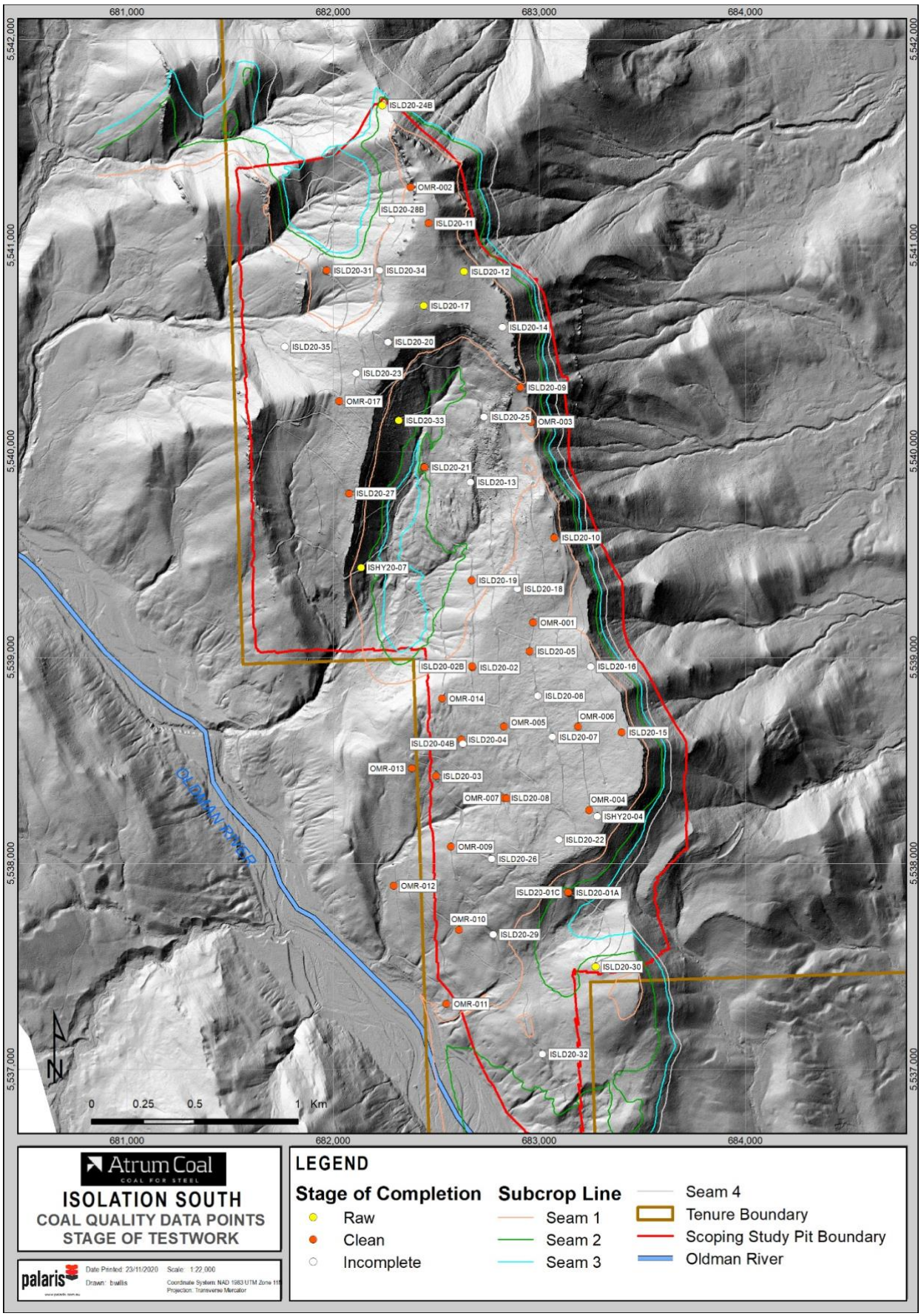

Figure 1: Isolation South LDC drilling location plan

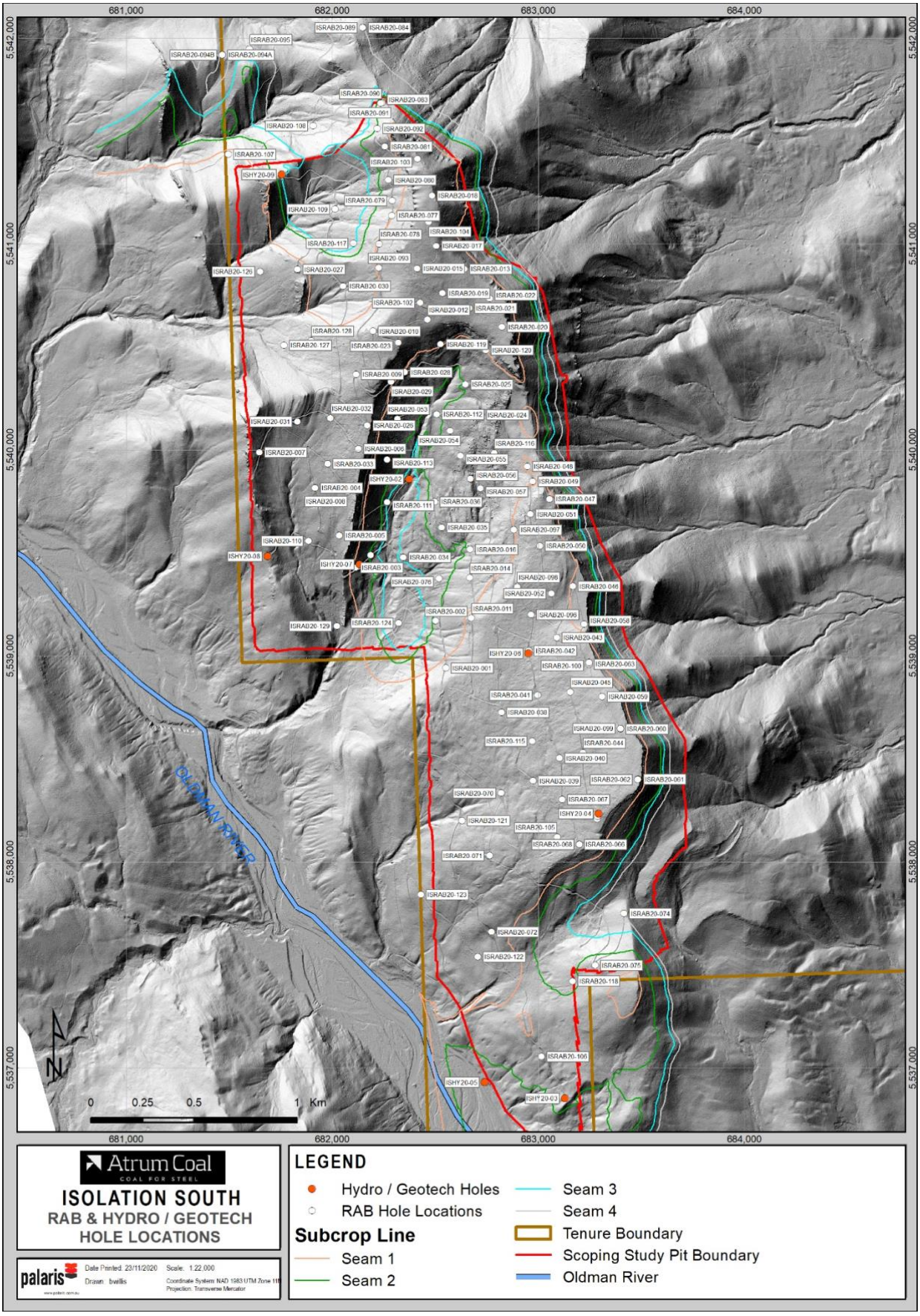

Figure 2: Isolation South RAB and hydro/geotechnical drilling location plan

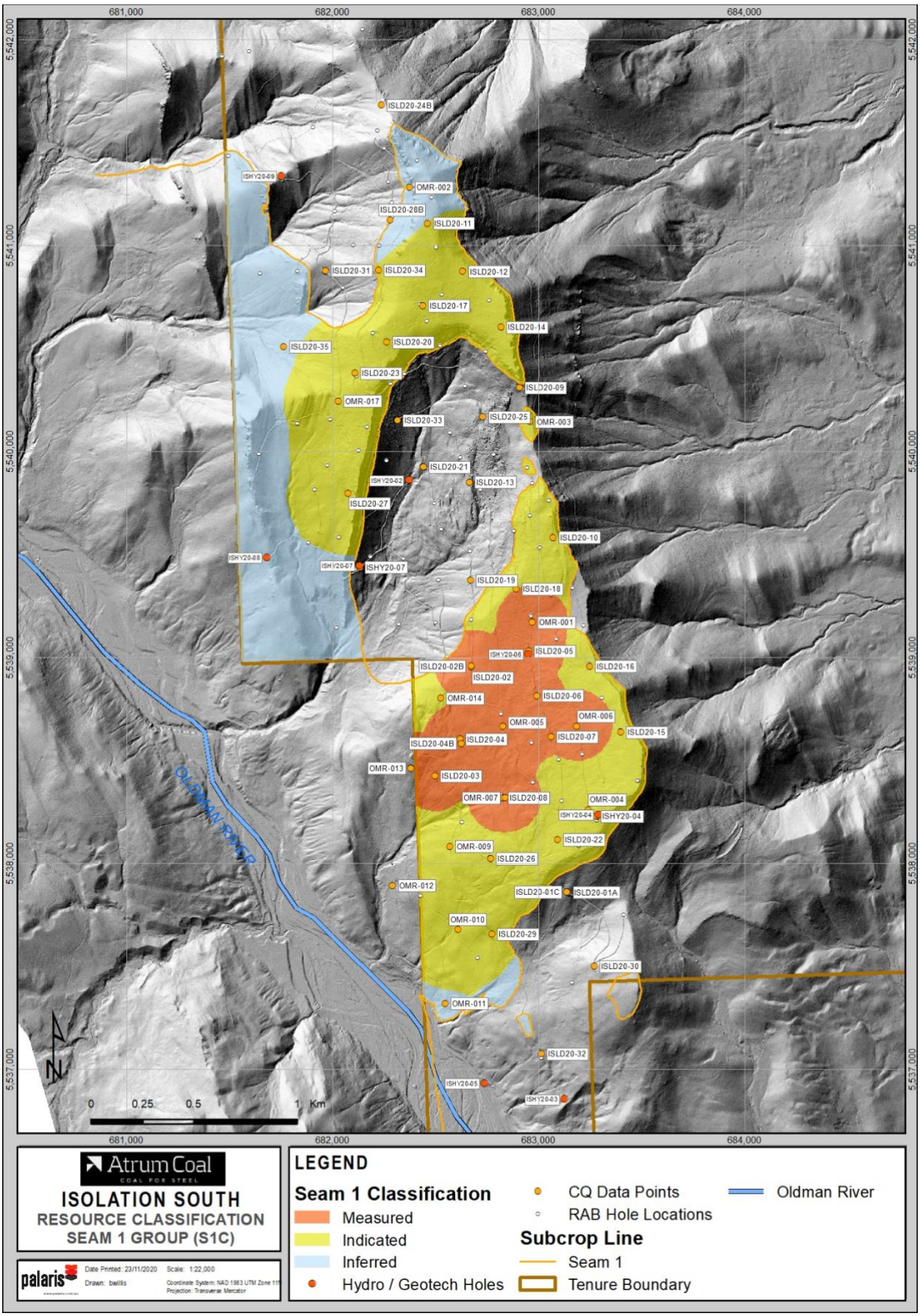

Figure 3: Seam 1 resource classification polygons

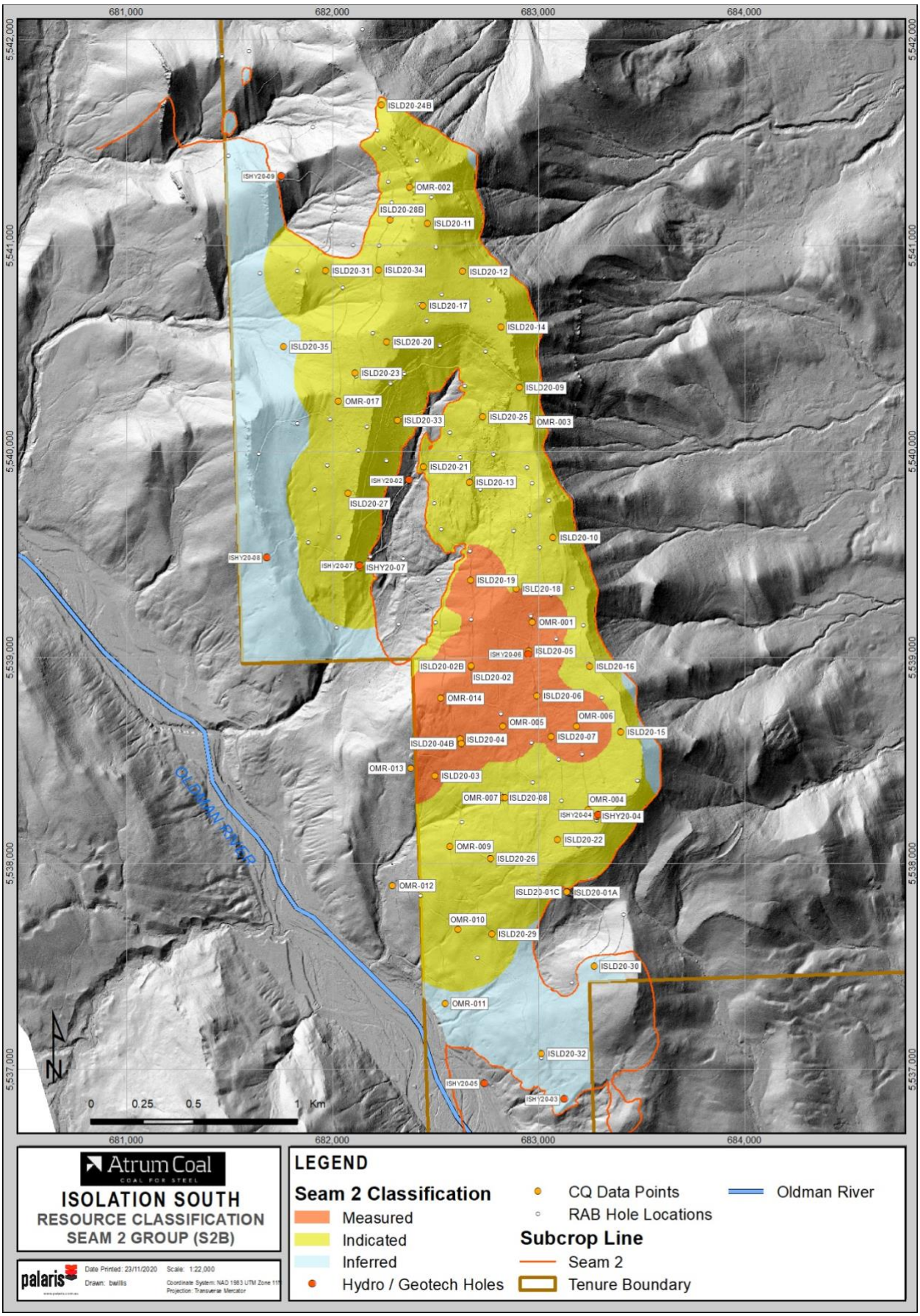

Figure 4: Seam 2 resource classification polygons

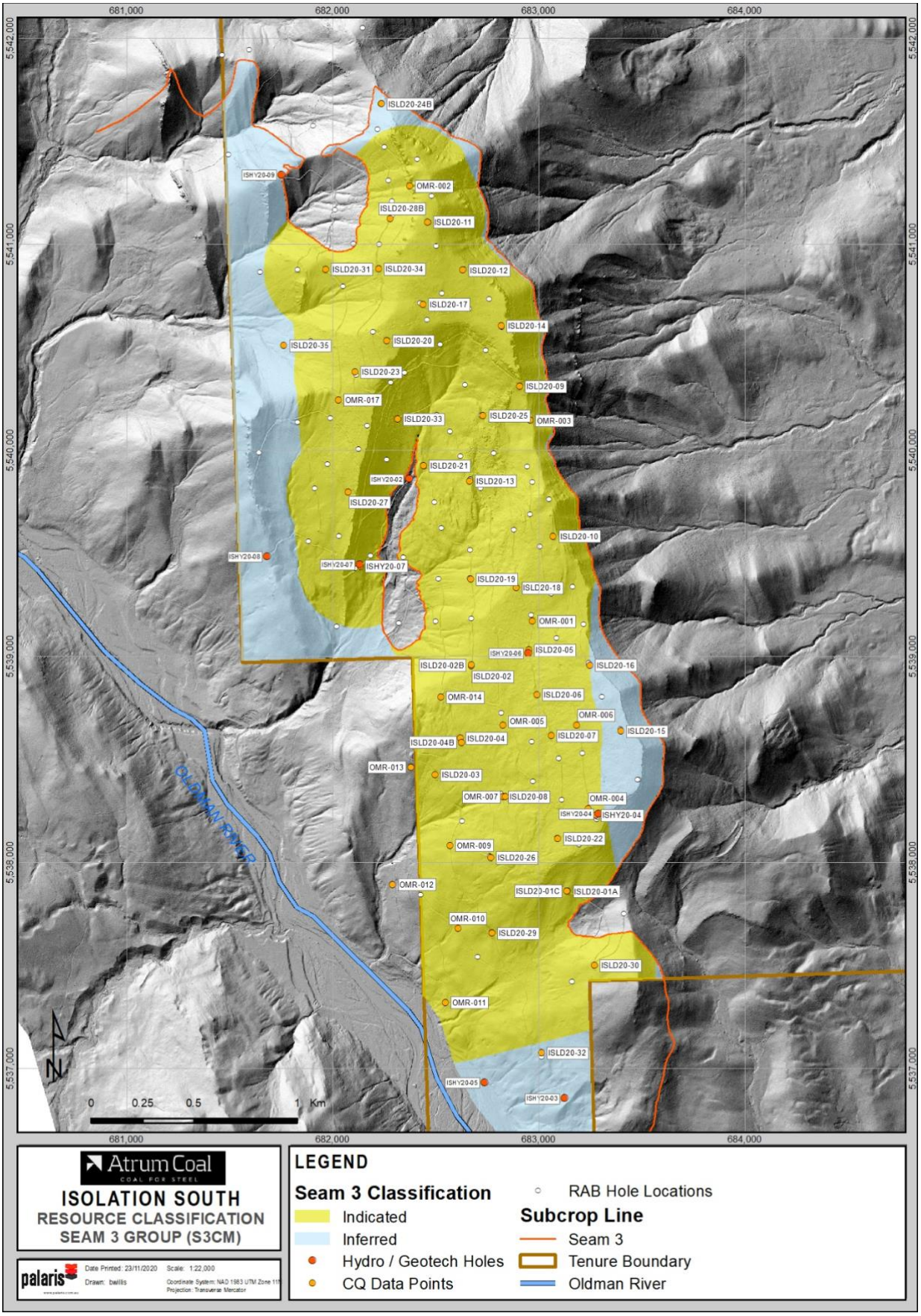

Figure 5: Seam 3 resource classification polygons

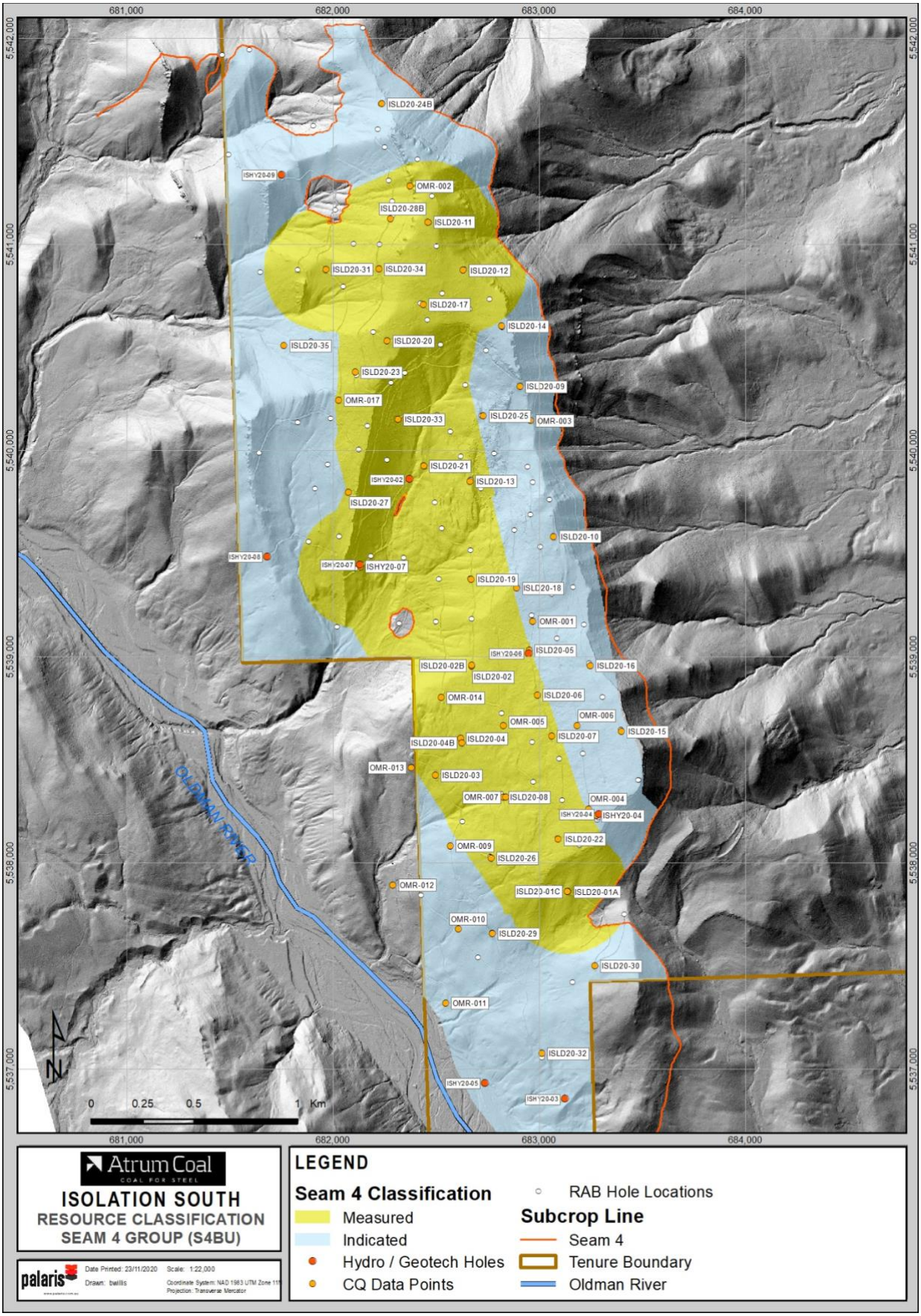

Figure 6: Seam 4 resource classification polygons

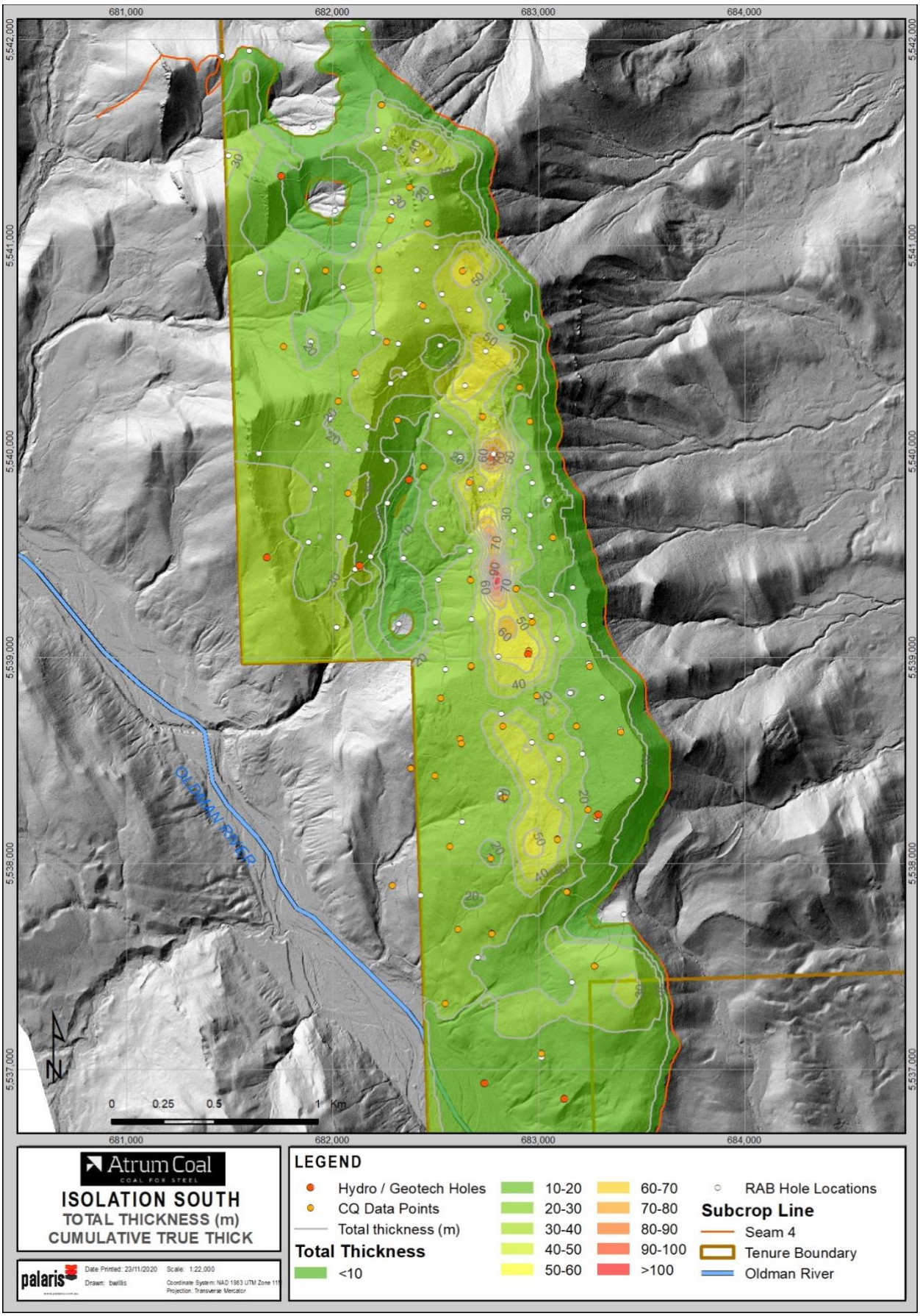

Figure 7: Total cumulative coal thickness (true thickness)

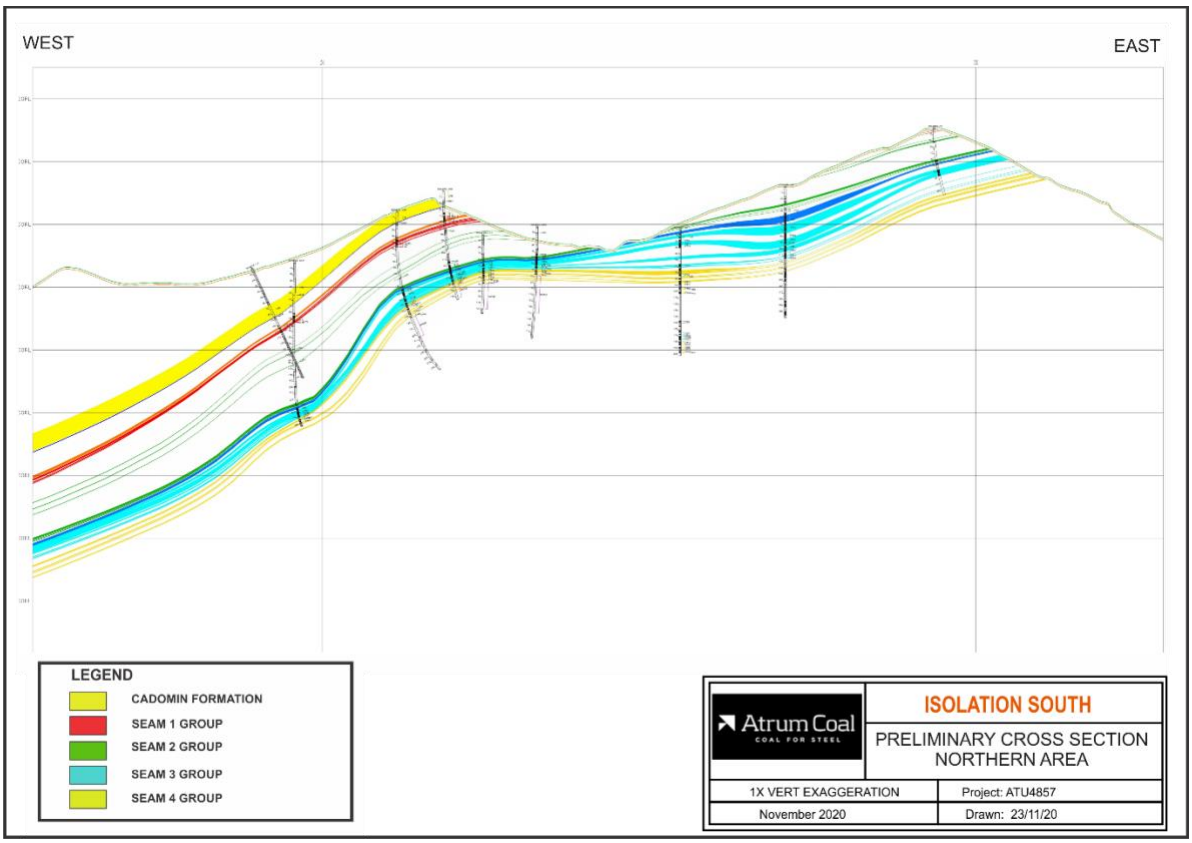

Figure 8: West-east model cross section – Northern Area

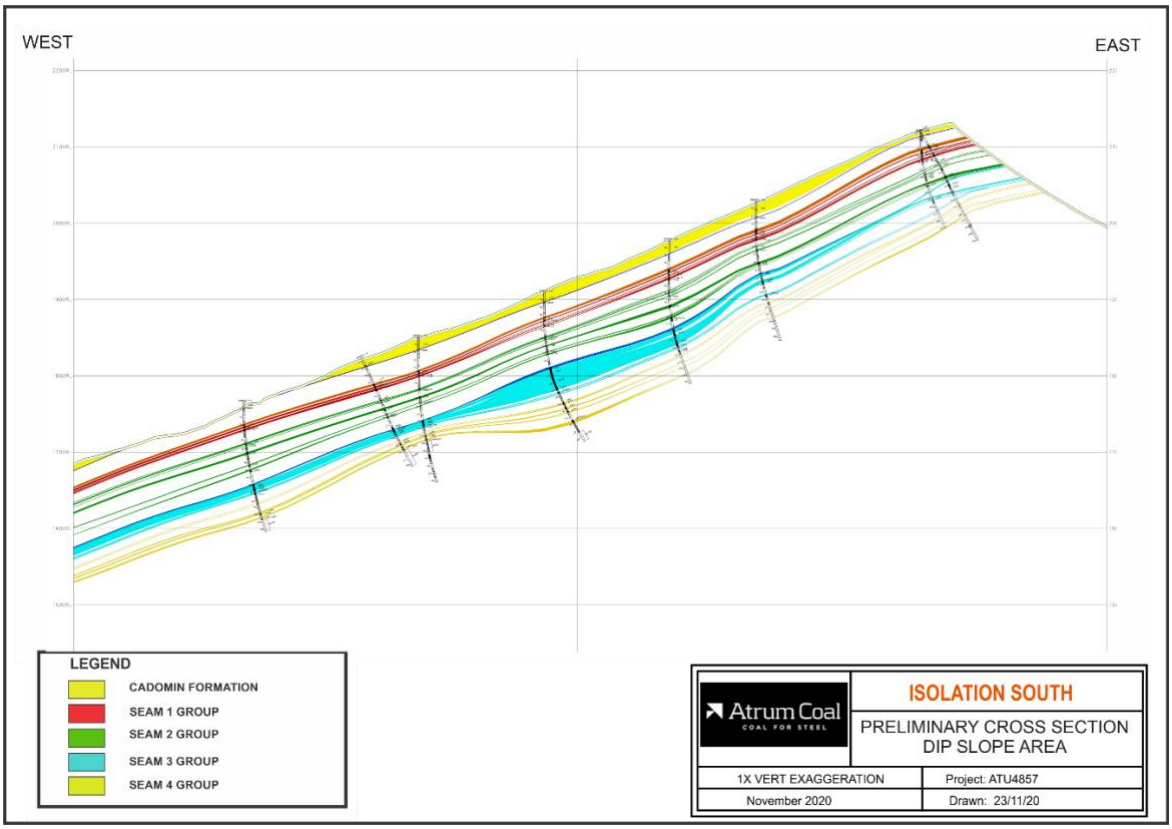

Figure 9: West-east model cross section – Southern Area

Coal Resources by Ply with Coal Quality Attributes (raw)

SEAM	Resource (Mt)	Thick (m)	RD (ad)	IM % (ad)	Ash % (ad)	VM % (ad)	FC % (ad)	CSN	TS %
S1C	13	2.82	1.42	0.9	15.4	26.1	57.8	5	0.86
S1CL	5	0.52	1.53	0.9	30.2	22.7	46.2	5	0.80
S1B	2	0.97	1.58	0.9	35.1	21.0	43.5	4.5	0.69
S1BL	5	0.52	1.47	0.8	23.6	24.5	51.0	6	0.88
S1AU	5	0.89	1.56	0.7	31.7	22.9	44.6	5.5	0.58
S1AL	1	0.88	1.52	0.8	29.5	22.2	46.4	6	0.70
S2CU	1	0.62	1.45	1.0					
S2C	5	0.83	1.45	0.6	20.6	25.0	54.1	5	0.50
S2CL	3	0.59	1.44	0.8	21.6	23.6	54.1	6	0.86
S2B	16	2.26	1.46	0.9	19.5	22.2	57.5	3	0.45
S2A	1	0.56	1.45	1.0	27.7	25.2	46.6	5	1.54
S2AL	1	0.78	1.45	1.0	32.7	23.7	43.0	4	1.59
S3D	20	2.63	1.51	0.8	25.5	21.0	52.6	2.5	0.36
S3CU	36	4.50	1.50	1.3	23.6	21.5	53.1	2	0.35
S3CM	56	7.02	1.45	0.9	19.0	22.1	57.9	2.5	0.34
S3CL	20	2.48	1.48	0.8	22.3	21.8	55.2	3.5	0.44
S3B	9	1.10	1.57	0.8	32.0	20.4	46.9	5	0.61
S3A	5	0.78	1.57	0.7	32.1	20.1	47.0	4	0.56
S4CU	8	1.46	1.56	0.9	30.3	20.0	48.9	4	0.57
S4CL	5	0.81	1.59	0.9	31.6	20.0	47.5	4	0.45
S4BU	8	1.03	1.53	0.7	27.3	22.2	50.0	5.5	0.63
S4BL	6	0.71	1.69	0.7	39.8	17.5	42.1	1.5	0.52
S4AU	5	0.61	1.50	0.7	25.5	22.1	51.9	4	0.74
S4AL	5	0.61	1.51	0.7	26.8	22.2	50.4	4	0.94
TOTAL	**240**								

Coal Resources by Ply with Coal Quality Attributes (clean)

SEAM	Resource (Mt)	IM % (ad)	ASH % (ad)	VM % (ad)	FC % (ad)	TS %	CSN	FLUIDITY ddpm
S1C	13	1.3	7.5	26.5	64.7	0.75	6	90
S1CL	5	0.9	7.5	27.7	63.9	0.90	7.5	618
S1B	2	1.0	7.6	27.1	64.2	0.89	8	1058
S1BL	5	0.9	8.0	27.5	63.7	0.81	7.5	1893
S1AU	5	1.6	8.6	27.5	62.3	0.89	8	759
S1AL	1	1.6	8.6	26.8	63.1	0.86	8	691
S2CU	1	-	-	-	-	-	-	-
S2C	5	-	-	-	-	-	-	-
S2CL	3	0.9	7.9	26.9	64.4	1.07	8	1251
S2B	16	1.1	8.0	23.9	67.0	0.59	5	22
S2A	1	-	-	-	-	-	-	-
S2AL	1	-	-	-	-	-	-	-
S3D	20	1.0	9.8	24.8	64.5	0.58	6	194
S3CU	36	1.2	9.2	23.6	66.0	0.41	4.5	6
S3CM	56	1.3	8.8	23.0	67.0	0.37	3	4
S3CL	20	0.9	8.7	23.5	66.9	0.54	6	127
S3B	9	0.8	7.5	26.2	65.5	0.95	8	545
S3A	5	1.0	8.0	24.3	66.7	0.75	7.5	386
S4CU	8	1.0	8.9	23.2	66.9	0.56	6	253
S4CL	5	1.0	8.8	23.5	66.8	0.41	6.5	9
S4BU	8	0.9	9.0	24.6	65.5	0.63	7	455
S4BL	6	0.9	7.9	22.6	68.6	0.74	5.0	10
S4AU	5	0.7	9.2	24.9	65.1	0.63	7	1618
S4AL	5	0.8	10.1	26.5	62.6	0.76	7.5	3971
TOTAL	**240**							

Modelled Borehole Locations, TD, Inclination/Azimuth and Type

BOREID	X	Y	Z	TD	AZI	DIP	TYPE		BOREID	X	Y	Z	TD	AZI	DIP	TYPE
ISHY20-03	683127	5536856	1648	177	360	-90	HY		ISRAB20-025	682644	5540319	2062	167	0	-90	RAB
ISHY20-04	683280	5538229	2018	146	0	-90	HY		ISRAB20-026	682169	5540120	2053	175	0	-90	RAB
ISHY20-06	682953	5539030	1989	223	0	-90	HY		ISRAB20-027	681830	5540878	2006	160	0	-90	RAB
ISHY20-07	682135	5539437	1803	155	360	-90	HY		ISRAB20-028	682351	5540378	2092	183	360	-90	RAB
ISHY20-08	681690	5539492	1817	428	75	-60	HY		ISRAB20-029	682284	5540332	2090	62	360	-90	RAB
ISHY20-09	681752	5541325	2055	194	360	-90	HY		ISRAB20-030	682051	5540796	2056	92	360	-90	RAB
ISLD20-01A	683141	5537859	1821	85	0	-90	LDC		ISRAB20-031	681830	5540139	1968	297	63	-60	RAB
ISLD20-01C	683139	5537861	1822	60	0	-90	LDC		ISRAB20-032	681989	5540156	1997	229	0	-90	RAB
ISLD20-02	682676	5538951	1899	117	0	-90	LDC		ISRAB20-033	681977	5539933	1939	265	360	-90	RAB
ISLD20-02B	682674	5538957	1898	160	0	-90	LDC		ISRAB20-034	682343	5539480	1807	181	0	-90	RAB
ISLD20-03	682498	5538425	1782	114	0	-90	LDC		ISRAB20-035	682530	5539624	1897	88	0	-90	RAB
ISLD20-04	682620	5538602	1848	152	360	-90	LDC		ISRAB20-035B	682525	5539633	1897	166	0	-90	RAB
ISLD20-04B	682628	5538582	1847	155	360	-90	LDC		ISRAB20-036	682495	5539750	1900	205	228	-88	RAB
ISLD20-05	682953	5539030	1989	163	360	-90	LDC		ISRAB20-037	682446	5539921	1910	133	0	-90	RAB
ISLD20-06	682993	5538814	1979	132	0	-90	LDC		ISRAB20-038	682820	5538727	1913	229	360	-90	RAB
ISLD20-07	683062	5538615	1977	147	0	-90	LDC		ISRAB20-039	682972	5538394	1909	207	271	-90	RAB
ISLD20-08	682828	5538319	1851	176	0	-90	LDC		ISRAB20-040	683101	5538504	1977	191	327	-86	RAB
ISLD20-09	682909	5540311	2159	102	0	-90	LDC		ISRAB20-041	682995	5538811	1979	160	196	-89	RAB
ISLD20-10	683072	5539583	2116	122	0	-90	LDC		ISRAB20-042	682953	5539026	1988	182	304	-89	RAB
ISLD20-11	682462	5541109	2294	261	0	-90	LDC		ISRAB20-043	683089	5539091	2044	170	318	-88	RAB
ISLD20-12	682634	5540874	2253	217	360	-90	LDC		ISRAB20-044	683215	5538532	2028	186	314	-89	RAB
ISLD20-13	682666	5539851	1979	62	0	-90	LDC		ISRAB20-045	683154	5538826	2042	151	0	-90	RAB
ISLD20-14	682820	5540605	2238	182	360	-90	LDC		ISRAB20-046	683167	5539339	2083	124	0	-90	RAB
ISLD20-15	683400	5538637	2120	88	360	-90	LDC		ISRAB20-047	683052	5539763	2133	134	0	-90	RAB
ISLD20-16	683249	5538957	2088	116	0	-90	LDC		ISRAB20-048	682946	5539922	2094	123	360	-90	RAB
ISLD20-17	682439	5540709	2223	184	360	-90	LDC		ISRAB20-049	682971	5539848	2103	154	360	-90	RAB
ISLD20-18	682893	5539334	2024	165	360	-90	LDC		ISRAB20-050	683006	5539535	2093	175	360	-90	RAB
ISLD20-19	682672	5539375	1909	75	0	-90	LDC		ISRAB20-051	682961	5539689	2102	156	360	-90	RAB
ISLD20-20	682264	5540532	2172	168	0	-90	LDC		ISRAB20-052	683063	5539305	2062	175	360	-90	RAB
ISLD20-21	682442	5539925	1911	25	0	-90	LDC		ISRAB20-053	682315	5540152	1996	179	360	-90	RAB
ISLD20-22	683094	5538115	1912	159	0	-90	LDC		ISRAB20-054	682570	5540094	1992	201	0	-90	RAB
ISLD20-23	682110	5540380	2085	182	360	-90	LDC		ISRAB20-055	682621	5539973	1989	255	0	-90	RAB
ISLD20-24	682239	5541683	2209	32	0	-90	LDC		ISRAB20-056	682669	5539861	1980	200	0	-90	RAB
ISLD20-24B	682237	5541682	2208	30	0	-90	LDC		ISRAB20-057	682718	5539815	1972	175	0	-90	RAB
ISLD20-24C	682236	5541680	2208	32	0	-90	LDC		ISRAB20-058	683220	5539156	2076	122	183	-90	RAB
ISLD20-24D	682239	5541678	2210	34	0	-90	LDC		ISRAB20-059	683308	5538804	2102	95	0	-90	RAB
ISLD20-25	682732	5540169	2060	157	0	-90	LDC		ISRAB20-060	683398	5538646	2119	160	75	-60	RAB
ISLD20-26	682768	5538023	1801	144	0	-90	LDC		ISRAB20-061	683484	5538402	2127	152	360	-90	RAB
ISLD20-27	682077	5539797	1940	224	0	-90	LDC		ISRAB20-062	683481	5538401	2126	134	180	-60	RAB
ISLD20-28	682285	5541130	2202	200	0	-90	LDC		ISRAB20-063	683245	5538962	2088	130	75	-60	RAB
ISLD20-28B	682281	5541124	2200	104	0	-90	LDC		ISRAB20-064	683285	5538210	2016	152	192	-58	RAB
ISLD20-29	682775	5537656	1695	122	0	-90	LDC		ISRAB20-065	683286	5538222	2019	137	0	-90	RAB
ISLD20-30	683273	5537500	1830	91	0	-90	LDC		ISRAB20-066	683197	5538086	1951	243	0	-90	RAB
ISLD20-31	681967	5540879	2049	93	0	-90	LDC		ISRAB20-067	683114	5538304	1951	238	360	-90	RAB
ISLD20-32	683015	5537075	1664	151	0	-90	LDC		ISRAB20-068	683198	5538086	1951	198	83	-70	RAB
ISLD20-33	682317	5540152	1995	80	0	-90	LDC		ISRAB20-070	682818	5538335	1850	192	360	-90	RAB
ISLD20-34	682224	5540880	2168	120	0	-90	LDC		ISRAB20-071	682763	5538031	1801	240	0	-90	RAB
ISLD20-35	681764	5540509	1916	283	360	-90	LDC		ISRAB20-072	682771	5537661	1695	209	0	-90	RAB
ISRAB19-01	682621	5537342	1587	179	75	-60	RAB		ISRAB20-074	683415	5537750	1853	160	0	-90	RAB
ISRAB19-02	683386	5535315	1632	146	75	-65	RAB		ISRAB20-075	683275	5537499	1830	204	75	-60	RAB
ISRAB19-03	683450	5534836	1708	208	75	-60	RAB		ISRAB20-076	682516	5539378	1831	210	360	-90	RAB
ISRAB19-04	683620	5534692	1779	206	75	-60	RAB		ISRAB20-077	682288	5541140	2202	216	360	-90	RAB
ISRAB19-05	683128	5536853	1648	168	75	-65	RAB		ISRAB20-078	682227	5541002	2177	123	360	-90	RAB
ISRAB19-06	683627	5535106	1781	170	75	-65	RAB		ISRAB20-079	682289	5541211	2197	123	360	-90	RAB
ISRAB19-07	683675	5534563	1801	151	75	-65	RAB		ISRAB20-080	682271	5541312	2200	99	360	-90	RAB
ISRAB19-08	682929	5537278	1677	108	70	-65	RAB		ISRAB20-081	682253	5541474	2240	150	360	-90	RAB
ISRAB19-09	683727	5534923	1831	101	75	-65	RAB		ISRAB20-083	682240	5541686	2209	96	0	-90	RAB
ISRAB19-10	683795	5534676	1862	69	75	-65	RAB		ISRAB20-084	682147	5542052	2147	107	0	-90	RAB
ISRAB19-11	683622	5534339	1804	178	70	-60	RAB		ISRAB20-085	682072	5542398	2112	91	0	-90	RAB
ISRAB19-12	682842	5537474	1663	212	75	-65	RAB		ISRAB20-086	681790	5542771	2031	25	0	-90	RAB
ISRAB19-13	682608	5537937	1729	187	75	-65	RAB		ISRAB20-087	681790	5542773	2032	87	65	-60	RAB
ISRAB19-14	682701	5538397	1828	162	75	-65	RAB		ISRAB20-088	682006	5542746	2072	30	75	-60	RAB

BOREID	X	Y	Z	TD	AZI	DIP	TYPE		BOREID	X	Y	Z	TD	AZI	DIP	TYPE
ISRAB19-15	682913	5538066	1852	184	75	-65	RAB		ISRAB20-089	682146	5542052	2147	134	245	-60	RAB
ISRAB19-16	683207	5537591	1775	98	75	-65	RAB		ISRAB20-090	682241	5541686	2210	115	65	-65	RAB
ISRAB19-17	682902	5538564	1911	188	69	-65	RAB		ISRAB20-091	682233	5541684	2205	118	245	-60	RAB
ISRAB19-18	682556	5538836	1866	186	75	-65	RAB		ISRAB20-092	682218	5541561	2225	147	0	-90	RAB
ISRAB19-19	682801	5539125	1962	198	75	-65	RAB		ISRAB20-093	682225	5540887	2169	113	360	-90	RAB
ISRAB19-20	683025	5538741	1980	135	67	-65	RAB		ISRAB20-094A	681481	5541927	2017	90	75	-65	RAB
ISRAB19-21	683320	5538397	2057	135	83	-65	RAB		ISRAB20-094B	681479	5541927	2017	111	75	-65	RAB
ISRAB19-22	683106	5538955	2038	134	82	-65	RAB		ISRAB20-095	681552	5541937	2017	67	75	-65	RAB
ISRAB19-23	682937	5540282	2153	107	360	-90	RAB		ISRAB20-096	682964	5539201	2016	244	0	-90	RAB
ISRAB19-24	682887	5539349	2024	200	69	-65	RAB		ISRAB20-097	682880	5539614	2040	213	360	-90	RAB
ISRAB19-25	682770	5539660	1970	190	75	-65	RAB		ISRAB20-098	682896	5539336	2025	216	360	-90	RAB
ISRAB19-26	682371	5539860	1876	36	75	-65	RAB		ISRAB20-099	683398	5538648	2119	130	0	-90	RAB
ISRAB19-27	682011	5539500	1832	199	68	-65	RAB		ISRAB20-100	683244	5538970	2089	140	0	-90	RAB
ISRAB19-28	681613	5539868	1927	178	0	-90	RAB		ISRAB20-102	682426	5540716	2223	243	0	-90	RAB
ISRAB19-29	681612	5539870	1927	193	75	-75	RAB		ISRAB20-103	682413	5541415	2314	271	360	-90	RAB
ISRAB19-30	682039	5540248	2038	176	75	-65	RAB		ISRAB20-104	682467	5541108	2295	270	75	-65	RAB
ISRAB19-31	682035	5540597	2059	185	75	-65	RAB		ISRAB20-105	683091	5538121	1911	233	360	-90	RAB
ISRAB19-32	681973	5540890	2053	161	360	-90	RAB		ISRAB20-106	683014	5537077	1664	185	0	-90	RAB
ISRAB19-33	681883	5540011	1930	193	75	-65	RAB		ISRAB20-107	681494	5541436	1929	135	68	-55	RAB
ISRAB19-34	682461	5539250	1799	46	75	-65	RAB		ISRAB20-108	681906	5541576	2021	33	60	-60	RAB
ISRAB19-35	683079	5539574	2116	134	360	-90	RAB		ISRAB20-109	682012	5541170	2049	29	70	-60	RAB
ISRAB19-36	682996	5539946	2121	140	0	-90	RAB		ISRAB20-110	681884	5539561	1817	238	65	-60	RAB
ISRAB19-37	682878	5539496	2019	137	360	-90	RAB		ISRAB20-111	682247	5539752	1869	126	0	-90	RAB
ISRAB19-38	682975	5538947	1986	187	360	-90	RAB		ISRAB20-112	682504	5540180	1985	213	360	-90	RAB
ISRAB19-39	682787	5539354	1962	202	0	-90	RAB		ISRAB20-113	682259	5540036	1983	126	360	-90	RAB
ISRAB19-40	682817	5538904	1932	201	360	-90	RAB		ISRAB20-114	682808	5539024	1950	247	360	-90	RAB
ISRAB19-41	683029	5538226	1904	192	75	-65	RAB		ISRAB20-115	682969	5538587	1940	215	360	-90	RAB
ISRAB19-42	682770	5539586	1969	10	0	-90	RAB		ISRAB20-116	682784	5539986	2038	209	0	-90	RAB
ISRAB19-43	682769	5539586	1968	200	360	-90	RAB		ISRAB20-117	682102	5541004	2101	57	0	-90	RAB
ISRAB19-44	682781	5539447	1964	204	360	-90	RAB		ISRAB20-118	683165	5537422	1762	111	360	-90	RAB
ISRAB19-45	682672	5538801	1888	202	360	-90	RAB		ISRAB20-119	682525	5540514	2139	105	0	-90	RAB
ISRAB19-46	682663	5539095	1897	159	360	-90	RAB		ISRAB20-120	682743	5540486	2162	119	0	-90	RAB
ISRAB19-47	682678	5538941	1899	154	360	-90	RAB		ISRAB20-121	682629	5538201	1765	173	360	-90	RAB
ISRAB19-48	682620	5538602	1848	184	360	-90	RAB		ISRAB20-122	682705	5537541	1651	191	0	-90	RAB
ISRAB19-49	683146	5537859	1821	110	360	-90	RAB		ISRAB20-123	682429	5537842	1660	116	0	-90	RAB
ISRAB19-50	682499	5538433	1782	173	360	-90	RAB		ISRAB20-124	682322	5539161	1756	67	0	-90	RAB
ISRAB19-51	682681	5537815	1714	146	0	-90	RAB		ISRAB20-125	682185	5539490	1804	118	0	-90	RAB
ISRAB20-001	682550	5538942	1847	164	156	-87	RAB		ISRAB20-126	681648	5540867	1919	228	0	-90	RAB
ISRAB20-002	682500	5539171	1812	89	59	-90	RAB		ISRAB20-127	681764	5540509	1916	258	0	-90	RAB
ISRAB20-002B	682502	5539167	1813	103	360	-90	RAB		ISRAB20-128	681896	5540532	1979	244	360	-90	RAB
ISRAB20-003	682111	5539429	1808	176	148	-90	RAB		ISRAB20-129	682022	5539146	1708	215	75	-70	RAB
ISRAB20-004	681915	5539817	1896	236	36	-89	RAB		OMR-001	682970	5539170	2010	247	0	-90	DDH
ISRAB20-005	682033	5539586	1869	294	360	-90	RAB		OMR-002	682376	5541284	2266	153	0	-90	DDH
ISRAB20-006	682126	5540006	2020	267	299	-89	RAB		OMR-003	682959	5540145	2130	124	0	-90	DDH
ISRAB20-007	681644	5539989	1941	335	360	-90	RAB		OMR-004	683242	5538260	2004	168	0	-90	DDH
ISRAB20-008	682073	5539797	1940	197	181	-88	RAB		OMR-005	682828	5538666	1906	182	0	-90	DDH
ISRAB20-009	682115	5540368	2085	177	150	-89	RAB		OMR-006	683187	5538665	2037	160	0	-90	DDH
ISRAB20-010	682195	5540578	2162	196	0	-90	RAB		OMR-007	682840	5538318	1856	200	0	-90	DDH
ISRAB20-011	682673	5539184	1915	135	312	-87	RAB		OMR-008	682944	5537861	1815	51	0	-90	DDH
ISRAB20-012	682460	5540635	2208	174	0	-90	RAB		OMR-009	682571	5538082	1744	180	0	-90	DDH
ISRAB20-013	682639	5540881	2252	205	166	-89	RAB		OMR-010	682610	5537678	1661	185	0	-90	DDH
ISRAB20-014	682666	5539380	1908	144	360	-90	RAB		OMR-011	682549	5537319	1567	201	0	-90	DDH
ISRAB20-015	682410	5540882	2264	186	204	-89	RAB		OMR-012	682293	5537892	1626	179	0	-90	DDH
ISRAB20-016	682668	5539518	1908	138	18	-88	RAB		OMR-013	682380	5538462	1775	170	0	-90	DDH
ISRAB20-017	682504	5540992	2282	213	206	-89	RAB		OMR-014	682527	5538801	1862	182	0	-90	DDH
ISRAB20-018	682482	5541236	2315	295	314	-89	RAB		OMR-015	681972	5539624	1866	81	0	-90	DDH
ISRAB20-019	682533	5540762	2244	213	33	-89	RAB		OMR-015A	681972	5539624	1866	232	90	-55	DDH
ISRAB20-020	682823	5540598	2238	219	331	-89	RAB		OMR-016	681968	5539929	1935	63	90	-55	DDH
ISRAB20-021	682663	5540689	2228	211	251	-88	RAB		OMR-017	682029	5540245	2036	173	90	-55	DDH
ISRAB20-022	682762	5540736	2243	216	357	-90	RAB		OMR-018	683415	5535185	1662	218	90	-55	DDH
ISRAB20-023	682319	5540522	2176	213	322	-90	RAB		OMR-019	683619	5534758	1775	147	90	-55	DDH