

Results for: Gas Chromatography Mass Spectrometry

Data Sheet:

(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Respse:	Value:	units:	Qualifier:
BiomRatio	% C27 aaa 20R			26.6894703649608	ratio	Y
BiomRatio	% C27 abb 20(R+S)			21.8324489986074	ratio	Y
BiomRatio	% C28 aaa 20R			22.6007469422491	ratio	Y
BiomRatio	% C28 abb 20(R+S)			22.2137160441907	ratio	Y
BiomRatio	% C29 aaa 20R			50.7097826927901	ratio	Y
BiomRatio	% C29 abb 20(R+S)			55.9538349572019	ratio	Y
BiomRatio	(C21+C22)/(C27+C28+C29)			1.98196793141058E-02	ratio	Y
BiomRatio	25-Nor/C30H			1.52496232270824E-02	ratio	Y
BiomRatio	C19t/C23t			0.529775376603149	ratio	Y
BiomRatio	C22t/C21t			0.41281381347268	ratio	Y
BiomRatio	C22t/C24t			0.334668692729198	ratio	Y
BiomRatio	C23t/C30H			5.09946507181024E-03	ratio	Y
BiomRatio	C24t/C23t			0.528509892677229	ratio	Y
BiomRatio	C24Tet/C23t			4.7249275997177	ratio	Y
BiomRatio	C24Tet/C26t			5.10536695679613	ratio	Y
BiomRatio	C24Tet/C30H			2.40946032615926E-02	ratio	Y
BiomRatio	C26t/C25t			1.42079503848166	ratio	Y
BiomRatio	C27 Dia/(Dia+Reg)			0.179158198656806	ratio	Y
BiomRatio	C27 Dia/Ster			0.129367240302028	ratio	Y
BiomRatio	C28BNH/C30H			0.018717150266372	ratio	Y
BiomRatio	C29/C27 abb Sterane Ratio			2.56287487311987	ratio	Y
BiomRatio	C29H/C30H			1.06595573737289	ratio	Y
BiomRatio	C29Ts/(C29Ts+C29H)			5.49810393705777E-02	ratio	Y
BiomRatio	C30DiaH/C30H			2.00187294363398E-02	ratio	Y
BiomRatio	C30Ts/C30H			0.172185719760374	ratio	Y
BiomRatio	C35 Homohopane Index			0.100705024407652	ratio	Y
BiomRatio	C35HS/C34HS			1.00418383670431	ratio	Y
BiomRatio	Gam/C30H			0.103688999025057	ratio	Y
BiomRatio	Gam/C31HR			0.239113188950463	ratio	Y
BiomRatio	Ole/C30H			7.33205558169966E-03	ratio	Y
BiomRatio	Sterane/hopane			0.070465289187164	ratio	Y
BiomRatio	Steranes/Terpanes			6.93736303620002E-02	ratio	Y
BiomRatio	Tricyclic/Pentacyclic Terpanes			1.57359333721954E-02	ratio	Y

Results for: Elemental Analyser

Unique ID: W13/007831_SPE_ELEM-AN/01

Instrument / Type: Elemental Analyser Run: 1

for Analysis: Elemental CHNS

Analysis Date: 30/10/2017

Linked Image: [None available](#)

Preparation: Solid Phase Extract

Method ID/s:

Sample Volume:

Volume Units:

Extract Volume:

Dilution Factor:

Comment:

Results for: Elemental Analyser**Data Sheet:**

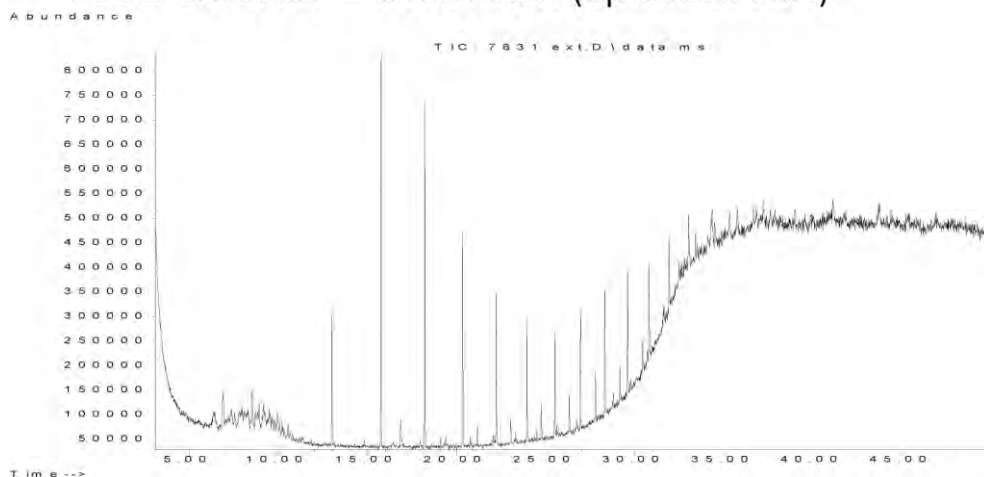
(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Respns:	Value:	units:	Qualifier:
Inorg	Carbon			95.2607310770257	percent	Y
Inorg	Hydrogen			10.3273407554672	percent	Y
Inorg	Nitrogen			0.63	percent	Y
Inorg	Sulphur			7.67608430160468	percent	Y

Results for: GCMS with Full Scan**Unique ID:** W13/007831_DISS_GCMS-Scan/01**Instrument / Type:** GCMS with Full Scan Run: 1**for Analysis:** Whole Oils**Preparation:** Dissolved in solvent**Analysis Date:** 30/10/2017**Method ID/s:****Linked Image:** [LinkedFiles\GAB_BCH1\GCMS\W13_007831_ext_WholeOil.jpg](#)**Sample Volume:****Volume Units:****Extract Volume:****Dilution Factor:****Comment:** Exterior (splitless)

Results for: GCMS with Full Scan

7831 exterior – Unknown (splitless run)



Data Sheet:

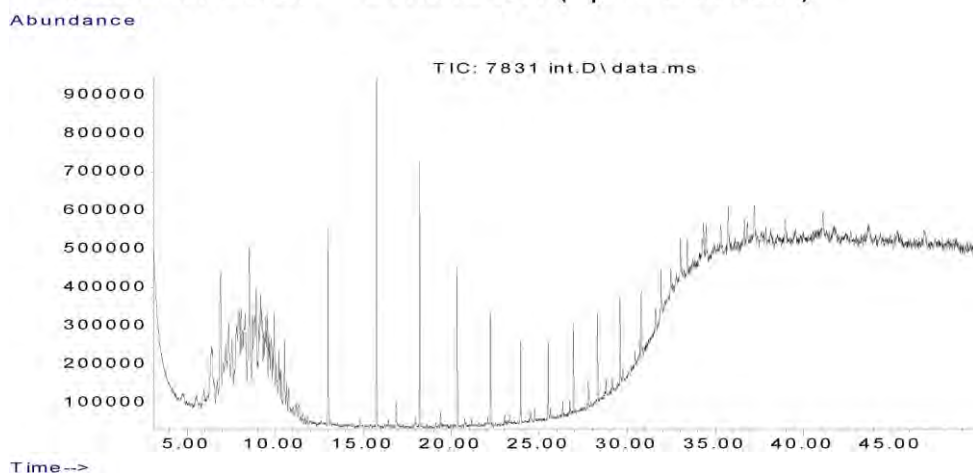
(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Respse:	Value:	units:	Qualifier:
Aliph	Botryococcane					U
Aliph	nC10					U
Aliph	nC11					U
Aliph	nC12					U
Aliph	nC13					U
Aliph	nC14					U
Aliph	nC15					U
Aliph	nC16	17.9470				U
Aliph	nC17	19.3870				U
Aliph	nC18	20.7560				U
Aliph	nC19	22.0580				U
Aliph	nC20	23.3040				U
Aliph	nC21	24.4890				U
Aliph	nC22	25.6290				U
Aliph	nC23	26.7230				U
Aliph	nC24	27.7690				U
Aliph	nC25	28.7780				U
Aliph	nC26	29.7510				U
Aliph	nC27	30.6850				U
Aliph	nC28	31.5900				U
Aliph	nC29	32.4650				U
Aliph	nC30	33.4020				U
Aliph	nC31	34.4700				U
Aliph	nC32	35.7230				U
Aliph	nC33	37.1970				U
Aliph	nC34	38.9660				U
Aliph	nC35	41.0780				U
Aliph	nC36	43.6950				U
Aliph	nC37	46.8640				U
Aliph	nC8					U
Aliph	nC9					U
Aliph	Norpristane	18.6080				U
Aliph	Phytane	20.7570				U
Aliph	Pristane	19.4110				U

Results for: GCMS with Full Scan**Results for: GCMS with Full Scan****Unique ID:** W13/007831 DISS GCMS-Scan/02**Instrument / Type:** GCMS with Full Scan Run: 2**for Analysis:** Whole Oils**Preparation:** Dissolved in solvent**Analysis Date:** 30/10/2017**Method ID/s:****Linked Image:** [LinkedFiles\GAB_BCH1\GCMS\W13_007831_int_WholeOil.jpg](#)**Sample Volume:****Volume Units:****Extract Volume:****Dilution Factor:****Comment:** Interior (splitless)

Results for: GCMS with Full Scan

7831 interior – Unknown (splitless run)



Data Sheet:

(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Respse:	Value:	units:	Qualifier:
Aliph	Botryococcane					U
Aliph	nC10					U
Aliph	nC11					U
Aliph	nC12					U
Aliph	nC13					U
Aliph	nC14					U
Aliph	nC15					U
Aliph	nC16	17.9470				U
Aliph	nC17	19.3870				U
Aliph	nC18	20.7560				U
Aliph	nC19	22.0580				U
Aliph	nC20	23.3040				U
Aliph	nC21	24.4890				U
Aliph	nC22	25.6290				U
Aliph	nC23	26.7230				U
Aliph	nC24	27.7690				U
Aliph	nC25	28.7780				U
Aliph	nC26	29.7510				U
Aliph	nC27	30.6850				U
Aliph	nC28	31.5900				U
Aliph	nC29	32.4650				U
Aliph	nC30	33.4020				U
Aliph	nC31	34.4700				U
Aliph	nC32	35.7230				U
Aliph	nC33	37.1970				U
Aliph	nC34	38.9660				U
Aliph	nC35	41.0780				U
Aliph	nC36	43.6950				U
Aliph	nC37	46.8640				U
Aliph	nC8					U
Aliph	nC9					U
Aliph	Norpristane	18.6080				U
Aliph	Phytane	20.7570				U
Aliph	Pristane	19.4110				U

Results for: GCMS with Full Scan**Qualifier codes:**

A	TIC is a possible aldol-condensation product
B	Analyte was also detected in the blank
D	Compound quantitated on a diluted sample
E	Inorganics: Estimated due to interference Organics: Concentration exceeds the calibration range of the instrument
J	Estimated - Result is \geq the Method Detection Limit (MDL) and $<$ the Limit of Quantitation (LOQ)
M	Duplicate injection precision not met
N	Spike sample not within control limits
O	Presumptive evidence of a compound
P	Concentration difference between primary and confirmation columns $> 25\%$
R	Spike/Surrogate failed recovery limits
S	Method of standard additions (MSA) used for calculation
T	Detected but Quantitated amount exceeded maximum
U	Compound Not Detected
V	overloaded and possibly not a water extract
X	Duplicate analysis not within control limits
Y	Detected
Z	Detected but not Quantified (too small)

Sample ID : **W13/007832**

Beach W16b: Tractor Beach Visit: 3

Comments:

Location: Upper Intertidal

Local Date Time: 9/10/2016 3:11:58 PM

Type: Asphaltite

Family: Asphaltite

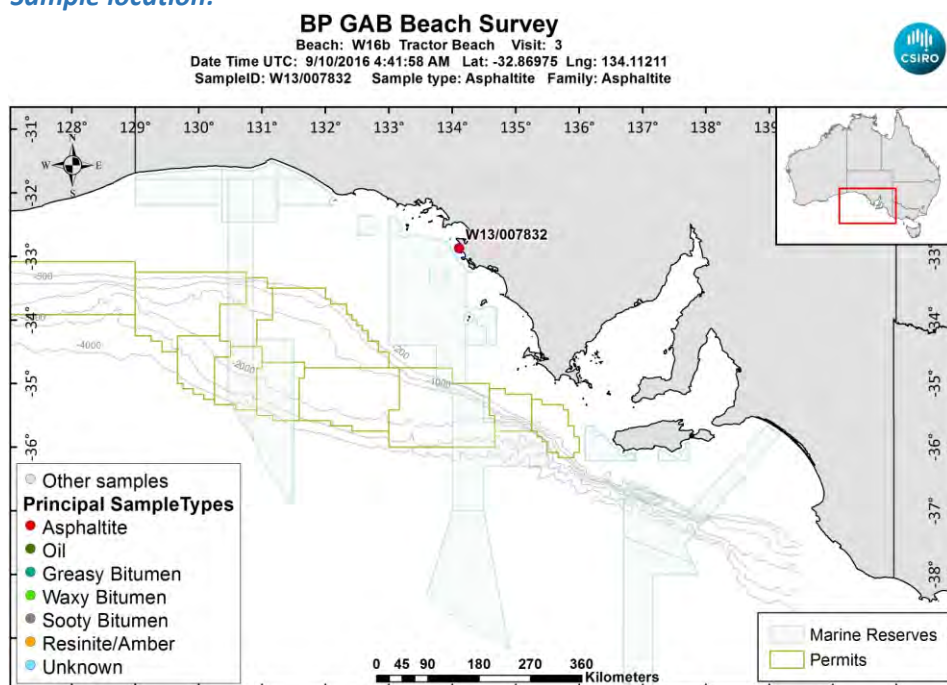
Size (cm): 4.4

Latitude (Y): -32.869748

Weight (gm): 16.85843

Longitude (X): 134.112110

Sample location:



[LinkedFiles\GAB_BCH1\SampleLocations\W13_007832_Location.jpg](#)

Sample - field image:



[LinkedFiles\GAB_BCH1\Samples\W13_007832_146A6580.JPG](#)

Sample - laboratory image:



[LinkedFiles\GAB_BCH1\Samples\W13_007832_Photo03.JPG](#)

Analyses Requested

Split:	Analysis:	Sent:
1	Bitumen Determination	YES
4	Biomarkers	YES

Analyses Completed:

Analysis:	Instrument/Type:
Biomarkers	Gas Chromatography Mass Spectrometry Run: 2
Biomarkers	Gas Chromatography Mass Spectrometry Run: 1
Elemental CHNS	Elemental Analyser Run: 1
Whole Oils	GCMS with Full Scan Run: 2
Whole Oils	GCMS with Full Scan Run: 1

Sample Analyses Completed:

Results for: Gas Chromatography Mass Spectrometry

Unique ID: W13/007832 DISS GC-MS/01

Instrument / Type: Gas Chromatography Mass Spectrometry Run: 1

for Analysis: Biomarkers

Analysis Date: 18/07/2017

Linked Image: [None available](#)

Preparation: Dissolved in solvent

Method ID/s:

Sample Volume:

Volume Units:

Extract Volume:

Dilution Factor:

Comment: External Ratios only

Results for: Gas Chromatography Mass Spectrometry

Data Sheet:

(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Respnse:	Value:	units:	Qualifier:
BiomRatio	% C27 aaa 20R			37.9454438043001	ratio	Y
BiomRatio	% C27 abb 20(R+S)			36.7886873496632	ratio	Y
BiomRatio	% C28 aaa 20R			24.3844406987269	ratio	Y
BiomRatio	% C28 abb 20(R+S)			27.065729502884	ratio	Y
BiomRatio	% C29 aaa 20R			37.670115496973	ratio	Y
BiomRatio	% C29 abb 20(R+S)			36.1455831474528	ratio	Y
BiomRatio	(C21+C22)/(C27+C28+C29)			0.100323788560251	ratio	Y
BiomRatio	25-Nor/C30H			2.90497812437018E-02	ratio	Y
BiomRatio	C19t/C23t			0.253668617785993	ratio	Y
BiomRatio	C22t/C21t			0.360149191518386	ratio	Y
BiomRatio	C22t/C24t			0.300748140948851	ratio	Y
BiomRatio	C23t/C30H			7.39220554248412E-02	ratio	Y
BiomRatio	C24t/C23t			0.567916923392894	ratio	Y
BiomRatio	C24Tet/C23t			0.900996097761347	ratio	Y
BiomRatio	C24Tet/C26t			1.64156918140444	ratio	Y
BiomRatio	C24Tet/C30H			6.66034834762799E-02	ratio	Y
BiomRatio	C26t/C25t			0.898018246580866	ratio	Y
BiomRatio	C27 Dia/(Dia+Reg)			0.436269225772504	ratio	Y
BiomRatio	C27 Dia/Ster			0.421334233469445	ratio	Y
BiomRatio	C28BNH/C30H			5.31606081527571E-02	ratio	Y
BiomRatio	C29/C27 abb Sterane Ratio			0.982518968505239	ratio	Y
BiomRatio	C29H/C30H			0.653037366771588	ratio	Y
BiomRatio	C29Ts/(C29Ts+C29H)			0.194018482144405	ratio	Y
BiomRatio	C30DiaH/C30H			0.092186223154577	ratio	Y
BiomRatio	C30Ts/C30H			4.00599013082109E-02	ratio	Y
BiomRatio	C35 Homohopane Index			7.69751337637807E-02	ratio	Y
BiomRatio	C35HS/C34HS			0.840326759264283	ratio	Y
BiomRatio	Gam/C30H			7.43807471684277E-02	ratio	Y
BiomRatio	Gam/C31HR			0.237073773248457	ratio	Y
BiomRatio	Ole/C30H			2.62879521396822E-03	ratio	Y
BiomRatio	Sterane/hopane			0.348974512710873	ratio	Y
BiomRatio	Steranes/Terpanes			0.315474619588026	ratio	Y
BiomRatio	Tricyclic/Pentacyclic Terpanes			0.106188869223757	ratio	Y

Results for: Gas Chromatography Mass Spectrometry

Unique ID: W13/007832 DISS GC-MS/02

Instrument / Type: Gas Chromatography Mass Spectrometry Run: 2

for Analysis: Biomarkers

Preparation: Dissolved in solvent

Analysis Date: 18/07/2017

Method ID/s:

Linked Image: [None available](#)

Sample Volume:

Volume Units:

Extract Volume:

Dilution Factor:

Comment: Internal Ratios only

Results for: Gas Chromatography Mass Spectrometry

Data Sheet:

(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Respnse:	Value:	units:	Qualifier:
BiomRatio	% C27 aaa 20R			38.0978499880411	ratio	Y
BiomRatio	% C27 abb 20(R+S)			37.834331969865	ratio	Y
BiomRatio	% C28 aaa 20R			23.4393598150539	ratio	Y
BiomRatio	% C28 abb 20(R+S)			25.965109525233	ratio	Y
BiomRatio	% C29 aaa 20R			38.462790196905	ratio	Y
BiomRatio	% C29 abb 20(R+S)			36.2005585049021	ratio	Y
BiomRatio	(C21+C22)/(C27+C28+C29)			0.102459836520883	ratio	Y
BiomRatio	25-Nor/C30H			2.72269317828769E-02	ratio	Y
BiomRatio	C19t/C23t			0.267989638782302	ratio	Y
BiomRatio	C22t/C21t			0.372826723969525	ratio	Y
BiomRatio	C22t/C24t			0.295809940412634	ratio	Y
BiomRatio	C23t/C30H			7.92855096614362E-02	ratio	Y
BiomRatio	C24t/C23t			0.590996529297412	ratio	Y
BiomRatio	C24Tet/C23t			0.825729509114411	ratio	Y
BiomRatio	C24Tet/C26t			1.53958373857226	ratio	Y
BiomRatio	C24Tet/C30H			6.54683849726236E-02	ratio	Y
BiomRatio	C26t/C25t			0.844015280135823	ratio	Y
BiomRatio	C27 Dia/(Dia+Reg)			0.44957173685508	ratio	Y
BiomRatio	C27 Dia/Ster			0.454613438895569	ratio	Y
BiomRatio	C28BNH/C30H			0.050104300741201	ratio	Y
BiomRatio	C29/C27 abb Sterane Ratio			0.956817700223591	ratio	Y
BiomRatio	C29H/C30H			0.689858417291731	ratio	Y
BiomRatio	C29Ts/(C29Ts+C29H)			0.169251027046988	ratio	Y
BiomRatio	C30DiaH/C30H			8.91341626284594E-02	ratio	Y
BiomRatio	C30Ts/C30H			0.037480884922188	ratio	Y
BiomRatio	C35 Homohopane Index			7.71186344574947E-02	ratio	Y
BiomRatio	C35HS/C34HS			0.851441201481726	ratio	Y
BiomRatio	Gam/C30H			7.78523327455909E-02	ratio	Y
BiomRatio	Gam/C31HR			0.237981150215503	ratio	Y
BiomRatio	Ole/C30H			2.39044387328973E-03	ratio	Y
BiomRatio	Sterane/hopane			0.360205181174528	ratio	Y
BiomRatio	Steranes/Terpanes			0.324388516418421	ratio	Y
BiomRatio	Tricyclic/Pentacyclic Terpanes			0.110412862796621	ratio	Y

Results for: Elemental Analyser

Unique ID: W13/007832_SPE_ELEM-AN/01

Instrument / Type: Elemental Analyser Run: 1

for Analysis: Elemental CHNS

Analysis Date: 30/10/2017

Linked Image: [None available](#)

Preparation: Solid Phase Extract

Method ID/s:

Sample Volume:

Volume Units:

Extract Volume:

Dilution Factor:

Comment:

Results for: Elemental Analyser**Data Sheet:**

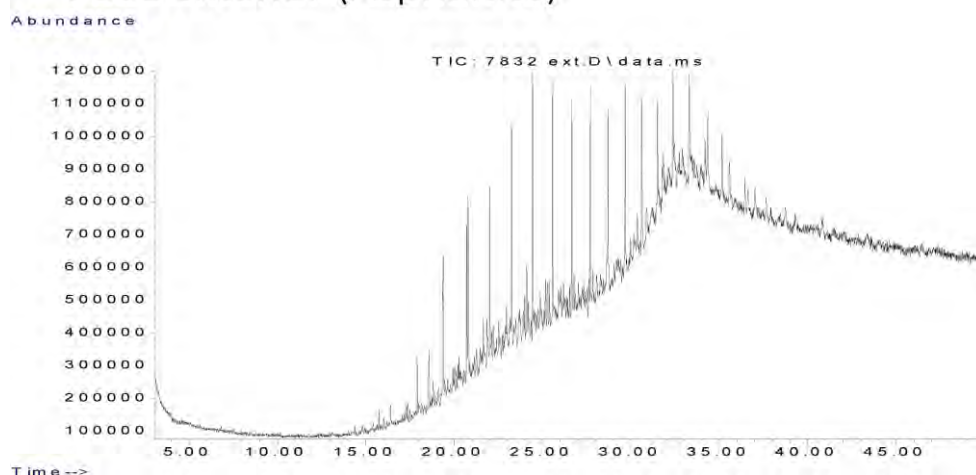
(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Respns:	Value:	units:	Qualifier:
Inorg	Carbon			83.4052550850283	percent	Y
Inorg	Hydrogen			8.3425884691849	percent	Y
Inorg	Nitrogen			0.74	percent	Y
Inorg	Sulphur			5.08368636514203	percent	Y

Results for: GCMS with Full Scan**Unique ID:** W13/007832_DISS_GCMS-Scan/01**Instrument / Type:** GCMS with Full Scan Run: 1**for Analysis:** Whole Oils**Preparation:** Dissolved in solvent**Analysis Date:** 30/10/2017**Method ID/s:****Linked Image:** [LinkedFiles\GAB_BCH1\GCMS\W13_007832_ext_WholeOil.jpg](#)**Sample Volume:****Volume Units:****Extract Volume:****Dilution Factor:****Comment:** Exterior

Results for: GCMS with Full Scan

7832 exterior (Asphaltite)



Data Sheet:

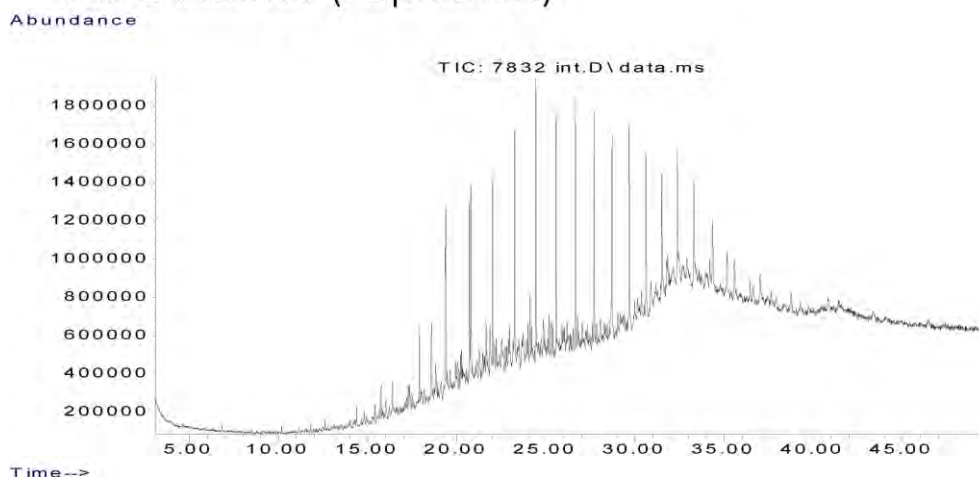
(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Respnse:	Value:	units:	Qualifier:
Aliph	Botryococcane	31.9240				U
Aliph	nC10	7.5110				U
Aliph	nC11	9.4450				U
Aliph	nC12	11.3220				U
Aliph	nC13	13.1110				U
Aliph	nC14	14.8030	159263			Z
Aliph	nC15	16.4030	345606			Z
Aliph	nC16	17.9160	744215			Z
Aliph	nC17	19.3500	997914			Z
Aliph	nC18	20.7170	2186134			Z
Aliph	nC19	22.0170	2684543			Z
Aliph	nC20	23.2570	3236571			Z
Aliph	nC21	24.4410	3488124			Z
Aliph	nC22	25.5760	3292308			Z
Aliph	nC23	26.6620	3106864			Z
Aliph	nC24	27.7060	2826340			Z
Aliph	nC25	28.7100	2367261			Z
Aliph	nC26	29.6680	2577831			Z
Aliph	nC27	30.6080	2084492			Z
Aliph	nC28	31.5080	1525543			Z
Aliph	nC29	32.3700	1631932			Z
Aliph	nC30	33.2910	1799170			Z
Aliph	nC31	34.3470	1359921			Z
Aliph	nC32	35.5720	1092850			Z
Aliph	nC33	37.0130	765878			Z
Aliph	nC34	38.7280	638434			Z
Aliph	nC35	40.8080	575904			Z
Aliph	nC36	43.3510	235084			Z
Aliph	nC37	46.4710				U
Aliph	nC8	4.0300				U
Aliph	nC9	5.6200				U
Aliph	Norpristane	18.5830	1327613			Z
Aliph	Phytane	20.7870	2872877			Z
Aliph	Pristane	19.3870	2401171			Z

Results for: GCMS with Full Scan**Results for: GCMS with Full Scan****Unique ID:** W13/007832 DISS GCMS-Scan/02**Instrument / Type:** GCMS with Full Scan Run: 2**for Analysis:** Whole Oils**Preparation:** Dissolved in solvent**Analysis Date:** 30/10/2017**Method ID/s:****Linked Image:** [LinkedFiles\GAB_BCH1\GCMS\W13_007832_int_WholeOil.jpg](#)**Sample Volume:****Volume Units:****Extract Volume:****Dilution Factor:****Comment:** Interior

Results for: GCMS with Full Scan

7832 interior (Asphaltite)



Data Sheet:

(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Respse:	Value:	units:	Qualifier:
Aliph	Botryococcane	31.9240				U
Aliph	nC10	7.5110				U
Aliph	nC11	9.4450				U
Aliph	nC12	11.3220				U
Aliph	nC13	13.1110				U
Aliph	nC14	14.8030	352421			Z
Aliph	nC15	16.4030	782171			Z
Aliph	nC16	17.9160	1711641			Z
Aliph	nC17	19.3500	2296120			Z
Aliph	nC18	20.7170	4451080			Z
Aliph	nC19	22.0170	5320257			Z
Aliph	nC20	23.2570	6183535			Z
Aliph	nC21	24.4410	6734217			Z
Aliph	nC22	25.5760	5935500			Z
Aliph	nC23	26.6620	5690635			Z
Aliph	nC24	27.7060	5243691			Z
Aliph	nC25	28.7100	4193249			Z
Aliph	nC26	29.6680	4621298			Z
Aliph	nC27	30.6080	4256305			Z
Aliph	nC28	31.5080	3346420			Z
Aliph	nC29	32.3700	3230489			Z
Aliph	nC30	33.2910	3043036			Z
Aliph	nC31	34.3470	2293529			Z
Aliph	nC32	35.5720	1759000			Z
Aliph	nC33	37.0130	1150021			Z
Aliph	nC34	38.7280	856578			Z
Aliph	nC35	40.8080	1082715			Z
Aliph	nC36	43.3510	677284			Z
Aliph	nC37	46.4710	715601			Z
Aliph	nC8	4.0300				U
Aliph	nC9	5.6200				U
Aliph	Norpristane	18.5830	3137957			Z
Aliph	Phytane	20.7870	5598807			Z
Aliph	Pristane	19.3870	5102967			Z

Results for: GCMS with Full Scan**Qualifier codes:**

A	TIC is a possible aldol-condensation product
B	Analyte was also detected in the blank
D	Compound quantitated on a diluted sample
E	Inorganics: Estimated due to interference Organics: Concentration exceeds the calibration range of the instrument
J	Estimated - Result is \geq the Method Detection Limit (MDL) and < the Limit of Quantitation (LOQ)
M	Duplicate injection precision not met
N	Spike sample not within control limits
O	Presumptive evidence of a compound
P	Concentration difference between primary and confirmation columns > 25%
R	Spike/Surrogate failed recovery limits
S	Method of standard additions (MSA) used for calculation
T	Detected but Quantitated amount exceeded maximum
U	Compound Not Detected
V	overloaded and possibly not a water extract
X	Duplicate analysis not within control limits
Y	Detected
Z	Detected but not Quantified (too small)

Sample ID : **W13/007833**

Beach W16b: Tractor Beach Visit: 3

Comments:

Location: Upper Intertidal

Local Date Time: 9/10/2016 3:16:21 PM

Type: Asphaltite

Family: Unknown

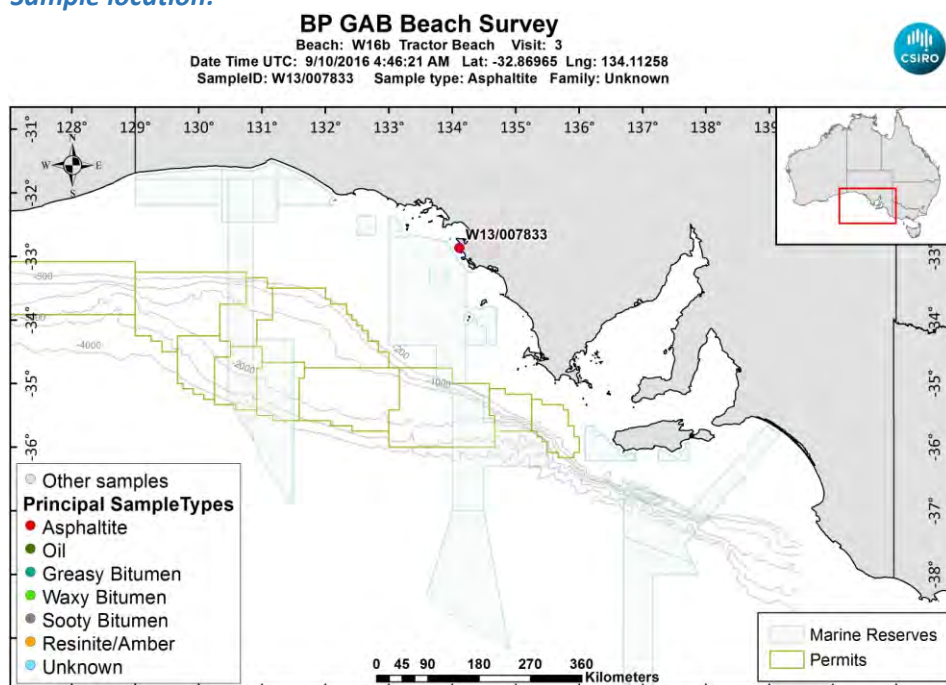
Size (cm): 5.1

Latitude (Y): -32.869647

Weight (gm): 20.45615

Longitude (X): 134.112575

Sample location:



[LinkedFiles\GAB_BCH1\SampleLocations\W13_007833_Location.jpg](#)

Sample - field image:



[LinkedFiles\GAB_BCH1\Samples\W13_007833_146A6582.JPG](#)

Sample - laboratory image:



[LinkedFiles\GAB_BCH1\Samples\W13_007833_Photo02.JPG](#)

Analyses Requested

Split:	Analysis:	Sent:
1	Bitumen Determination	YES
4	Biomarkers	YES

Analyses Completed:

Analysis:	Instrument/Type:
Biomarkers	Gas Chromatography Mass Spectrometry Run: 2
Biomarkers	Gas Chromatography Mass Spectrometry Run: 1
Elemental CHNS	Elemental Analyser Run: 1
Whole Oils	GCMS with Full Scan Run: 2
Whole Oils	GCMS with Full Scan Run: 1

Sample Analyses Completed:

Results for: Gas Chromatography Mass Spectrometry

Unique ID: W13/007833 DISS GC-MS/01

Instrument / Type: Gas Chromatography Mass Spectrometry Run: 1

for Analysis: Biomarkers

Analysis Date: 18/07/2017

Linked Image: [None available](#)

Preparation: Dissolved in solvent

Method ID/s:

Sample Volume:

Volume Units:

Extract Volume:

Dilution Factor:

Comment: External Ratios only

Results for: Gas Chromatography Mass Spectrometry

Data Sheet:

(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Rspnse:	Value:	units:	Qualifier:
BiomRatio	% C27 aaa 20R			38.9055768016328	ratio	Y
BiomRatio	% C27 abb 20(R+S)			31.8089032404572	ratio	Y
BiomRatio	% C28 aaa 20R			25.5679250791121	ratio	Y
BiomRatio	% C28 abb 20(R+S)			30.4986441639184	ratio	Y
BiomRatio	% C29 aaa 20R			35.5264981192551	ratio	Y
BiomRatio	% C29 abb 20(R+S)			37.6924525956244	ratio	Y
BiomRatio	(C21+C22)/(C27+C28+C29)			3.81306975673999E-02	ratio	Y
BiomRatio	25-Nor/C30H			4.10393861296932E-02	ratio	Y
BiomRatio	C19t/C23t			1.38948506893268E-02	ratio	Y
BiomRatio	C22t/C21t			0.416615530429605	ratio	Y
BiomRatio	C22t/C24t			0.079519718157961	ratio	Y
BiomRatio	C23t/C30H			9.35170348289824E-02	ratio	Y
BiomRatio	C24t/C23t			0.691875788796344	ratio	Y
BiomRatio	C24Tet/C23t			1.31583305318443	ratio	Y
BiomRatio	C24Tet/C26t			1.40797565236801	ratio	Y
BiomRatio	C24Tet/C30H			0.123052805463775	ratio	Y
BiomRatio	C26t/C25t			1.07385950339316	ratio	Y
BiomRatio	C27 Dia/(Dia+Reg)			0.39136067990688	ratio	Y
BiomRatio	C27 Dia/Ster			0.354473878607835	ratio	Y
BiomRatio	C28BNH/C30H			3.16811623606767E-02	ratio	Y
BiomRatio	C29/C27 abb Sterane Ratio			1.18496548940059	ratio	Y
BiomRatio	C29H/C30H			0.924276068163926	ratio	Y
BiomRatio	C29Ts/(C29Ts+C29H)			0.140236110932746	ratio	Y
BiomRatio	C30DiaH/C30H			2.70490580625101E-02	ratio	Y
BiomRatio	C30Ts/C30H			0.106007246896599	ratio	Y
BiomRatio	C35 Homohopane Index			7.91784480956923E-02	ratio	Y
BiomRatio	C35HS/C34HS			0.945494069328777	ratio	Y
BiomRatio	Gam/C30H			6.66983251943555E-02	ratio	Y
BiomRatio	Gam/C31HR			0.189673250197796	ratio	Y
BiomRatio	Ole/C30H			8.64127741784064E-02	ratio	Y
BiomRatio	Sterane/hopane			0.43702508161419	ratio	Y
BiomRatio	Steranes/Terpanes			0.376307915694767	ratio	Y
BiomRatio	Tricyclic/Pentacyclic Terpanes			0.161349691003237	ratio	Y

Results for: Gas Chromatography Mass Spectrometry

Unique ID: W13/007833 DISS GC-MS/02

Instrument / Type: Gas Chromatography Mass Spectrometry Run: 2

for Analysis: Biomarkers

Preparation: Dissolved in solvent

Analysis Date: 18/07/2017

Method ID/s:

Linked Image: [None available](#)

Sample Volume:

Volume Units:

Extract Volume:

Dilution Factor:

Comment: Internal Ratios only

Results for: Gas Chromatography Mass Spectrometry

Data Sheet:

(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Rspnse:	Value:	units:	Qualifier:
BiomRatio	% C27 aaa 20R			32.2535743662475	ratio	Y
BiomRatio	% C27 abb 20(R+S)			29.3289093119217	ratio	Y
BiomRatio	% C28 aaa 20R			23.6125820723939	ratio	Y
BiomRatio	% C28 abb 20(R+S)			31.134466344343	ratio	Y
BiomRatio	% C29 aaa 20R			44.1338435613586	ratio	Y
BiomRatio	% C29 abb 20(R+S)			39.5366243437353	ratio	Y
BiomRatio	(C21+C22)/(C27+C28+C29)			3.11974752063007E-02	ratio	Y
BiomRatio	25-Nor/C30H			3.36171542452978E-02	ratio	Y
BiomRatio	C19t/C23t			1.36536535410032E-02	ratio	Y
BiomRatio	C22t/C21t			0.458571842941793	ratio	Y
BiomRatio	C22t/C24t			6.12729802348032E-02	ratio	Y
BiomRatio	C23t/C30H			7.90613463695566E-02	ratio	Y
BiomRatio	C24t/C23t			0.711404022102432	ratio	Y
BiomRatio	C24Tet/C23t			1.54981262449499	ratio	Y
BiomRatio	C24Tet/C26t			2.01950660118518	ratio	Y
BiomRatio	C24Tet/C30H			0.12253027271311	ratio	Y
BiomRatio	C26t/C25t			0.848710797143928	ratio	Y
BiomRatio	C27 Dia/(Dia+Reg)			0.404693431758698	ratio	Y
BiomRatio	C27 Dia/Ster			0.363492515911041	ratio	Y
BiomRatio	C28BNH/C30H			2.49758724939491E-02	ratio	Y
BiomRatio	C29/C27 abb Sterane Ratio			1.34804277660828	ratio	Y
BiomRatio	C29H/C30H			0.81678341084594	ratio	Y
BiomRatio	C29Ts/(C29Ts+C29H)			7.67577812189724E-02	ratio	Y
BiomRatio	C30DiaH/C30H			3.81622096213385E-02	ratio	Y
BiomRatio	C30Ts/C30H			8.46901932131218E-02	ratio	Y
BiomRatio	C35 Homohopane Index			9.74050938687035E-02	ratio	Y
BiomRatio	C35HS/C34HS			1.03424885634695	ratio	Y
BiomRatio	Gam/C30H			7.79012597552131E-02	ratio	Y
BiomRatio	Gam/C31HR			0.224619000726153	ratio	Y
BiomRatio	Ole/C30H			8.38128657551525E-02	ratio	Y
BiomRatio	Sterane/hopane			0.381430371921228	ratio	Y
BiomRatio	Steranes/Terpanes			0.332396699890568	ratio	Y
BiomRatio	Tricyclic/Pentacyclic Terpanes			0.147515520000054	ratio	Y

Results for: Elemental Analyser

Unique ID: W13/007833_SPE_ELEM-AN/01

Instrument / Type: Elemental Analyser Run: 1

for Analysis: Elemental CHNS

Analysis Date: 30/10/2017

Linked Image: [None available](#)

Preparation: Solid Phase Extract

Method ID/s:

Sample Volume:

Volume Units:

Extract Volume:

Dilution Factor:

Comment:

Results for: Elemental Analyser**Data Sheet:**

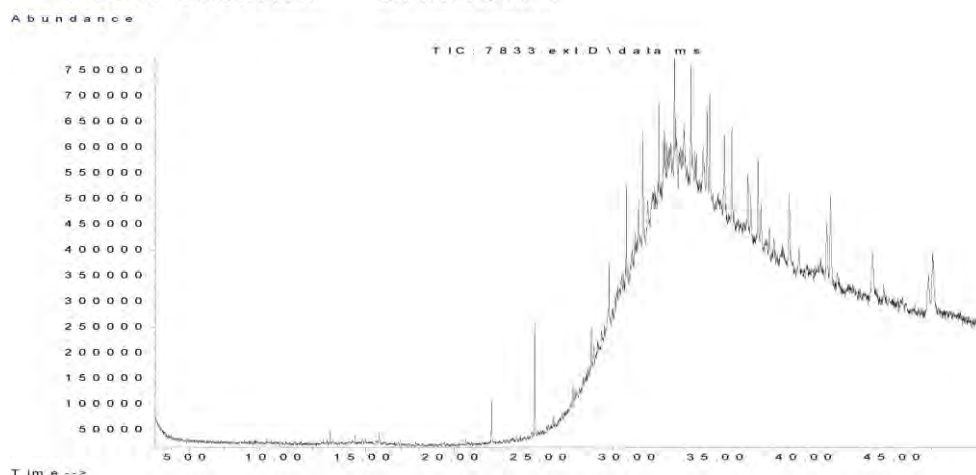
(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Respns:	Value:	units:	Qualifier:
Inorg	Carbon			83.2602534178059	percent	Y
Inorg	Hydrogen			6.58708548707753	percent	Y
Inorg	Nitrogen			0.67	percent	Y
Inorg	Sulphur			3.90785131402546	percent	Y

Results for: GCMS with Full Scan**Unique ID:** W13/007833_DISS_GCMS-Scan/01**Instrument / Type:** GCMS with Full Scan Run: 1**for Analysis:** Whole Oils**Preparation:** Dissolved in solvent**Analysis Date:** 30/10/2017**Method ID/s:****Linked Image:** [LinkedFiles\GAB_BCH1\GCMS\W13_007833_ext_WholeOil.jpg](#)**Sample Volume:****Volume Units:****Extract Volume:****Dilution Factor:****Comment:** Exterior

Results for: GCMS with Full Scan

7833 exterior – Unknown



Data Sheet:

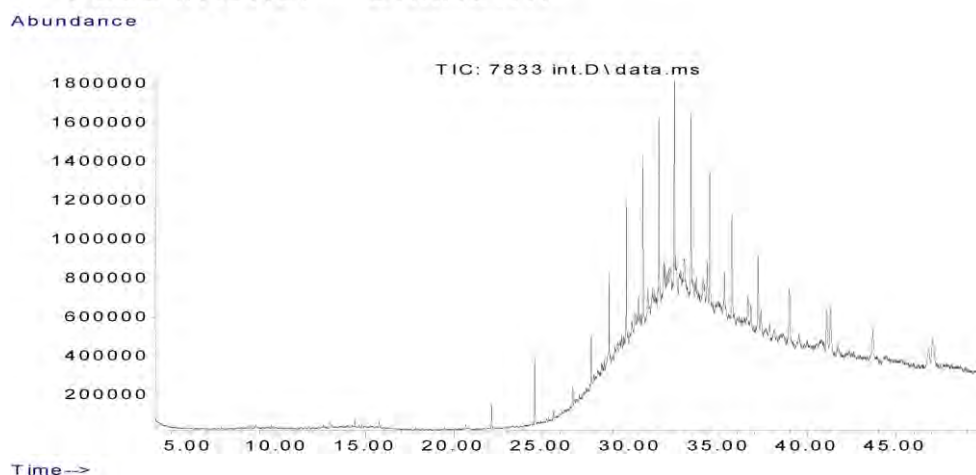
(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Respse:	Value:	units:	Qualifier:
Aliph	Botryococcane	31.9240				U
Aliph	nC10	7.5110				U
Aliph	nC11	9.4450				U
Aliph	nC12	11.3220				U
Aliph	nC13	13.1110				U
Aliph	nC14	14.8030				U
Aliph	nC15	16.4030				U
Aliph	nC16	17.9160				U
Aliph	nC17	19.3500				U
Aliph	nC18	20.7170				U
Aliph	nC19	22.0170				U
Aliph	nC20	23.2570				U
Aliph	nC21	24.4410				U
Aliph	nC22	25.5760	88472			Z
Aliph	nC23	26.6620	199831			Z
Aliph	nC24	27.7060	376642			Z
Aliph	nC25	28.7100	613460			Z
Aliph	nC26	29.6680	830490			Z
Aliph	nC27	30.6080	936542			Z
Aliph	nC28	31.5080	716078			Z
Aliph	nC29	32.3700	714119			Z
Aliph	nC30	33.2910	872682			Z
Aliph	nC31	34.3470	1140497			Z
Aliph	nC32	35.5720	1166543			Z
Aliph	nC33	37.0130	1046236			Z
Aliph	nC34	38.7280	1113247			Z
Aliph	nC35	40.8080	987787			Z
Aliph	nC36	43.3510	1211393			Z
Aliph	nC37	46.4710	799717			Z
Aliph	nC8	4.0300				U
Aliph	nC9	5.6200				U
Aliph	Norpristane	18.5830				U
Aliph	Phytane	20.7870				U
Aliph	Pristane	19.3870				U

Results for: GCMS with Full Scan**Results for: GCMS with Full Scan****Unique ID:** W13/007833 DISS GCMS-Scan/02**Instrument / Type:** GCMS with Full Scan Run: 2**for Analysis:** Whole Oils**Preparation:** Dissolved in solvent**Analysis Date:** 30/10/2017**Method ID/s:****Linked Image:** [LinkedFiles\GAB_BCH1\GCMS\W13_007833_int_WholeOil.jpg](#)**Sample Volume:****Volume Units:****Extract Volume:****Dilution Factor:****Comment:** Interior

Results for: GCMS with Full Scan

7833 interior – Unknown



Data Sheet:

(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Respnse:	Value:	units:	Qualifier:
Aliph	Botryococcane	31.9240				U
Aliph	nC10	7.5110				U
Aliph	nC11	9.4450				U
Aliph	nC12	11.3220				U
Aliph	nC13	13.1110				U
Aliph	nC14	14.8030				U
Aliph	nC15	16.4030				U
Aliph	nC16	17.9160				U
Aliph	nC17	19.3500				U
Aliph	nC18	20.7170				U
Aliph	nC19	22.0170				U
Aliph	nC20	23.2570				U
Aliph	nC21	24.4410	79262			Z
Aliph	nC22	25.5760	208247			Z
Aliph	nC23	26.6620	453853			Z
Aliph	nC24	27.7060	1129209			Z
Aliph	nC25	28.7100	1856653			Z
Aliph	nC26	29.6680	3207422			Z
Aliph	nC27	30.6080	3546475			Z
Aliph	nC28	31.5080	3848392			Z
Aliph	nC29	32.3700	4264985			Z
Aliph	nC30	33.2910	4558468			Z
Aliph	nC31	34.3470	4108205			Z
Aliph	nC32	35.5720	3657015			Z
Aliph	nC33	37.0130	3106993			Z
Aliph	nC34	38.7280	2798033			Z
Aliph	nC35	40.8080	2362026			Z
Aliph	nC36	43.3510	2253711			Z
Aliph	nC37	46.4710	1592031			Z
Aliph	nC8	4.0300				U
Aliph	nC9	5.6200				U
Aliph	Norpristane	18.5830				U
Aliph	Phytane	20.7870				U
Aliph	Pristane	19.3870				U

Results for: GCMS with Full Scan**Qualifier codes:**

A	TIC is a possible aldol-condensation product
B	Analyte was also detected in the blank
D	Compound quantitated on a diluted sample
E	Inorganics: Estimated due to interference Organics: Concentration exceeds the calibration range of the instrument
J	Estimated - Result is \geq the Method Detection Limit (MDL) and $<$ the Limit of Quantitation (LOQ)
M	Duplicate injection precision not met
N	Spike sample not within control limits
O	Presumptive evidence of a compound
P	Concentration difference between primary and confirmation columns $> 25\%$
R	Spike/Surrogate failed recovery limits
S	Method of standard additions (MSA) used for calculation
T	Detected but Quantitated amount exceeded maximum
U	Compound Not Detected
V	overloaded and possibly not a water extract
X	Duplicate analysis not within control limits
Y	Detected
Z	Detected but not Quantified (too small)

Sample ID : **W13/007658**

Beach W18: Tyringa Beach Visit: 2

Comments:

Location: Mid Intertidal

Local Date Time: 21/09/2015 10:22:42 AM

Type: Asphaltite

Family: Asphaltite

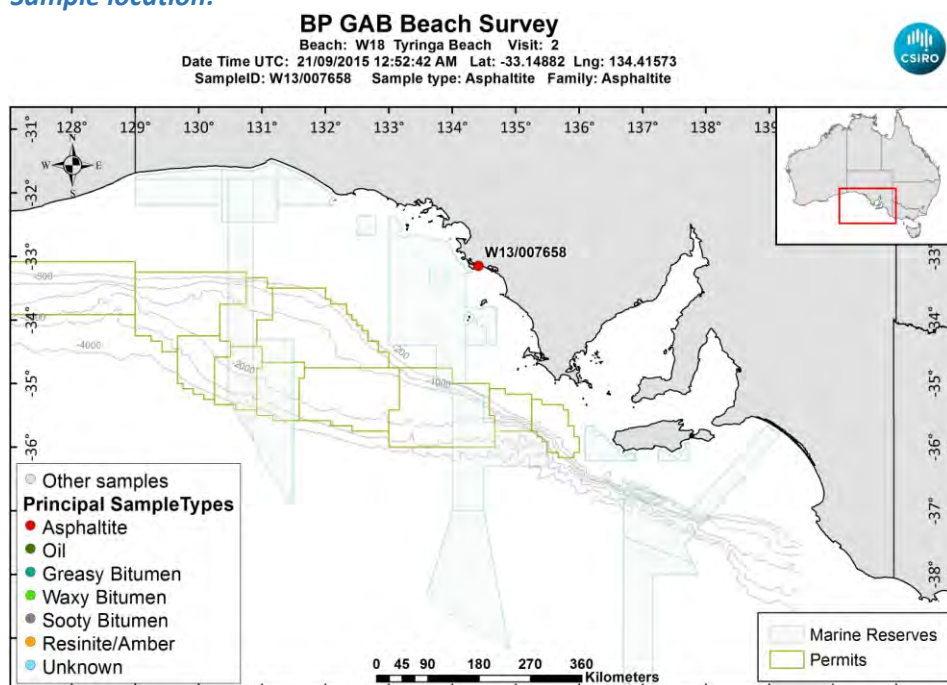
Size (cm): 1.5

Latitude (Y): -33.148815

Weight (gm): 1

Longitude (X): 134.415730

Sample location:



[LinkedFiles\GAB_BCH1\SampleLocations\W13_007658_Location.jpg](#)

Sample - field image:



[LinkedFiles\GAB_BCH1\Samples\W13_007658_146A1756.JPG](#)

Sample - laboratory image:



[LinkedFiles\GAB_BCH1\Samples\W13_007658_Photo02.JPG](#)

Analyses Requested

Split:	Analysis:	Sent:
1	Bitumen Determination	YES
2	Whole Oils	YES

Analyses Completed:

Analysis:	Instrument/Type:
Elemental CHNS	Elemental Analyser Run: 1

Sample Analyses Completed:

Results for: Elemental Analyser

Unique ID: W13/007658_SPE_ELEM-AN/01

Instrument / Type: Elemental Analyser Run: 1

for Analysis: Elemental CHNS

Analysis Date: 30/10/2017

Linked Image: [None available](#)

Preparation: Solid Phase Extract

Method ID/s:

Sample Volume:

Volume Units:

Extract Volume:

Dilution Factor:

Comment:

Data Sheet:

(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Respse:	Value:	units:	Qualifier:
Inorg	Carbon			85.68	percent	Y
Inorg	Hydrogen			8.80525964214712	percent	Y
Inorg	Nitrogen			0.455424507283633	percent	Y
Inorg	Sulphur			5.05504508343938	percent	Y

Qualifier codes:

A	TIC is a possible aldol-condensation product
B	Analyte was also detected in the blank
D	Compound quantitated on a diluted sample
E	Inorganics: Estimated due to interference Organics: Concentration exceeds the calibration range of the instrument
J	Estimated - Result is \geq the Method Detection Limit (MDL) and $<$ the Limit of Quantitation (LOQ)
M	Duplicate injection precision not met
N	Spike sample not within control limits
O	Presumptive evidence of a compound
P	Concentration difference between primary and confirmation columns $> 25\%$
R	Spike/Surrogate failed recovery limits
S	Method of standard additions (MSA) used for calculation
T	Detected but Quantitated amount exceeded maximum
U	Compound Not Detected
V	overloaded and possibly not a water extract
X	Duplicate analysis not within control limits
Y	Detected
Z	Detected but not Quantified (too small)

Sample ID : **W13/007834**

Beach W18: Tyringa Beach Visit: 3

Comments:

Charcoal?

Location: Upper Intertidal

Local Date Time: 10/10/2016 9:25:15 AM

Type: Unknown

Family: Not bitumen (false sample)

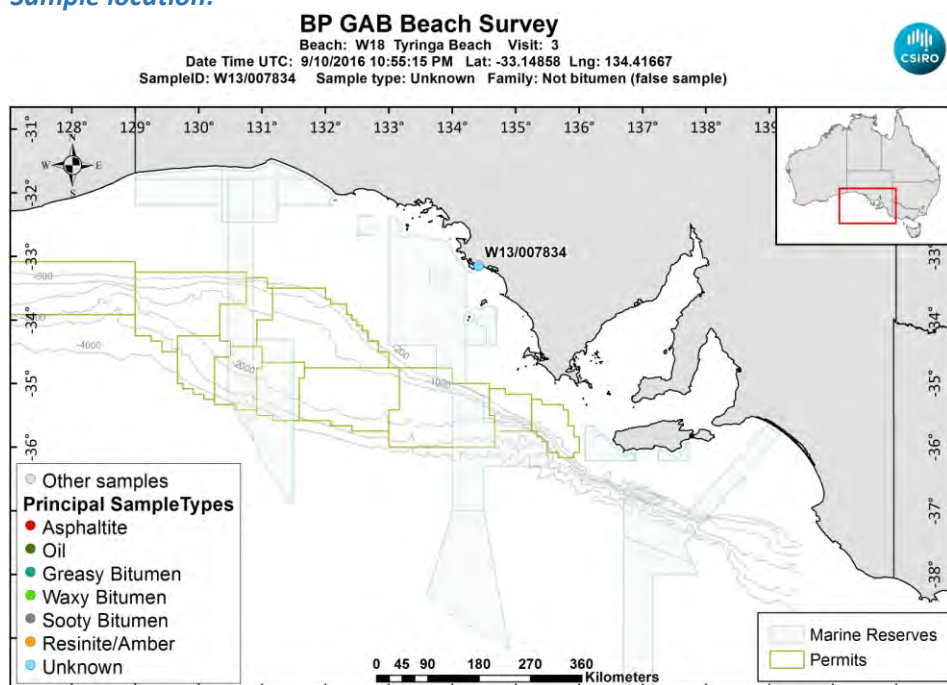
Size (cm): 1.2

Latitude (Y): -33.148585

Weight (gm): 0.52993

Longitude (X): 134.416668

Sample location:



[LinkedFiles\GAB_BCH1\SampleLocations\W13_007834_Location.jpg](#)

Sample - field image:



[LinkedFiles\GAB_BCH1\Samples\W13_007834_146A6591.JPG](#)

Sample - laboratory image:



[LinkedFiles\GAB_BCH1\Samples\W13_007834_Photo02.JPG](#)

Analyses Requested

Split:	Analysis:	Sent:
1	Bitumen Determination	YES

Analyses Completed:

Analysis:	Instrument/Type:
Whole Oils	GCMS with Full Scan Run: 1

Sample Analyses Completed:**Results for: GCMS with Full Scan**

Unique ID: W13/007834 DISS GCMS-Scan/01

Instrument / Type: GCMS with Full Scan Run: 1

for Analysis: Whole Oils

Analysis Date: 30/10/2017

Linked Image: [None available](#)

Preparation: Dissolved in solvent

Method ID/s:

Sample Volume:

Volume Units:

Extract Volume:

Dilution Factor:

Comment:

Results for: GCMS with Full Scan

Data Sheet:

(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Respns:	Value:	units:	Qualifier:
Aliph	Botryococcane	31.9240				U
Aliph	nC10	7.5110				U
Aliph	nC11	9.4450				U
Aliph	nC12	11.3220				U
Aliph	nC13	13.1110				U
Aliph	nC14	14.8030				U
Aliph	nC15	16.4030				U
Aliph	nC16	17.9160				U
Aliph	nC17	19.3500				U
Aliph	nC18	20.7170				U
Aliph	nC19	22.0170				U
Aliph	nC20	23.2570				U
Aliph	nC21	24.4410				U
Aliph	nC22	25.5760				U
Aliph	nC23	26.6620				U
Aliph	nC24	27.7060				U
Aliph	nC25	28.7100				U
Aliph	nC26	29.6680				U
Aliph	nC27	30.6080				U
Aliph	nC28	31.5080				U
Aliph	nC29	32.3700				U
Aliph	nC30	33.2910				U
Aliph	nC31	34.3470				U
Aliph	nC32	35.5720				U
Aliph	nC33	37.0130				U
Aliph	nC34	38.7280				U
Aliph	nC35	40.8080				U
Aliph	nC36	43.3510				U
Aliph	nC37	46.4710				U
Aliph	nC8	4.0300				U
Aliph	nC9	5.6200				U
Aliph	Norpristane	18.5830				U
Aliph	Phytane	20.7870				U
Aliph	Pristane	19.3870				U

Qualifier codes:

A	TIC is a possible aldol-condensation product
B	Analyte was also detected in the blank
D	Compound quantitated on a diluted sample
E	Inorganics: Estimated due to interference Organics: Concentration exceeds the calibration range of the instrument
J	Estimated - Result is \geq the Method Detection Limit (MDL) and $<$ the Limit of Quantitation (LOQ)
M	Duplicate injection precision not met
N	Spike sample not within control limits
O	Presumptive evidence of a compound
P	Concentration difference between primary and confirmation columns $> 25\%$
R	Spike/Surrogate failed recovery limits
S	Method of standard additions (MSA) used for calculation
T	Detected but Quantitated amount exceeded maximum
U	Compound Not Detected
V	overloaded and possibly not a water extract
X	Duplicate analysis not within control limits
Y	Detected
Z	Detected but not Quantified (too small)

Sample ID : **W13/007566**

Beach K10: Unnamed Bav Visit: 1

Comments:

Hand delivered. Added to data set post survey

Location: Upper Intertidal

Local Date Time: 22/04/2015 12:01:00 PM

Type: Asphaltite

Family: Asphaltite

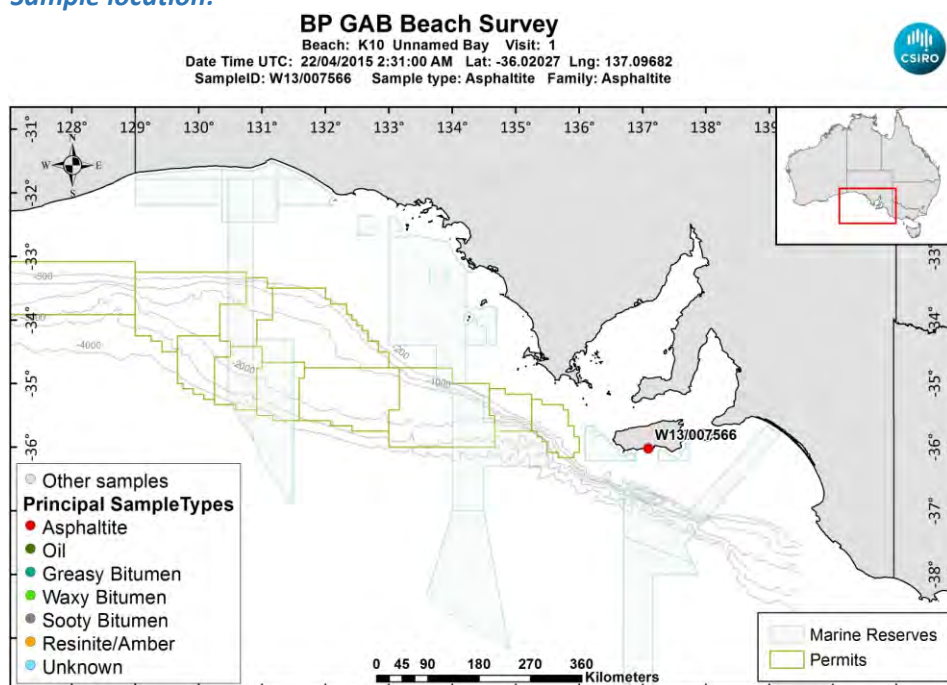
Size (cm): 10

Latitude (Y): -36.020269

Weight (gm): 0

Longitude (X): 137.096821

Sample location:



[LinkedFiles\GAB_BCH1\SampleLocations\W13_007566_Location.jpg](#)

Sample - field image:



[LinkedFiles\GAB_BCH1\Samples\W13_007566_Photo02.JPG](#)

Sample - laboratory image:



[LinkedFiles\GAB_BCH1\Samples\W13_007566_Photo03.JPG](#)

Analyses Requested

Split:	Analysis:	Sent:
1	Bitumen Determination	YES
2	Whole Oils	YES
4	Biomarkers	YES
5	CSIA	YES
6	CSIA	YES

Analyses Completed:

Analysis:	Instrument/Type:
Biomarkers	Gas Chromatography Mass Spectrometry Run: 2
Biomarkers	Gas Chromatography Mass Spectrometry Run: 1
CSIA	Compound Specific Isotope Analysis d13C Run: 3
CSIA	Compound Specific Isotope Analysis d2H Run: 2
Elemental CHNS	Elemental Analyser Run: 1
Whole Oils	GCMS with Full Scan Run: 2

Sample Analyses Completed:

Results for: Gas Chromatography Mass Spectrometry

Unique ID: W13/007566_DISS_GC-MS/01

Instrument / Type: Gas Chromatography Mass Spectrometry Run: 1

for Analysis: Biomarkers

Analysis Date: 18/07/2017

Linked Image: [None available](#)

Preparation: Dissolved in solvent

Method ID/s:

Sample Volume:

Volume Units:

Extract Volume:

Dilution Factor:

Comment: External Ratios only

Results for: Gas Chromatography Mass Spectrometry

Data Sheet:

(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Rspnse:	Value:	units:	Qualifier:
BiomRatio	% C27 aaa 20R			13.0891357333589	ratio	Y
BiomRatio	% C27 abb 20(R+S)			13.8645139961625	ratio	Y
BiomRatio	% C28 aaa 20R			24.8564254587133	ratio	Y
BiomRatio	% C28 abb 20(R+S)			31.3330472107604	ratio	Y
BiomRatio	% C29 aaa 20R			62.0544388079278	ratio	Y
BiomRatio	% C29 abb 20(R+S)			54.8024387930771	ratio	Y
BiomRatio	(C21+C22)/(C27+C28+C29)			6.47287555370045E-02	ratio	Y
BiomRatio	25-Nor/C30H			2.54867809083242E-02	ratio	Y
BiomRatio	C19t/C23t			0.614382555443459	ratio	Y
BiomRatio	C22t/C21t			0.477532860102571	ratio	Y
BiomRatio	C22t/C24t			0.310204081632653	ratio	Y
BiomRatio	C23t/C30H			1.41307272976469E-02	ratio	Y
BiomRatio	C24t/C23t			0.802226588081205	ratio	Y
BiomRatio	C24Tet/C23t			1.44124674773005	ratio	Y
BiomRatio	C24Tet/C26t			1.63933403124497	ratio	Y
BiomRatio	C24Tet/C30H			2.03658647607938E-02	ratio	Y
BiomRatio	C26t/C25t			0.816356046412254	ratio	Y
BiomRatio	C27 Dia/(Dia+Reg)			0.302023721985997	ratio	Y
BiomRatio	C27 Dia/Ster			0.188960313233673	ratio	Y
BiomRatio	C28BNH/C30H			3.94751980087577E-02	ratio	Y
BiomRatio	C29/C27 abb Sterane Ratio			3.95271257313784	ratio	Y
BiomRatio	C29H/C30H			0.662569016694062	ratio	Y
BiomRatio	C29Ts/(C29Ts+C29H)			0.18052967042145	ratio	Y
BiomRatio	C30DiaH/C30H			8.42498877024982E-02	ratio	Y
BiomRatio	C30Ts/C30H			4.30972301283443E-02	ratio	Y
BiomRatio	C35 Homohopane Index			6.55344803938004E-02	ratio	Y
BiomRatio	C35HS/C34HS			0.842855191996022	ratio	Y
BiomRatio	Gam/C30H			8.70070539838352E-02	ratio	Y
BiomRatio	Gam/C31HR			0.266489916264433	ratio	Y
BiomRatio	Ole/C30H			9.12035791139652E-03	ratio	Y
BiomRatio	Sterane/hopane			0.175218739086788	ratio	Y
BiomRatio	Steranes/Terpanes			0.170557854344795	ratio	Y
BiomRatio	Tricyclic/Pentacyclic Terpanes			2.73272946584495E-02	ratio	Y

Results for: Gas Chromatography Mass Spectrometry

Unique ID: W13/007566 DISS GC-MS/02

Instrument / Type: Gas Chromatography Mass Spectrometry Run: 2

for Analysis: Biomarkers

Preparation: Dissolved in solvent

Analysis Date: 18/07/2017

Method ID/s:

Linked Image: [None available](#)

Sample Volume:

Volume Units:

Extract Volume:

Dilution Factor:

Comment: Internal Ratios only

Results for: Gas Chromatography Mass Spectrometry

Data Sheet:

(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Respns:	Value:	units:	Qualifier:
BiomRatio	% C27 aaa 20R			37.7754364438991	ratio	Y
BiomRatio	% C27 abb 20(R+S)			38.2449396048716	ratio	Y
BiomRatio	% C28 aaa 20R			24.5422173617316	ratio	Y
BiomRatio	% C28 abb 20(R+S)			26.1704044427408	ratio	Y
BiomRatio	% C29 aaa 20R			37.6823461943692	ratio	Y
BiomRatio	% C29 abb 20(R+S)			35.5846559523876	ratio	Y
BiomRatio	(C21+C22)/(C27+C28+C29)			0.105879809613778	ratio	Y
BiomRatio	25-Nor/C30H			3.06034454117166E-02	ratio	Y
BiomRatio	C19t/C23t			0.327435133134615	ratio	Y
BiomRatio	C22t/C21t			0.345521410579345	ratio	Y
BiomRatio	C22t/C24t			0.313226710996228	ratio	Y
BiomRatio	C23t/C30H			7.38121096631151E-02	ratio	Y
BiomRatio	C24t/C23t			0.547557364914878	ratio	Y
BiomRatio	C24Tet/C23t			0.865955148338568	ratio	Y
BiomRatio	C24Tet/C26t			1.52872101852342	ratio	Y
BiomRatio	C24Tet/C30H			6.39179763725055E-02	ratio	Y
BiomRatio	C26t/C25t			1.02237707951581	ratio	Y
BiomRatio	C27 Dia/(Dia+Reg)			0.435526436570589	ratio	Y
BiomRatio	C27 Dia/Ster			0.424563546392491	ratio	Y
BiomRatio	C28BNH/C30H			4.33463596367204E-02	ratio	Y
BiomRatio	C29/C27 abb Sterane Ratio			0.930440898064716	ratio	Y
BiomRatio	C29H/C30H			0.660404418360664	ratio	Y
BiomRatio	C29Ts/(C29Ts+C29H)			0.179194700465058	ratio	Y
BiomRatio	C30DiaH/C30H			9.25342521885445E-02	ratio	Y
BiomRatio	C30Ts/C30H			4.11177616710682E-02	ratio	Y
BiomRatio	C35 Homohopane Index			7.82701390605785E-02	ratio	Y
BiomRatio	C35HS/C34HS			0.847555360531016	ratio	Y
BiomRatio	Gam/C30H			8.84882966305607E-02	ratio	Y
BiomRatio	Gam/C31HR			0.259296719415775	ratio	Y
BiomRatio	Ole/C30H			1.07092309066706E-02	ratio	Y
BiomRatio	Sterane/hopane			0.303916766971566	ratio	Y
BiomRatio	Steranes/Terpanes			0.276206672291483	ratio	Y
BiomRatio	Tricyclic/Pentacyclic Terpanes			0.100323770060267	ratio	Y

Results for: Compound Specific Isotope Analysis d13C

Unique ID: W13/007566_PTE_CSIA-C13/03

Instrument / Type: Compound Specific Isotope Analysis d13C Run: 3

for Analysis: CSIA

Preparation: Pentane Extraction

Analysis Date: 17/07/2017

Method ID/s: Final d13C

Linked Image: [None available](#)

Sample Volume:

Volume Units:

Extract Volume:

Dilution Factor:

Comment: Internal Final d13C

Results for: Compound Specific Isotope Analysis d13C

Data Sheet:

(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Respns:	Value:	units:	Qualifier:
Aliph	nC13			-28.302	value	Y
Aliph	nC14			-30.367	value	Y
Aliph	nC15			-30.723	value	Y
Aliph	nC16			-31.307	value	Y
Aliph	nC17			-33.066	value	Y
Aliph	nC18			-31.974	value	Y
Aliph	nC19			-31.909	value	Y
Aliph	nC20			-31.859	value	Y
Aliph	nC21			-32.342	value	Y
Aliph	nC22			-32.743	value	Y
Aliph	nC23			-32.951	value	Y
Aliph	nC24			-32.296	value	Y
Aliph	nC25			-32.274	value	Y
Aliph	nC26			-32.17	value	Y
Aliph	nC27			-32.366	value	Y
Aliph	nC28			-32.078	value	Y
Aliph	nC29			-31.592	value	Y
Aliph	nC30			-31.644	value	Y
Aliph	nC31			-31.641	value	Y
Aliph	nC32			-31.781	value	Y
Aliph	nC33			-31.397	value	Y
Aliph	nC34			-30.666	value	Y
Aliph	nC35			-30.903	value	Y
Aliph	nC36			-32.49	value	Y
Aliph	nC37			-31.982	value	Y
Aliph	nC38			-32.534	value	Y
Aliph	nC39			-30.184	value	Y

Results for: Compound Specific Isotope Analysis d2H

Unique ID: W13/007566_PTE_CSIA/02

Instrument / Type: Compound Specific Isotope Analysis d2H Run: 2

for Analysis: CSIA

Preparation: Pentane Extraction

Analysis Date: 17/07/2017

Method ID/s: Final d 2H/1H

Linked Image: [None available](#)

Sample Volume:

Volume Units:

Extract Volume:

Dilution Factor:

Comment: Internal 2H analysis

Results for: Compound Specific Isotope Analysis d2H

Data Sheet:

(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Rspnse:	Value:	units:	Qualifier:
Aliph	nC13			-71.3365	value	Y
Aliph	nC14			-90.494	value	Y
Aliph	nC15			-96.4945	value	Y
Aliph	nC16			-101.633	value	Y
Aliph	nC17			-101.1015	value	Y
Aliph	nC18			-102.1785	value	Y
Aliph	nC19			-112.6295	value	Y
Aliph	nC20			-112.6935	value	Y
Aliph	nC21			-115.6695	value	Y
Aliph	nC22			-111.6785	value	Y
Aliph	nC23			-114.035	value	Y
Aliph	nC24			-113.016	value	Y
Aliph	nC25			-119.9505	value	Y
Aliph	nC26			-114.729	value	Y
Aliph	nC27			-117.6705	value	Y
Aliph	nC28			-113.001	value	Y
Aliph	nC29			-112.9335	value	Y
Aliph	nC30			-108.5285	value	Y
Aliph	nC31			-127.7625	value	Y
Aliph	nC32			-100.393	value	Y
Aliph	nC33			-101.11	value	Y
Aliph	nC34			-93.45	value	Y
Aliph	nC35			-83.9175	value	Y
Aliph	nC36				value	U
Aliph	nC37				value	U
Aliph	nC38				value	U
Aliph	nC39				value	U

Results for: Elemental Analyser

Unique ID: W13/007566_SPE_ELEM-AN/01

Instrument / Type: Elemental Analyser Run: 1

for Analysis: Elemental CHNS

Analysis Date: 30/10/2017

Linked Image: [None available](#)

Preparation: Solid Phase Extract

Method ID/s:

Sample Volume:

Volume Units:

Extract Volume:

Dilution Factor:

Comment:

Data Sheet:

(default units ppb)

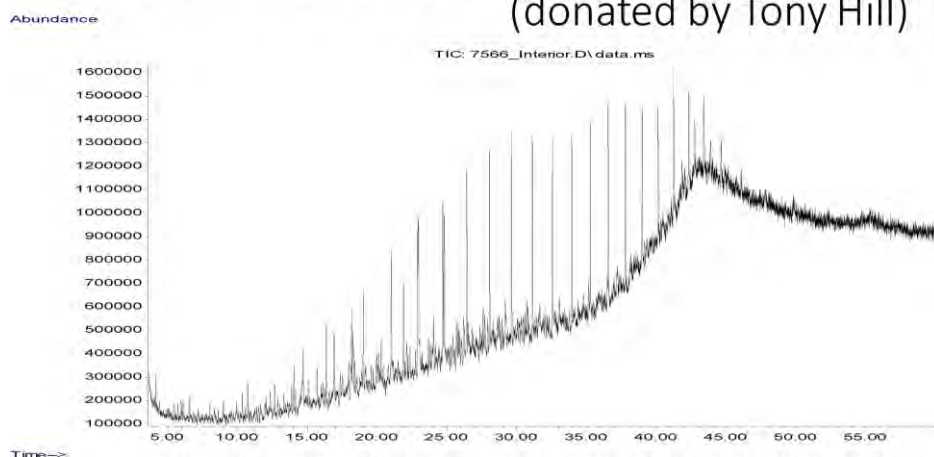
Type:	Compound / Variable:	Retentn Time:	Target Rspnse:	Value:	units:	Qualifier:
Inorg	Carbon			86.44	percent	Y
Inorg	Hydrogen			10.2003088667992	percent	Y
Inorg	Nitrogen			0.84	percent	Y
Inorg	Sulphur			5.61710144881559	percent	Y

Results for: GCMS with Full Scan

Results for: GCMS with Full Scan**Unique ID:** W13/007566 DISS GCMS-Scan/02**Instrument / Type:** GCMS with Full Scan Run: 2**for Analysis:** Whole Oils**Preparation:** Dissolved in solvent**Analysis Date:** 18/11/2016**Method ID/s:****Linked Image:** [LinkedFiles\GAB BCH1\GCMS\W13 007566 int WholeOil.jpg](#)**Sample Volume:****Volume Units:****Extract Volume:****Dilution Factor:****Comment:** Interior

Results for: GCMS with Full Scan

7566 interior – Asphaltite from sand dune
(donated by Tony Hill)



Data Sheet:

(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Rspnse:	Value:	units:	Qualifier:
Ratio	nC17/nC29			1.17228418604445	ug/L	Y
Ratio	nC17/nC35			12.7705199147421	ug/L	Y
Ratio	nC17/Pristane			0.806711054653343	ug/L	Y
Ratio	nC18/Phytane			1.70072238640414	ug/L	Y
Ratio	Pristane/Phytane			1.93455811219271	ug/L	Y
Aliph	Botryococcane	39.4780			ug/L	U
Aliph	nC10	7.5100			ug/L	U
Aliph	nC11	9.9450			ug/L	U
Aliph	nC12	12.3690	648422		ug/L	Z
Aliph	nC13	14.7030	1218864		ug/L	Z
Aliph	nC14	16.9230	2088982		ug/L	Z
Aliph	nC15	19.0270	2408021		ug/L	Z
Aliph	nC16	21.0200	2853885		ug/L	Z
Aliph	nC17	22.9150	3708725		ug/L	Z
Aliph	nC18	24.7150	4041646		ug/L	Z
Aliph	nC19	26.4300	4055737		ug/L	Z
Aliph	nC20	28.0680	4368220		ug/L	Z
Aliph	nC21	29.6330	4402979		ug/L	Z
Aliph	nC22	31.1340	4360106		ug/L	Z
Aliph	nC23	32.5720	4230677		ug/L	Z
Aliph	nC24	33.9520	4175999		ug/L	Z
Aliph	nC25	35.2810	4417562		ug/L	Z
Aliph	nC26	36.5600	4496063		ug/L	Z
Aliph	nC27	37.7930	4176136		ug/L	Z
Aliph	nC28	38.9870	3535029		ug/L	Z
Aliph	nC29	40.1370	3163674		ug/L	Z
Aliph	nC30	41.2480	2924630		ug/L	Z
Aliph	nC31	42.3270	2359321		ug/L	Z
Aliph	nC32	43.4130	1543970		ug/L	Z
Aliph	nC33	44.6430	1214135		ug/L	Z
Aliph	nC34	46.0860	910406		ug/L	Z
Aliph	nC35	47.8060	290413		ug/L	Z
Aliph	nC36	49.8090			ug/L	U
Aliph	nC37	52.2960			ug/L	U

Results for: GCMS with Full Scan

Aliph	nC38	55.2370		ug/L	U
Aliph	nC39	58.8850		ug/L	U
Aliph	Norpristane	21.9070	3700791	ug/L	Z
Aliph	Phytane	24.8210	2376429	ug/L	Z
Aliph	Pristane	22.9640	4597340	ug/L	Z

Qualifier codes:

A	TIC is a possible aldol-condensation product
B	Analyte was also detected in the blank
D	Compound quantitated on a diluted sample
E	Inorganics: Estimated due to interference Organics: Concentration exceeds the calibration range of the instrument
J	Estimated - Result is \geq the Method Detection Limit (MDL) and $<$ the Limit of Quantitation (LOQ)
M	Duplicate injection precision not met
N	Spike sample not within control limits
O	Presumptive evidence of a compound
P	Concentration difference between primary and confirmation columns $> 25\%$
R	Spike/Surrogate failed recovery limits
S	Method of standard additions (MSA) used for calculation
T	Detected but Quantitated amount exceeded maximum
U	Compound Not Detected
V	overloaded and possibly not a water extract
X	Duplicate analysis not within control limits
Y	Detected
Z	Detected but not Quantified (too small)

Sample ID : **W13/007502**

Beach E1: Waitpinga Beach Visit: 1

Comments:
two pieces

Location: Shore Upper

Local Date Time: 22/11/2014 10:42:00 AM

Type: Waxy Bitumen

Family: Type III waxy bitumen (no botryococcane, low

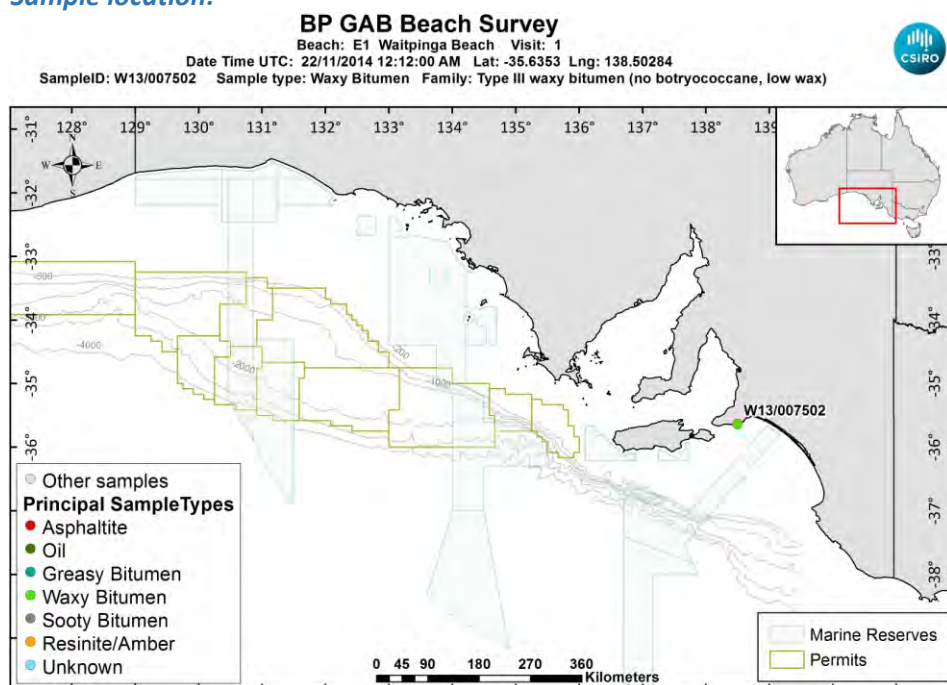
Size (cm): 3

Latitude (Y): -35.635299

Weight (gm): 4.23504

Longitude (X): 138.502845

Sample location:



[LinkedFiles\GAB_BCH1\SampleLocations\W13_007502_Location.jpg](#)

Sample - field image:



[LinkedFiles\GAB_BCH1\Samples\W13_007502_146A0505.JPG](#)

Sample - laboratory image:



[LinkedFiles\GAB_BCH1\Samples\W13_007502_Photo01.JPG](#)

Analyses Requested

Split:	Analysis:	Sent:
1	Bitumen Determination	YES
2	Whole Oils	YES
3	Elemental CHNS	YES

Analyses Completed:

Analysis:	Instrument/Type:
Elemental CHNS	Elemental Analyser Run: 1
Whole Oils	GCMS with Full Scan Run: 2
Whole Oils	GCMS with Full Scan Run: 1

Sample Analyses Completed:

Results for: Elemental Analyser

Unique ID: W13/007502_UNK_ELEM-AN/01

Instrument / Type: Elemental Analyser Run: 1

for Analysis: Elemental CHNS

Preparation: Unknown

Analysis Date:

Method ID/s:

Linked Image: [None available](#)

Sample Volume:

Volume Units:

Extract Volume:

Dilution Factor:

Comment:

Data Sheet:

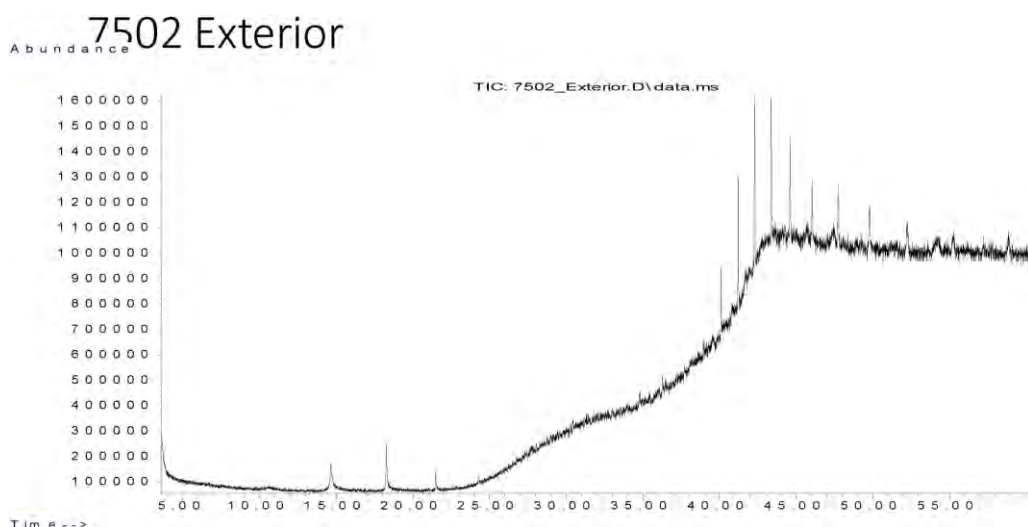
Type:	Compound / Variable:	Retentn Time:	Target Respse:	Value:	units:	Qualifier:
Inorg	Carbon			86.13	percent	Y
Inorg	delta13 Carbon				per mille	U
Inorg	delta34 Sulphur				per mille	U
Inorg	Hydrogen			10.86	percent	Y
Inorg	Nitrogen			0.12	percent	Y
Inorg	Sulphur			1.28	percent	Y

Results for: GCMS with Full Scan

Unique ID: W13/007502_DISS_GCMS-Scan/01

Results for: GCMS with Full Scan**Instrument / Type:** GCMS with Full Scan Run: 1**for Analysis:** Whole Oils**Preparation:** Dissolved in solvent**Analysis Date:** 18/11/2016**Method ID/s:****Linked Image:** [LinkedFiles\GAB_BCH1\GCMS\W13_007502_ext_WholeOil.jpg](#)**Sample Volume:****Volume Units:****Extract Volume:****Dilution Factor:****Comment:** Exterior

Results for: GCMS with Full Scan



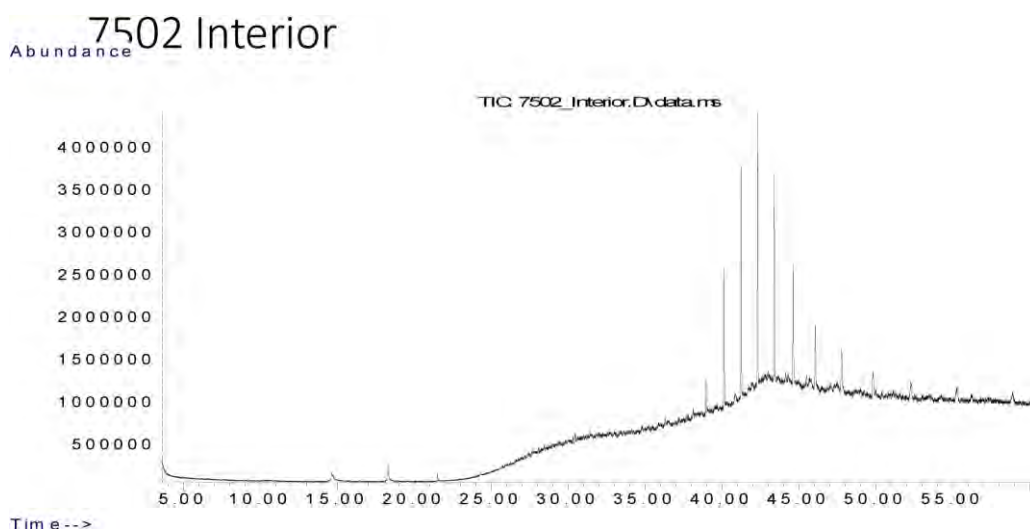
Data Sheet:

(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Respse:	Value:	units:	Qualifier:
Aliph	Botryococcane	39.4780			ug/L	U
Aliph	nC10	7.5100			ug/L	U
Aliph	nC11	9.9450			ug/L	U
Aliph	nC12	12.3690			ug/L	U
Aliph	nC13	14.7030			ug/L	U
Aliph	nC14	16.9230			ug/L	U
Aliph	nC15	19.0270			ug/L	U
Aliph	nC16	21.0200			ug/L	U
Aliph	nC17	22.9150			ug/L	U
Aliph	nC18	24.7150			ug/L	U
Aliph	nC19	26.4300			ug/L	U
Aliph	nC20	28.0680			ug/L	U
Aliph	nC21	29.6330			ug/L	U
Aliph	nC22	31.1340			ug/L	U
Aliph	nC23	32.5720			ug/L	U
Aliph	nC24	33.9520			ug/L	U
Aliph	nC25	35.2810			ug/L	U
Aliph	nC26	36.5600			ug/L	U
Aliph	nC27	37.7930			ug/L	U
Aliph	nC28	38.9870			ug/L	U
Aliph	nC29	40.1370	1049712		ug/L	Z
Aliph	nC30	41.2480	2285676		ug/L	Z
Aliph	nC31	42.3270	3303535		ug/L	Z
Aliph	nC32	43.4130	3018836		ug/L	Z
Aliph	nC33	44.6430	2651491		ug/L	Z
Aliph	nC34	46.0860	1744291		ug/L	Z
Aliph	nC35	47.8060	1619116		ug/L	Z
Aliph	nC36	49.8090	1183820		ug/L	Z
Aliph	nC37	52.2960	511069		ug/L	Z
Aliph	nC38	55.2370	340136		ug/L	Z
Aliph	nC39	58.8850			ug/L	U
Aliph	Norpristane	21.9070			ug/L	U
Aliph	Phytane	24.8210			ug/L	U
Aliph	Pristane	22.9640			ug/L	U

Results for: GCMS with Full Scan**Results for: GCMS with Full Scan****Unique ID:** W13/007502 DISS GCMS-Scan/02**Instrument / Type:** GCMS with Full Scan Run: 2**for Analysis:** Whole Oils**Preparation:** Dissolved in solvent**Analysis Date:** 18/11/2016**Method ID/s:****Linked Image:** [LinkedFiles\GAB_BCH1\GCMS\W13_007502_int_WholeOil.jpg](#)**Sample Volume:****Volume Units:****Extract Volume:****Dilution Factor:****Comment:** Interior

Results for: GCMS with Full Scan



Data Sheet:

(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Respse:	Value:	units:	Qualifier:
Aliph	Botryococcane	39.4780			ug/L	U
Aliph	nC10	7.5100			ug/L	U
Aliph	nC11	9.9450			ug/L	U
Aliph	nC12	12.3690			ug/L	U
Aliph	nC13	14.7030			ug/L	U
Aliph	nC14	16.9230			ug/L	U
Aliph	nC15	19.0270			ug/L	U
Aliph	nC16	21.0200			ug/L	U
Aliph	nC17	22.9150			ug/L	U
Aliph	nC18	24.7150			ug/L	U
Aliph	nC19	26.4300			ug/L	U
Aliph	nC20	28.0680			ug/L	U
Aliph	nC21	29.6330			ug/L	U
Aliph	nC22	31.1340			ug/L	U
Aliph	nC23	32.5720			ug/L	U
Aliph	nC24	33.9520			ug/L	U
Aliph	nC25	35.2810			ug/L	U
Aliph	nC26	36.5600			ug/L	U
Aliph	nC27	37.7930			ug/L	U
Aliph	nC28	38.9870	1917183		ug/L	Z
Aliph	nC29	40.1370	8015195		ug/L	Z
Aliph	nC30	41.2480	13636167		ug/L	Z
Aliph	nC31	42.3270	16174718		ug/L	Z
Aliph	nC32	43.4130	12770408		ug/L	Z
Aliph	nC33	44.6430	8972095		ug/L	Z
Aliph	nC34	46.0860	5660312		ug/L	Z
Aliph	nC35	47.8060	4240515		ug/L	Z
Aliph	nC36	49.8090	1611970		ug/L	Z
Aliph	nC37	52.2960	2319490		ug/L	Z
Aliph	nC38	55.2370	2025036		ug/L	Z
Aliph	nC39	58.8850	16808		ug/L	Z
Aliph	Norpristane	21.9070			ug/L	U
Aliph	Phytane	24.8210			ug/L	U
Aliph	Pristane	22.9640			ug/L	U

Results for: GCMS with Full Scan

Qualifier codes:

A	TIC is a possible aldol-condensation product
B	Analyte was also detected in the blank
D	Compound quantitated on a diluted sample
E	Inorganics: Estimated due to interference Organics: Concentration exceeds the calibration range of the instrument
J	Estimated - Result is \geq the Method Detection Limit (MDL) and $<$ the Limit of Quantitation (LOQ)
M	Duplicate injection precision not met
N	Spike sample not within control limits
O	Presumptive evidence of a compound
P	Concentration difference between primary and confirmation columns $> 25\%$
R	Spike/Surrogate failed recovery limits
S	Method of standard additions (MSA) used for calculation
T	Detected but Quantitated amount exceeded maximum
U	Compound Not Detected
V	overloaded and possibly not a water extract
X	Duplicate analysis not within control limits
Y	Detected
Z	Detected but not Quantified (too small)

Sample ID : **W13/007503**

Beach E1: Waitpinga Beach Visit: 1

Comments:

Location: Shore Upper

Local Date Time: 22/11/2014 10:52:14 AM

Type: Waxy Bitumen

Family: Type III waxy bitumen (no botryococcane, low

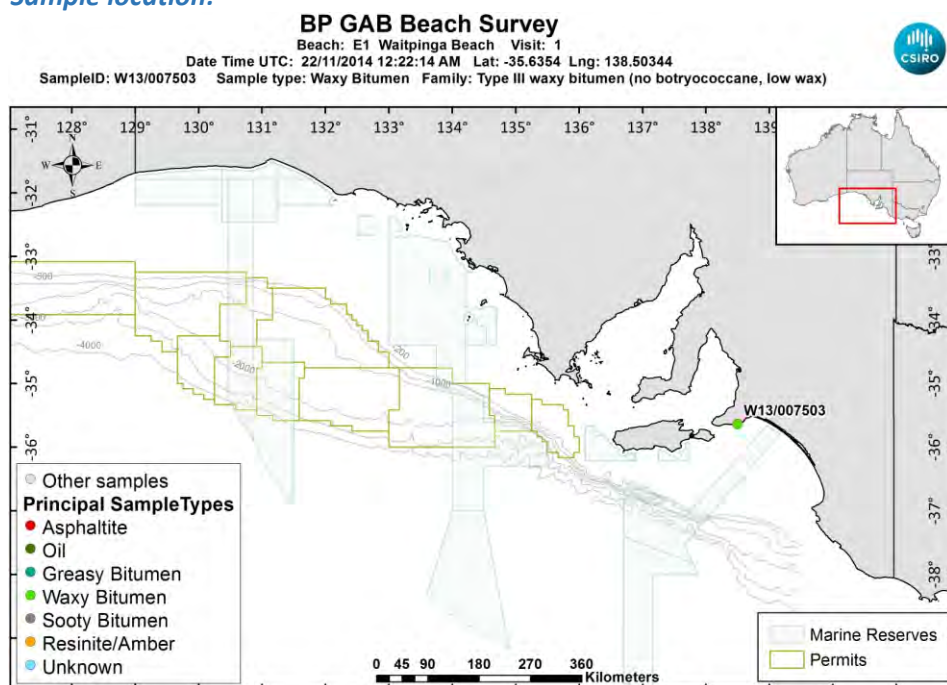
Size (cm): 3

Latitude (Y): -35.635402

Weight (gm): 6.7216

Longitude (X): 138.503444

Sample location:



[LinkedFiles\GAB_BCH1\SampleLocations\W13_007503_Location.jpg](#)

Sample - field image:



[LinkedFiles\GAB_BCH1\Samples\W13_007503_146A0507.JPG](#)

Sample - laboratory image:



[LinkedFiles\GAB_BCH1\Samples\W13_007503_Photo01.JPG](#)

Analyses Requested

Split:	Analysis:	Sent:
1	Bitumen Determination	YES
2	Whole Oils	YES
3	Elemental CHNS	YES
4	Biomarkers	YES

Analyses Completed:

Analysis:	Instrument/Type:
Biomarkers	Gas Chromatography Mass Spectrometry Run: 2
Biomarkers	Gas Chromatography Mass Spectrometry Run: 1
Elemental CHNS	Elemental Analyser Run: 1
Whole Oils	GCMS with Full Scan Run: 2
Whole Oils	GCMS with Full Scan Run: 1

Sample Analyses Completed:

Results for: Gas Chromatography Mass Spectrometry

Unique ID: W13/007503 DISS GC-MS/01

Instrument / Type: Gas Chromatography Mass Spectrometry Run: 1

for Analysis: Biomarkers

Analysis Date: 18/07/2017

Linked Image: [None available](#)

Preparation: Dissolved in solvent

Method ID/s:

Sample Volume:

Volume Units:

Extract Volume:

Dilution Factor:

Comment: External Ratios only

Results for: Gas Chromatography Mass Spectrometry

Data Sheet:

(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Respse:	Value:	units:	Qualifier:
BiomRatio	% C27 aaa 20R			36.5627104838583	ratio	Y
BiomRatio	% C27 abb 20(R+S)			34.8673450187439	ratio	Y
BiomRatio	% C28 aaa 20R			30.7435660468978	ratio	Y
BiomRatio	% C28 abb 20(R+S)			32.6177104893688	ratio	Y
BiomRatio	% C29 aaa 20R			32.6937234692439	ratio	Y
BiomRatio	% C29 abb 20(R+S)			32.5149444918873	ratio	Y
BiomRatio	(C21+C22)/(C27+C28+C29)			0.46445000180014	ratio	Y
BiomRatio	25-Nor/C30H			9.94896962911856E-02	ratio	Y
BiomRatio	C19t/C23t			0.287923378319547	ratio	Y
BiomRatio	C22t/C21t			0.137341974715955	ratio	Y
BiomRatio	C22t/C24t			9.52499861272959E-02	ratio	Y
BiomRatio	C23t/C30H			0.373777939778955	ratio	Y
BiomRatio	C24t/C23t			0.627636047017849	ratio	Y
BiomRatio	C24Tet/C23t			0.165485415759687	ratio	Y
BiomRatio	C24Tet/C26t			0.365542177943609	ratio	Y
BiomRatio	C24Tet/C30H			6.18547977661195E-02	ratio	Y
BiomRatio	C26t/C25t			1.25997188969127	ratio	Y
BiomRatio	C27 Dia/(Dia+Reg)			0.685237471897251	ratio	Y
BiomRatio	C27 Dia/Ster			0.880574925245235	ratio	Y
BiomRatio	C28BNH/C30H			9.85524037647916E-02	ratio	Y
BiomRatio	C29/C27 abb Sterane Ratio			0.932532846260819	ratio	Y
BiomRatio	C29H/C30H			0.64379629509093	ratio	Y
BiomRatio	C29Ts/(C29Ts+C29H)			0.238223967960567	ratio	Y
BiomRatio	C30DiaH/C30H			0.180174961271594	ratio	Y
BiomRatio	C30Ts/C30H			2.67453818816147E-02	ratio	Y
BiomRatio	C35 Homohopane Index			0.199839713621671	ratio	Y
BiomRatio	C35HS/C34HS			1.15442218174459	ratio	Y
BiomRatio	Gam/C30H			6.04358410247732E-02	ratio	Y
BiomRatio	Gam/C31HR			0.259604093272941	ratio	Y
BiomRatio	Ole/C30H			0.05101735292969	ratio	Y
BiomRatio	Sterane/hopane			1.05547522895178	ratio	Y
BiomRatio	Steranes/Terpanes			0.779964768645581	ratio	Y
BiomRatio	Tricyclic/Pentacyclic Terpanes			0.353234493892105	ratio	Y

Results for: Gas Chromatography Mass Spectrometry

Unique ID: W13/007503 DISS GC-MS/02

Instrument / Type: Gas Chromatography Mass Spectrometry Run: 2

for Analysis: Biomarkers

Preparation: Dissolved in solvent

Analysis Date: 18/07/2017

Method ID/s:

Linked Image: [None available](#)

Sample Volume:

Volume Units:

Extract Volume:

Dilution Factor:

Comment: Internal Ratios only

Results for: Gas Chromatography Mass Spectrometry

Data Sheet:

(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Rspnse:	Value:	units:	Qualifier:
BiomRatio	% C27 aaa 20R			35.1023763344383	ratio	Y
BiomRatio	% C27 abb 20(R+S)			34.7885167978086	ratio	Y
BiomRatio	% C28 aaa 20R			31.8776964115899	ratio	Y
BiomRatio	% C28 abb 20(R+S)			33.1922550151731	ratio	Y
BiomRatio	% C29 aaa 20R			33.0199272539718	ratio	Y
BiomRatio	% C29 abb 20(R+S)			32.0192281870183	ratio	Y
BiomRatio	(C21+C22)/(C27+C28+C29)			0.391982454506895	ratio	Y
BiomRatio	25-Nor/C30H			0.158211121573605	ratio	Y
BiomRatio	C19t/C23t			0.169123907685413	ratio	Y
BiomRatio	C22t/C21t			0.20640760761894	ratio	Y
BiomRatio	C22t/C24t			0.177171523315559	ratio	Y
BiomRatio	C23t/C30H			0.348271000567056	ratio	Y
BiomRatio	C24t/C23t			0.614885353648517	ratio	Y
BiomRatio	C24Tet/C23t			0.206057211143476	ratio	Y
BiomRatio	C24Tet/C26t			0.369029306724094	ratio	Y
BiomRatio	C24Tet/C30H			7.17637510989954E-02	ratio	Y
BiomRatio	C26t/C25t			1.50736939734258	ratio	Y
BiomRatio	C27 Dia/(Dia+Reg)			0.693659237958303	ratio	Y
BiomRatio	C27 Dia/Ster			0.895544552617543	ratio	Y
BiomRatio	C28BNH/C30H			0.059660494951124	ratio	Y
BiomRatio	C29/C27 abb Sterane Ratio			0.920396473730528	ratio	Y
BiomRatio	C29H/C30H			0.635128315844783	ratio	Y
BiomRatio	C29Ts/(C29Ts+C29H)			0.197284502597146	ratio	Y
BiomRatio	C30DiaH/C30H			0.159144942540097	ratio	Y
BiomRatio	C30Ts/C30H			0	ratio	U
BiomRatio	C35 Homohopane Index			7.33955299062985E-02	ratio	Y
BiomRatio	C35HS/C34HS			0.779346210995542	ratio	Y
BiomRatio	Gam/C30H			1.20252209696131E-02	ratio	Y
BiomRatio	Gam/C31HR			5.13159209226432E-02	ratio	Y
BiomRatio	Ole/C30H			0.217343578485181	ratio	Y
BiomRatio	Sterane/hopane			1.24548785340733	ratio	Y
BiomRatio	Steranes/Terpanes			0.895272228733915	ratio	Y
BiomRatio	Tricyclic/Pentacyclic Terpanes			0.391183389178383	ratio	Y

Results for: Elemental Analyser

Unique ID: W13/007503 UNK ELEM-AN/01

Instrument / Type: Elemental Analyser Run: 1

for Analysis: Elemental CHNS

Preparation: Unknown

Analysis Date:

Method ID/s:

Linked Image: [None available](#)

Sample Volume:

Volume Units:

Extract Volume:

Dilution Factor:

Comment:

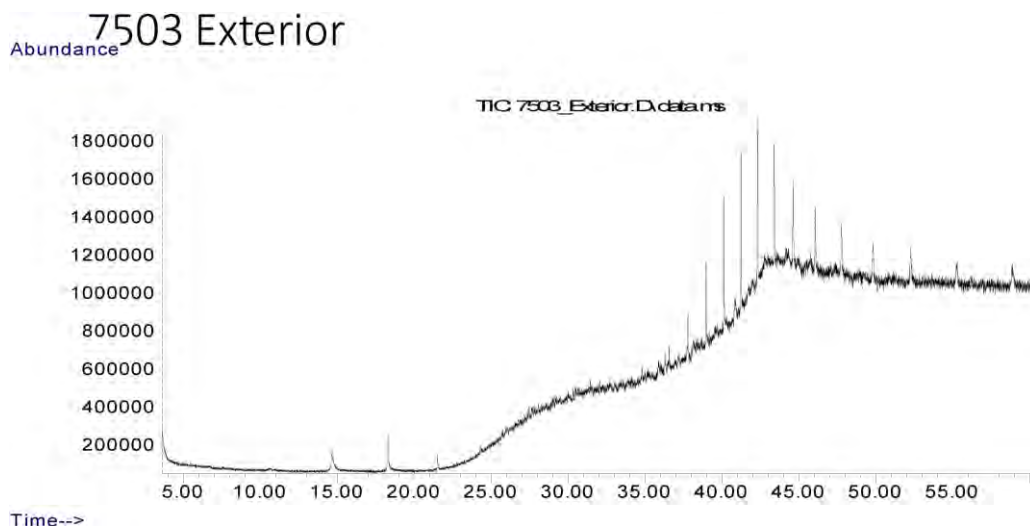
Results for: Elemental Analyser**Data Sheet:**

(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Respnse:	Value:	units:	Qualifier:
Inorg	Carbon			85.67	percent	Y
Inorg	delta13 Carbon			-29.12	per mille	Y
Inorg	delta34 Sulphur			-5.36	per mille	Y
Inorg	Hydrogen			8.86	percent	Y
Inorg	Nitrogen			0.09	percent	Y
Inorg	Sulphur			1.06	percent	Y

Results for: GCMS with Full Scan**Unique ID:** W13/007503_DISS_GCMS-Scan/01**Instrument / Type:** GCMS with Full Scan Run: 1**for Analysis:** Whole Oils**Preparation:** Dissolved in solvent**Analysis Date:** 18/11/2016**Method ID/s:****Linked Image:** [LinkedFiles\GAB_BCH1\GCMS\W13_007503_ext_WholeOil.jpg](#)**Sample Volume:****Volume Units:****Extract Volume:****Dilution Factor:****Comment:** Exterior

Results for: GCMS with Full Scan



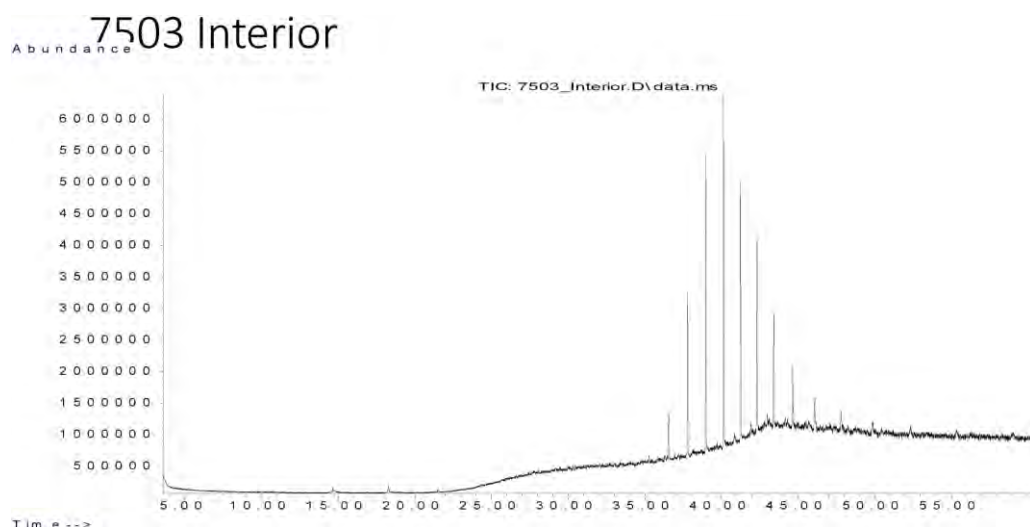
Data Sheet:

(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Respse:	Value:	units:	Qualifier:
Aliph	Botryococcane	39.4780			ug/L	U
Aliph	nC10	7.5100			ug/L	U
Aliph	nC11	9.9450			ug/L	U
Aliph	nC12	12.3690			ug/L	U
Aliph	nC13	14.7030			ug/L	U
Aliph	nC14	16.9230			ug/L	U
Aliph	nC15	19.0270			ug/L	U
Aliph	nC16	21.0200			ug/L	U
Aliph	nC17	22.9150			ug/L	U
Aliph	nC18	24.7150			ug/L	U
Aliph	nC19	26.4300			ug/L	U
Aliph	nC20	28.0680			ug/L	U
Aliph	nC21	29.6330			ug/L	U
Aliph	nC22	31.1340			ug/L	U
Aliph	nC23	32.5720			ug/L	U
Aliph	nC24	33.9520			ug/L	U
Aliph	nC25	35.2810			ug/L	U
Aliph	nC26	36.5600			ug/L	U
Aliph	nC27	37.7930	1081966		ug/L	Z
Aliph	nC28	38.9870	2188671		ug/L	Z
Aliph	nC29	40.1370	3464026		ug/L	Z
Aliph	nC30	41.2480	3931631		ug/L	Z
Aliph	nC31	42.3270	4191327		ug/L	Z
Aliph	nC32	43.4130	3444510		ug/L	Z
Aliph	nC33	44.6430	2768023		ug/L	Z
Aliph	nC34	46.0860	2403573		ug/L	Z
Aliph	nC35	47.8060	2013809		ug/L	Z
Aliph	nC36	49.8090	821900		ug/L	Z
Aliph	nC37	52.2960	1826748		ug/L	Z
Aliph	nC38	55.2370	1307576		ug/L	Z
Aliph	nC39	58.8850	50562		ug/L	Z
Aliph	Norpristane	21.9070			ug/L	U
Aliph	Phytane	24.8210			ug/L	U
Aliph	Pristane	22.9640			ug/L	U

Results for: GCMS with Full Scan**Results for: GCMS with Full Scan****Unique ID:** W13/007503 DISS GCMS-Scan/02**Instrument / Type:** GCMS with Full Scan Run: 2**for Analysis:** Whole Oils**Preparation:** Dissolved in solvent**Analysis Date:** 18/11/2016**Method ID/s:****Linked Image:** [LinkedFiles\GAB_BCH1\GCMS\W13_007503_int_WholeOil.jpg](#)**Sample Volume:****Volume Units:****Extract Volume:****Dilution Factor:****Comment:** Interior

Results for: GCMS with Full Scan



Data Sheet:

(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Respse:	Value:	units:	Qualifier:
Aliph	Botryococcane	39.4780			ug/L	U
Aliph	nC10	7.5100			ug/L	U
Aliph	nC11	9.9450			ug/L	U
Aliph	nC12	12.3690			ug/L	U
Aliph	nC13	14.7030			ug/L	U
Aliph	nC14	16.9230			ug/L	U
Aliph	nC15	19.0270			ug/L	U
Aliph	nC16	21.0200			ug/L	U
Aliph	nC17	22.9150			ug/L	U
Aliph	nC18	24.7150			ug/L	U
Aliph	nC19	26.4300			ug/L	U
Aliph	nC20	28.0680			ug/L	U
Aliph	nC21	29.6330			ug/L	U
Aliph	nC22	31.1340			ug/L	U
Aliph	nC23	32.5720			ug/L	U
Aliph	nC24	33.9520			ug/L	U
Aliph	nC25	35.2810			ug/L	U
Aliph	nC26	36.5600	3826391		ug/L	Z
Aliph	nC27	37.7930	14332708		ug/L	Z
Aliph	nC28	38.9870	25618263		ug/L	Z
Aliph	nC29	40.1370	29839982		ug/L	Z
Aliph	nC30	41.2480	22468886		ug/L	Z
Aliph	nC31	42.3270	17243219		ug/L	Z
Aliph	nC32	43.4130	10755991		ug/L	Z
Aliph	nC33	44.6430	7127122		ug/L	Z
Aliph	nC34	46.0860	4119233		ug/L	Z
Aliph	nC35	47.8060	1461089		ug/L	Z
Aliph	nC36	49.8090	2137849		ug/L	Z
Aliph	nC37	52.2960	759692		ug/L	Z
Aliph	nC38	55.2370	102089		ug/L	Z
Aliph	nC39	58.8850			ug/L	U
Aliph	Norpristane	21.9070			ug/L	U
Aliph	Phytane	24.8210			ug/L	U
Aliph	Pristane	22.9640			ug/L	U

Results for: GCMS with Full Scan**Qualifier codes:**

A	TIC is a possible aldol-condensation product
B	Analyte was also detected in the blank
D	Compound quantitated on a diluted sample
E	Inorganics: Estimated due to interference Organics: Concentration exceeds the calibration range of the instrument
J	Estimated - Result is \geq the Method Detection Limit (MDL) and $<$ the Limit of Quantitation (LOQ)
M	Duplicate injection precision not met
N	Spike sample not within control limits
O	Presumptive evidence of a compound
P	Concentration difference between primary and confirmation columns $> 25\%$
R	Spike/Surrogate failed recovery limits
S	Method of standard additions (MSA) used for calculation
T	Detected but Quantitated amount exceeded maximum
U	Compound Not Detected
V	overloaded and possibly not a water extract
X	Duplicate analysis not within control limits
Y	Detected
Z	Detected but not Quantified (too small)

Sample ID : **W13/007504A**

Beach E1: Waitpinga Beach Visit: 1

Comments:

2 PIECES, photo shows only large piece. Part A.

Location: Shore Upper

Local Date Time: 22/11/2014 11:11:04 AM

Type: Waxy Bitumen

Family: Type IV waxy bitumen (no botryococcane, hig

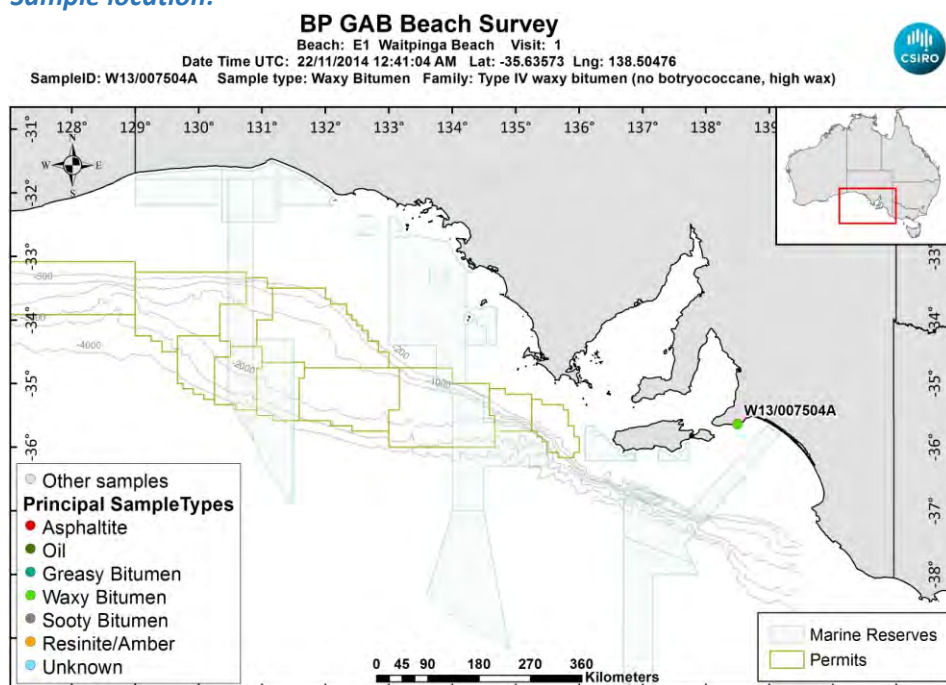
Size (cm): 4

Latitude (Y): -35.635726

Weight (gm): 10.68149

Longitude (X): 138.504762

Sample location:



[LinkedFiles\GAB_BCH1\SampleLocations\W13_007504A_Location.jpg](#)

Sample - field image:



[LinkedFiles\GAB_BCH1\Samples\W13_007504_146A0514.JPG](#)

Sample - laboratory image:



[LinkedFiles\GAB_BCH1\Samples\W13_007504_Photo01.JPG](#)

Analyses Requested

Split:	Analysis:	Sent:
1	Bitumen Determination	YES
2	Whole Oils	YES
3	Elemental CHNS	YES

Analyses Completed:

Analysis:	Instrument/Type:
Elemental CHNS	Elemental Analyser Run: 1
Whole Oils	GCMS with Full Scan Run: 2

Sample Analyses Completed:

Results for: Elemental Analyser

Unique ID: W13/007504A UNK_ELEM-AN/01

Instrument / Type: Elemental Analyser Run: 1

for Analysis: Elemental CHNS

Preparation: Unknown

Analysis Date:

Method ID/s:

Linked Image: [None available](#)

Sample Volume:

Volume Units:

Extract Volume:

Dilution Factor:

Comment: This is a HUGE outlier. What's going on here? This is a HUGE outlier. What's going on here?

Data Sheet:

(default units ppb)

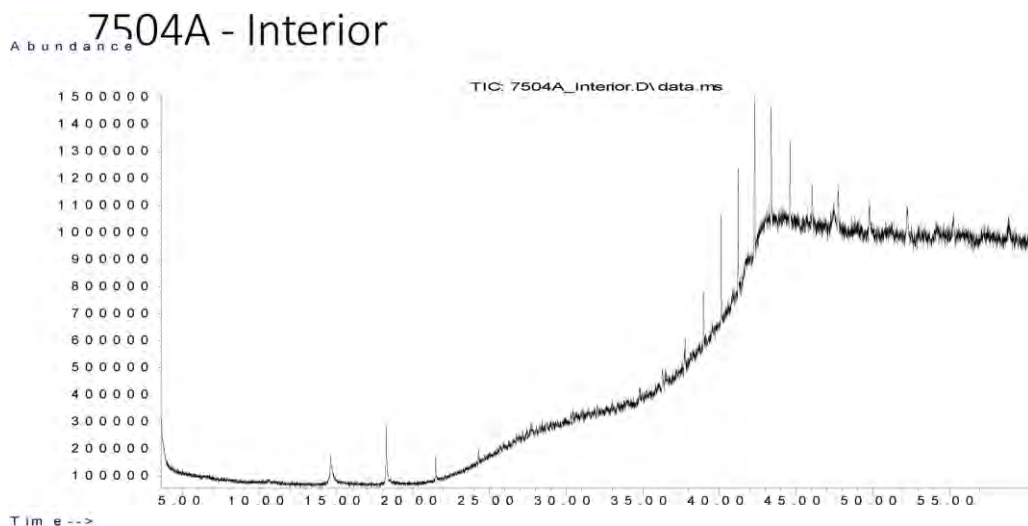
Type:	Compound / Variable:	Retentn Time:	Target Respse:	Value:	units:	Qualifier:
Inorg	Carbon			81.27	percent	Y
Inorg	delta13 Carbon			-29.344195556	per mille	Y
Inorg	delta34 Sulphur			7.22592555455488	per mille	Y
Inorg	Hydrogen			6.63	percent	Y
Inorg	Nitrogen			0.18	percent	Y
Inorg	Sulphur			0.79	percent	Y

Results for: GCMS with Full Scan

Unique ID: W13/007504A DISS_GCMS-Scan/02

Results for: GCMS with Full Scan**Instrument / Type:** GCMS with Full Scan Run: 2**for Analysis:** Whole Oils**Preparation:** Dissolved in solvent**Analysis Date:** 18/11/2016**Method ID/s:****Linked Image:** [LinkedFiles\GAB BCH1\GCMS\W13_007504A_int_WholeOil.jpg](#)**Sample Volume:****Volume Units:****Extract Volume:****Dilution Factor:****Comment:** Interior

Results for: GCMS with Full Scan



Data Sheet:

(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Respse:	Value:	units:	Qualifier:
Aliph	Botryococcane	39.4780			ug/L	U
Aliph	nC10	7.5100			ug/L	U
Aliph	nC11	9.9450			ug/L	U
Aliph	nC12	12.3690			ug/L	U
Aliph	nC13	14.7030			ug/L	U
Aliph	nC14	16.9230			ug/L	U
Aliph	nC15	19.0270			ug/L	U
Aliph	nC16	21.0200			ug/L	U
Aliph	nC17	22.9150			ug/L	U
Aliph	nC18	24.7150			ug/L	U
Aliph	nC19	26.4300			ug/L	U
Aliph	nC20	28.0680			ug/L	U
Aliph	nC21	29.6330			ug/L	U
Aliph	nC22	31.1340			ug/L	U
Aliph	nC23	32.5720			ug/L	U
Aliph	nC24	33.9520			ug/L	U
Aliph	nC25	35.2810			ug/L	U
Aliph	nC26	36.5600			ug/L	U
Aliph	nC27	37.7930	451952		ug/L	Z
Aliph	nC28	38.9870	972159		ug/L	Z
Aliph	nC29	40.1370	1952316		ug/L	Z
Aliph	nC30	41.2480	2291693		ug/L	Z
Aliph	nC31	42.3270	2778342		ug/L	Z
Aliph	nC32	43.4130	2260504		ug/L	Z
Aliph	nC33	44.6430	1715308		ug/L	Z
Aliph	nC34	46.0860	1201680		ug/L	Z
Aliph	nC35	47.8060	996732		ug/L	Z
Aliph	nC36	49.8090	1287933		ug/L	Z
Aliph	nC37	52.2960	1200263		ug/L	Z
Aliph	nC38	55.2370	890637		ug/L	Z
Aliph	nC39	58.8850	247524		ug/L	Z
Aliph	Norpristane	21.9070			ug/L	U
Aliph	Phytane	24.8210			ug/L	U
Aliph	Pristane	22.9640			ug/L	U

Results for: GCMS with Full Scan**Qualifier codes:**

A	TIC is a possible aldol-condensation product
B	Analyte was also detected in the blank
D	Compound quantitated on a diluted sample
E	Inorganics: Estimated due to interference Organics: Concentration exceeds the calibration range of the instrument
J	Estimated - Result is \geq the Method Detection Limit (MDL) and $<$ the Limit of Quantitation (LOQ)
M	Duplicate injection precision not met
N	Spike sample not within control limits
O	Presumptive evidence of a compound
P	Concentration difference between primary and confirmation columns $> 25\%$
R	Spike/Surrogate failed recovery limits
S	Method of standard additions (MSA) used for calculation
T	Detected but Quantitated amount exceeded maximum
U	Compound Not Detected
V	overloaded and possibly not a water extract
X	Duplicate analysis not within control limits
Y	Detected
Z	Detected but not Quantified (too small)

Sample ID : **W13/007504B**

Beach E1: Waitpinga Beach Visit: 1

Comments:

Part B subsample

Location: Shore Upper

Local Date Time: 22/11/2014 11:11:04 AM

Type: Waxy Bitumen

Family: Type I waxy bitumen (high botryococcane)

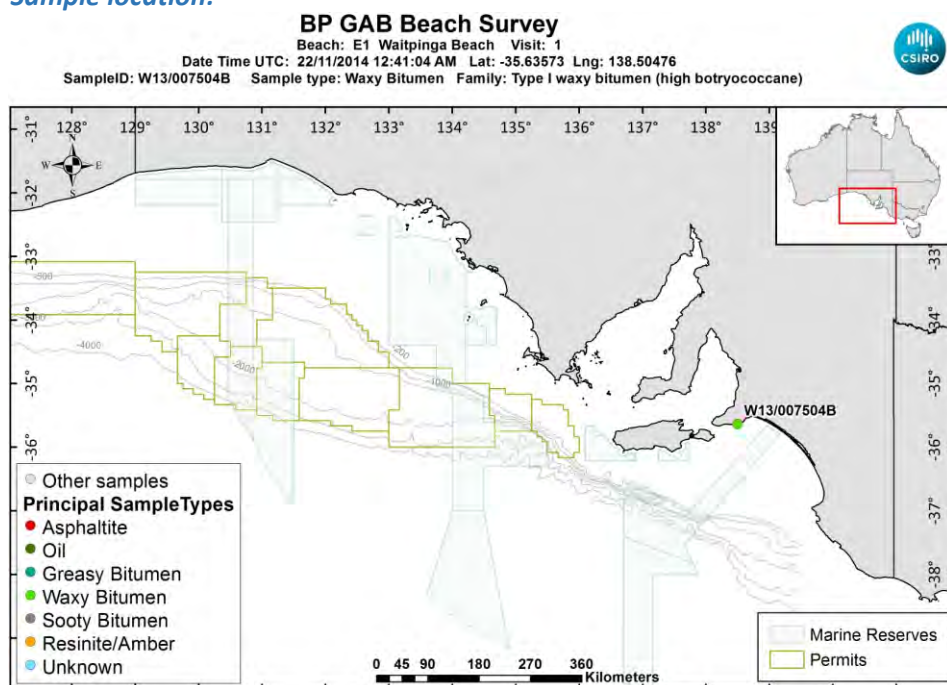
Size (cm):

Latitude (Y): -35.635726

Weight (gm):

Longitude (X): 138.504762

Sample location:



[LinkedFiles\GAB_BCH1\SampleLocations\W13_007504B_Location.jpg](#)

Sample - laboratory image:



[LinkedFiles\GAB_BCH1\Samples\W13_007504_Photo01.JPG](#)

Sample ID : W13/007504B**Beach E1: Waitpinga Beach Visit: 1****Analyses Requested**

Split:	Analysis:	Sent:
1	Bitumen Determination	YES
2	Whole Oils	YES
3	Elemental CHNS	YES

Analyses Completed:

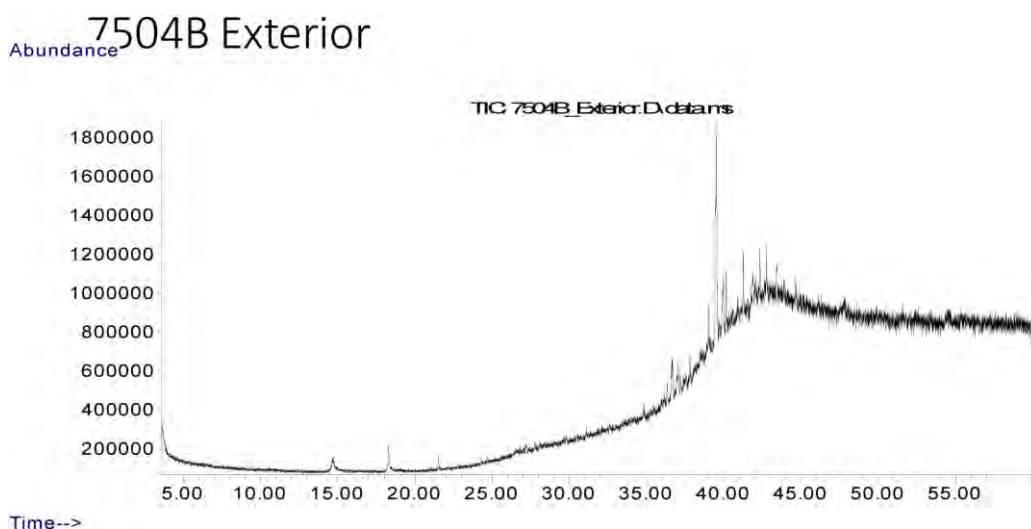
Analysis:	Instrument/Type:
Elemental CHNS	Elemental Analyser Run: 1
Whole Oils	GCMS with Full Scan Run: 2
Whole Oils	GCMS with Full Scan Run: 1

Sample Analyses Completed:**Results for: Elemental Analyser****Unique ID: W13/007504B_UNK_ELEM-AN/01****Instrument / Type:** Elemental Analyser Run: 1**for Analysis:** Elemental CHNS**Preparation:** Unknown**Analysis Date:****Method ID/s:****Linked Image:** [None available](#)**Sample Volume:****Volume Units:****Extract Volume:****Dilution Factor:****Comment:** Sulphur isotope peak was very small. May not be an accurate value. Sulphur isotope peak was very small. May not be an accurate value.**Data Sheet:***(default units ppb)*

Type:	Compound / Variable:	Retentn Time:	Target Respse:	Value:	units:	Qualifier:
Inorg	Carbon			85.74	percent	Y
Inorg	delta13 Carbon			-25.9887028953178	per mille	Y
Inorg	delta34 Sulphur			2.79891929146096	per mille	Y
Inorg	Hydrogen			8.66	percent	Y
Inorg	Nitrogen			0.25	percent	Y
Inorg	Sulphur			1.23	percent	Y

Results for: GCMS with Full Scan**Unique ID: W13/007504B DISS GCMS-Scan/01****Instrument / Type:** GCMS with Full Scan Run: 1**for Analysis:** Whole Oils**Preparation:** Dissolved in solvent**Analysis Date:** 18/11/2016**Method ID/s:****Linked Image:** [LinkedFiles\GAB BCH1\GCMS\W13 007504B_ext WholeOil.jpg](#)**Sample Volume:****Volume Units:****Extract Volume:****Dilution Factor:****Comment:** Exterior

Results for: GCMS with Full Scan



Data Sheet:

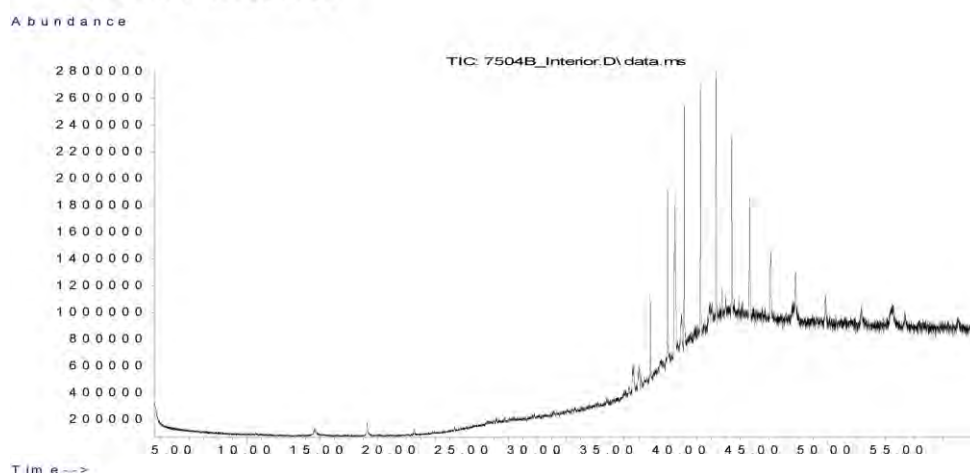
(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Respse:	Value:	units:	Qualifier:
Aliph	Botryococcane	39.4780	3079431		ug/L	Z
Aliph	nC10	7.5100			ug/L	U
Aliph	nC11	9.9450			ug/L	U
Aliph	nC12	12.3690			ug/L	U
Aliph	nC13	14.7030			ug/L	U
Aliph	nC14	16.9230			ug/L	U
Aliph	nC15	19.0270			ug/L	U
Aliph	nC16	21.0200			ug/L	U
Aliph	nC17	22.9150			ug/L	U
Aliph	nC18	24.7150			ug/L	U
Aliph	nC19	26.4300			ug/L	U
Aliph	nC20	28.0680			ug/L	U
Aliph	nC21	29.6330			ug/L	U
Aliph	nC22	31.1340			ug/L	U
Aliph	nC23	32.5720			ug/L	U
Aliph	nC24	33.9520			ug/L	U
Aliph	nC25	35.2810			ug/L	U
Aliph	nC26	36.5600			ug/L	U
Aliph	nC27	37.7930			ug/L	U
Aliph	nC28	38.9870	1052369		ug/L	Z
Aliph	nC29	40.1370	1395936		ug/L	Z
Aliph	nC30	41.2480	1546399		ug/L	Z
Aliph	nC31	42.3270	1314456		ug/L	Z
Aliph	nC32	43.4130	966577		ug/L	Z
Aliph	nC33	44.6430	2790976		ug/L	Z
Aliph	nC34	46.0860			ug/L	U
Aliph	nC35	47.8060			ug/L	U
Aliph	nC36	49.8090			ug/L	U
Aliph	nC37	52.2960			ug/L	U
Aliph	nC38	55.2370			ug/L	U
Aliph	nC39	58.8850			ug/L	U
Aliph	Norpristane	21.9070			ug/L	U
Aliph	Phytane	24.8210			ug/L	U
Aliph	Pristane	22.9640			ug/L	U

Results for: GCMS with Full Scan**Results for: GCMS with Full Scan****Unique ID:** W13/007504B DISS GCMS-Scan/02**Instrument / Type:** GCMS with Full Scan Run: 2**for Analysis:** Whole Oils**Preparation:** Dissolved in solvent**Analysis Date:** 18/11/2016**Method ID/s:****Linked Image:** [LinkedFiles\GAB_BCH1\GCMS\W13_007504B_int_WholeOil.jpg](#)**Sample Volume:****Volume Units:****Extract Volume:****Dilution Factor:****Comment:** Interior

Results for: GCMS with Full Scan

7504B Interior



Data Sheet:

(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Respse:	Value:	units:	Qualifier:
Aliph	Botryococcane	39.4780	11537630		ug/L	Z
Aliph	nC10	7.5100			ug/L	U
Aliph	nC11	9.9450			ug/L	U
Aliph	nC12	12.3690			ug/L	U
Aliph	nC13	14.7030			ug/L	U
Aliph	nC14	16.9230			ug/L	U
Aliph	nC15	19.0270			ug/L	U
Aliph	nC16	21.0200			ug/L	U
Aliph	nC17	22.9150			ug/L	U
Aliph	nC18	24.7150			ug/L	U
Aliph	nC19	26.4300			ug/L	U
Aliph	nC20	28.0680			ug/L	U
Aliph	nC21	29.6330			ug/L	U
Aliph	nC22	31.1340			ug/L	U
Aliph	nC23	32.5720			ug/L	U
Aliph	nC24	33.9520			ug/L	U
Aliph	nC25	35.2810			ug/L	U
Aliph	nC26	36.5600			ug/L	U
Aliph	nC27	37.7930	3353723		ug/L	Z
Aliph	nC28	38.9870	7019589		ug/L	Z
Aliph	nC29	40.1370	10129352		ug/L	Z
Aliph	nC30	41.2480	10748128		ug/L	Z
Aliph	nC31	42.3270	10269319		ug/L	Z
Aliph	nC32	43.4130	8137496		ug/L	Z
Aliph	nC33	44.6430	6183574		ug/L	Z
Aliph	nC34	46.0860	4397672		ug/L	Z
Aliph	nC35	47.8060	3052945		ug/L	Z
Aliph	nC36	49.8090	3050078		ug/L	Z
Aliph	nC37	52.2960	2290287		ug/L	Z
Aliph	nC38	55.2370			ug/L	U
Aliph	nC39	58.8850			ug/L	U
Aliph	Norpristane	21.9070			ug/L	U
Aliph	Phytane	24.8210			ug/L	U
Aliph	Pristane	22.9640			ug/L	U

Results for: GCMS with Full Scan**Qualifier codes:**

A	TIC is a possible aldol-condensation product
B	Analyte was also detected in the blank
D	Compound quantitated on a diluted sample
E	Inorganics: Estimated due to interference Organics: Concentration exceeds the calibration range of the instrument
J	Estimated - Result is \geq the Method Detection Limit (MDL) and $<$ the Limit of Quantitation (LOQ)
M	Duplicate injection precision not met
N	Spike sample not within control limits
O	Presumptive evidence of a compound
P	Concentration difference between primary and confirmation columns $> 25\%$
R	Spike/Surrogate failed recovery limits
S	Method of standard additions (MSA) used for calculation
T	Detected but Quantitated amount exceeded maximum
U	Compound Not Detected
V	overloaded and possibly not a water extract
X	Duplicate analysis not within control limits
Y	Detected
Z	Detected but not Quantified (too small)

Sample ID : **W13/007505**

Beach E1: Waitpinga Beach Visit: 1

Comments:

Location: Shore Upper

Local Date Time: 22/11/2014 11:20:18 AM

Type: Waxy Bitumen

Family: Type IV waxy bitumen (no botryococcane, hig

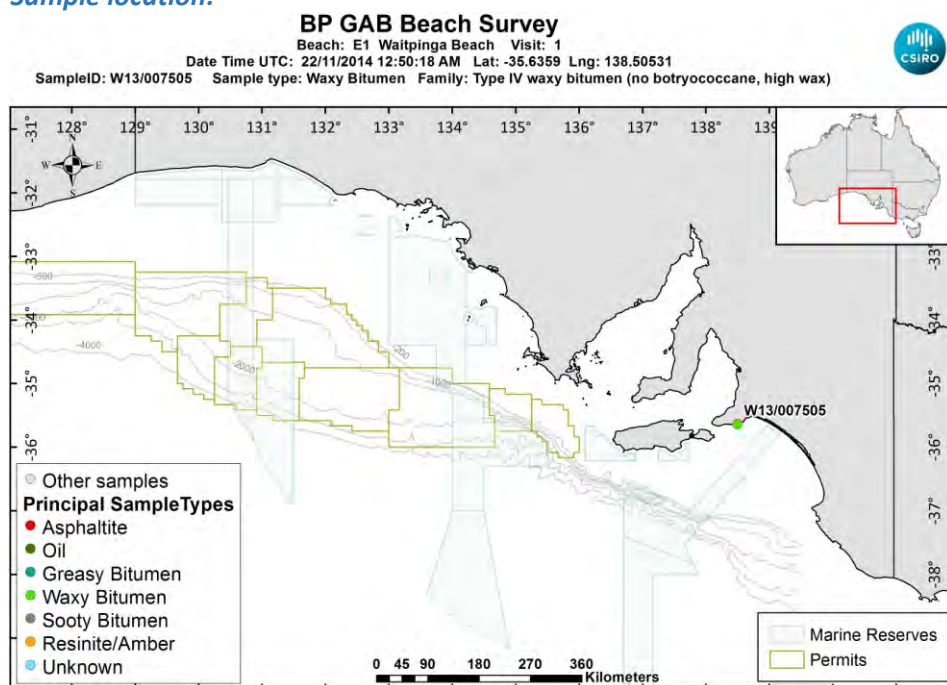
Size (cm): 3

Latitude (Y): -35.635903

Weight (gm): 5.62759

Longitude (X): 138.505309

Sample location:



[LinkedFiles\GAB_BCH1\SampleLocations\W13_007505_Location.jpg](#)

Sample - field image:



[LinkedFiles\GAB_BCH1\Samples\W13_007505_146A0517.JPG](#)

Sample - laboratory image:



LinkedFiles\GAB_BCH1\Samples\W13_007505_Photo01.JPG

Analyses Requested

Split:	Analysis:	Sent:
1	Bitumen Determination	YES
2	Whole Oils	YES
3	Elemental CHNS	YES

Analyses Completed:

Analysis:	Instrument/Type:
Elemental CHNS	Elemental Analyser Run: 1
Whole Oils	GCMS with Full Scan Run: 2
Whole Oils	GCMS with Full Scan Run: 1

Sample Analyses Completed:

Results for: Elemental Analyser

Unique ID: W13/007505_UNK_ELEM-AN/01

Instrument / Type: Elemental Analyser Run: 1

for Analysis: Elemental CHNS

Preparation: Unknown

Analysis Date:

Method ID/s:

Linked Image: [None available](#)

Sample Volume:

Volume Units:

Extract Volume:

Dilution Factor:

Comment: Sulphur isotope peak was very small. May not be an accurate value. Sulphur isotope peak was very small. May not be an accurate value.

Data Sheet:

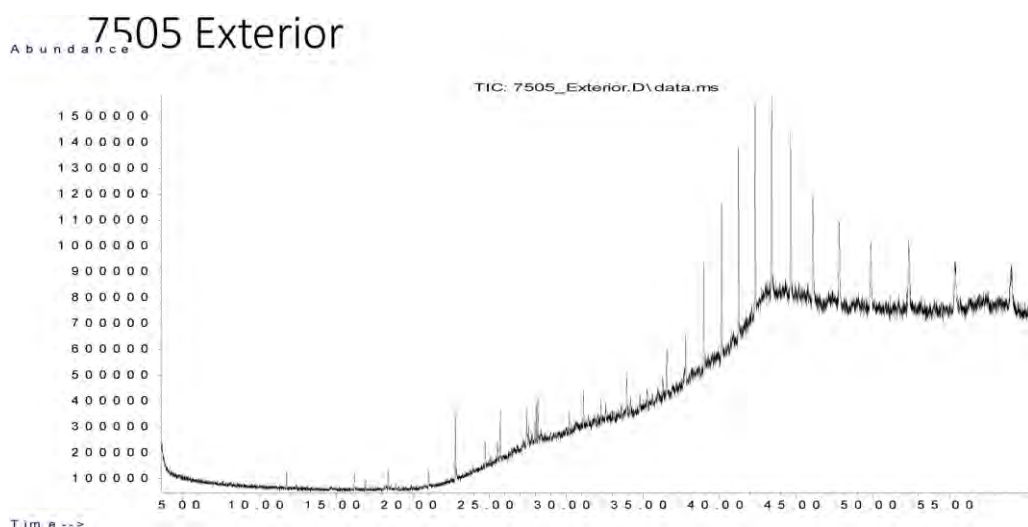
Type:	Compound / Variable:	Retentn Time:	Target Respns:	Value:	units:	Qualifier:
Inorg	Carbon			86.15	percent	Y
Inorg	delta13 Carbon			-29.4	per mille	Y
Inorg	delta34 Sulphur			-3.325	per mille	Y
Inorg	Hydrogen			8.17	percent	Y
Inorg	Nitrogen			0.13	percent	Y
Inorg	Sulphur			1.05	percent	Y

Results for: GCMS with Full Scan

Unique ID: W13/007505_DISS_GCMS-Scan/01

Results for: GCMS with Full Scan**Instrument / Type:** GCMS with Full Scan Run: 1**for Analysis:** Whole Oils**Preparation:** Dissolved in solvent**Analysis Date:** 18/11/2016**Method ID/s:****Linked Image:** [LinkedFiles\GAB_BCH1\GCMS\W13_007505_ext_WholeOil.jpg](#)**Sample Volume:****Volume Units:****Extract Volume:****Dilution Factor:****Comment:** Exterior

Results for: GCMS with Full Scan



Data Sheet:

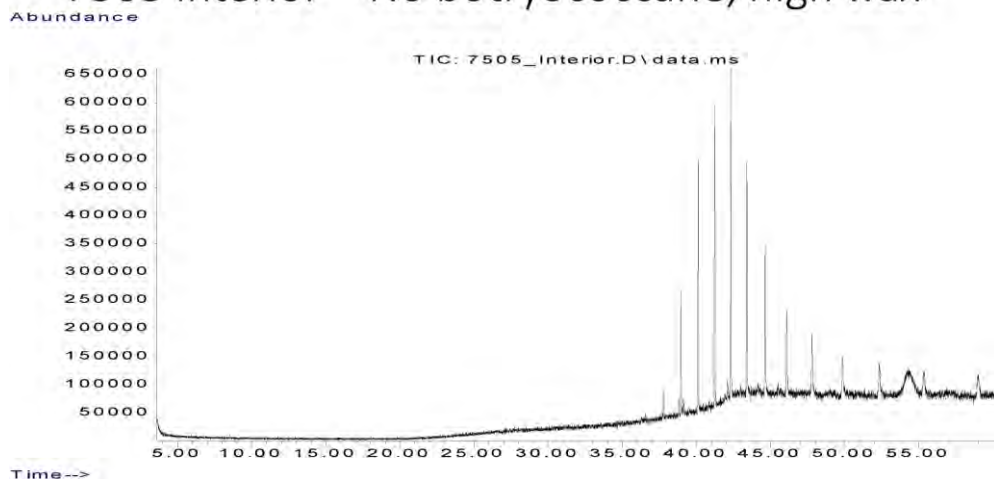
(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Respse:	Value:	units:	Qualifier:
Aliph	Botryococcane	39.4780			ug/L	U
Aliph	nC10	7.5100			ug/L	U
Aliph	nC11	9.9450			ug/L	U
Aliph	nC12	12.3690			ug/L	U
Aliph	nC13	14.7030			ug/L	U
Aliph	nC14	16.9230			ug/L	U
Aliph	nC15	19.0270			ug/L	U
Aliph	nC16	21.0200			ug/L	U
Aliph	nC17	22.9150			ug/L	U
Aliph	nC18	24.7150			ug/L	U
Aliph	nC19	26.4300			ug/L	U
Aliph	nC20	28.0680			ug/L	U
Aliph	nC21	29.6330			ug/L	U
Aliph	nC22	31.1340	630208		ug/L	Z
Aliph	nC23	32.5720			ug/L	U
Aliph	nC24	33.9520	821646		ug/L	Z
Aliph	nC25	35.2810			ug/L	U
Aliph	nC26	36.5600	958411		ug/L	Z
Aliph	nC27	37.7930	894637		ug/L	Z
Aliph	nC28	38.9870	2206932		ug/L	Z
Aliph	nC29	40.1370	2955033		ug/L	Z
Aliph	nC30	41.2480	4021722		ug/L	Z
Aliph	nC31	42.3270	4483783		ug/L	Z
Aliph	nC32	43.4130	4350710		ug/L	Z
Aliph	nC33	44.6430	4680000		ug/L	Z
Aliph	nC34	46.0860	2956587		ug/L	Z
Aliph	nC35	47.8060	3159217		ug/L	Z
Aliph	nC36	49.8090	3259589		ug/L	Z
Aliph	nC37	52.2960	3009258		ug/L	Z
Aliph	nC38	55.2370	1262677		ug/L	Z
Aliph	nC39	58.8850	659342		ug/L	Z
Aliph	Norpristane	21.9070			ug/L	U
Aliph	Phytane	24.8210			ug/L	U
Aliph	Pristane	22.9640			ug/L	U

Results for: GCMS with Full Scan**Results for: GCMS with Full Scan****Unique ID:** W13/007505 DISS GCMS-Scan/02**Instrument / Type:** GCMS with Full Scan Run: 2**for Analysis:** Whole Oils**Preparation:** Dissolved in solvent**Analysis Date:** 18/11/2016**Method ID/s:****Linked Image:** [LinkedFiles\GAB_BCH1\GCMS\W13_007505_int_WholeOil.jpg](#)**Sample Volume:****Volume Units:****Extract Volume:****Dilution Factor:****Comment:** Interior

Results for: GCMS with Full Scan

7505 Interior – No botryococcane, high wax



Data Sheet:

(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Respse:	Value:	units:	Qualifier:
Aliph	Botryococcane	39.4780			ug/L	U
Aliph	nC10	7.5100			ug/L	U
Aliph	nC11	9.9450			ug/L	U
Aliph	nC12	12.3690			ug/L	U
Aliph	nC13	14.7030			ug/L	U
Aliph	nC14	16.9230			ug/L	U
Aliph	nC15	19.0270			ug/L	U
Aliph	nC16	21.0200			ug/L	U
Aliph	nC17	22.9150			ug/L	U
Aliph	nC18	24.7150			ug/L	U
Aliph	nC19	26.4300			ug/L	U
Aliph	nC20	28.0680			ug/L	U
Aliph	nC21	29.6330			ug/L	U
Aliph	nC22	31.1340			ug/L	U
Aliph	nC23	32.5720			ug/L	U
Aliph	nC24	33.9520			ug/L	U
Aliph	nC25	35.2810			ug/L	U
Aliph	nC26	36.5600			ug/L	U
Aliph	nC27	37.7930	6676009		ug/L	Z
Aliph	nC28	38.9870	18754966		ug/L	Z
Aliph	nC29	40.1370	28874823		ug/L	Z
Aliph	nC30	41.2480	26253494		ug/L	Z
Aliph	nC31	42.3270	22256608		ug/L	Z
Aliph	nC32	43.4130	14716774		ug/L	Z
Aliph	nC33	44.6430	9151551		ug/L	Z
Aliph	nC34	46.0860	5355900		ug/L	Z
Aliph	nC35	47.8060	3112984		ug/L	Z
Aliph	nC36	49.8090	2587055		ug/L	Z
Aliph	nC37	52.2960	1486153		ug/L	Z
Aliph	nC38	55.2370			ug/L	U
Aliph	nC39	58.8850			ug/L	U
Aliph	Norpristane	21.9070			ug/L	U
Aliph	Phytane	24.8210			ug/L	U
Aliph	Pristane	22.9640			ug/L	U

Results for: GCMS with Full Scan**Qualifier codes:**

A	TIC is a possible aldol-condensation product
B	Analyte was also detected in the blank
D	Compound quantitated on a diluted sample
E	Inorganics: Estimated due to interference Organics: Concentration exceeds the calibration range of the instrument
J	Estimated - Result is \geq the Method Detection Limit (MDL) and $<$ the Limit of Quantitation (LOQ)
M	Duplicate injection precision not met
N	Spike sample not within control limits
O	Presumptive evidence of a compound
P	Concentration difference between primary and confirmation columns $> 25\%$
R	Spike/Surrogate failed recovery limits
S	Method of standard additions (MSA) used for calculation
T	Detected but Quantitated amount exceeded maximum
U	Compound Not Detected
V	overloaded and possibly not a water extract
X	Duplicate analysis not within control limits
Y	Detected
Z	Detected but not Quantified (too small)

Sample ID : **W13/007506**

Beach E1: Waitpinga Beach Visit: 1

Comments:

Location: Shore Upper

Local Date Time: 22/11/2014 11:29:09 AM

Type: Waxy Bitumen

Family: Type IV waxy bitumen (no botryococcane, hig

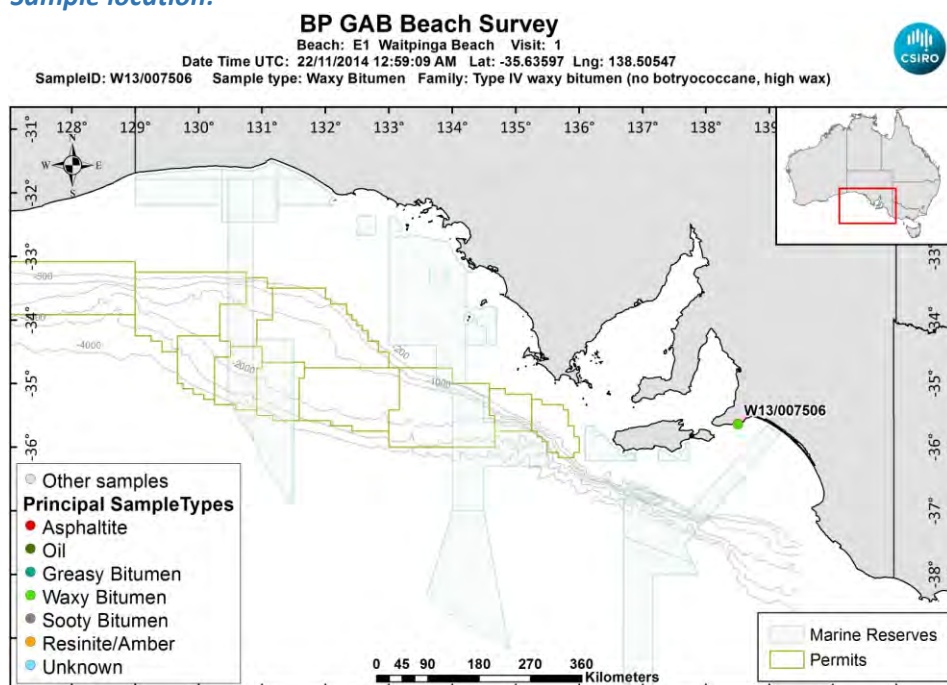
Size (cm): 2

Latitude (Y): -35.635967

Weight (gm): 1.56794

Longitude (X): 138.505465

Sample location:



[LinkedFiles\GAB_BCH1\SampleLocations\W13_007506_Location.jpg](#)

Sample - field image:



[LinkedFiles\GAB_BCH1\Samples\W13_007506_146A0519.JPG](#)

Sample - laboratory image:



[LinkedFiles\GAB_BCH1\Samples\W13_007506_Photo01.JPG](#)

Analyses Requested

Split:	Analysis:	Sent:
1	Bitumen Determination	YES
2	Whole Oils	YES
3	Elemental CHNS	YES
4	Biomarkers	YES

Analyses Completed:

Analysis:	Instrument/Type:
Biomarkers	Gas Chromatography Mass Spectrometry Run: 3
Biomarkers	Gas Chromatography Mass Spectrometry Run: 2
Biomarkers	Gas Chromatography Mass Spectrometry Run: 1
Elemental CHNS	Elemental Analyser Run: 1
Whole Oils	GCMS with Full Scan Run: 2
Whole Oils	GCMS with Full Scan Run: 1

Sample Analyses Completed:

Results for: Gas Chromatography Mass Spectrometry

Unique ID: W13/007506 DISS GC-MS/01

Instrument / Type: Gas Chromatography Mass Spectrometry Run: 1

for Analysis: Biomarkers

Analysis Date: 18/07/2017

Linked Image: [None available](#)

Preparation: Dissolved in solvent

Method ID/s:

Sample Volume:

Volume Units:

Extract Volume:

Dilution Factor:

Comment: External Ratios only

Results for: Gas Chromatography Mass Spectrometry

Data Sheet:

(default units ppb)

Type:	Compound / Variable:	Retention Time:	Target Response:	Value:	units:	Qualifier:
BiomRatio	% C27 aaa 20R			26.4041434926516	ratio	Y
BiomRatio	% C27 abb 20(R+S)			34.7955558426458	ratio	Y
BiomRatio	% C28 aaa 20R			40.6629078378803	ratio	Y
BiomRatio	% C28 abb 20(R+S)			33.9209353400943	ratio	Y
BiomRatio	% C29 aaa 20R			32.9329486694681	ratio	Y
BiomRatio	% C29 abb 20(R+S)			31.2835088172599	ratio	Y
BiomRatio	(C21+C22)/(C27+C28+C29)			0.47560391723029	ratio	Y
BiomRatio	25-Nor/C30H			0.123146117985506	ratio	Y
BiomRatio	C19t/C23t			2.91454563602401E-02	ratio	Y
BiomRatio	C22t/C21t			0.089369398996958	ratio	Y
BiomRatio	C22t/C24t			0.048564726907182	ratio	Y
BiomRatio	C23t/C30H			0.426539592564097	ratio	Y
BiomRatio	C24t/C23t			0.638305456930601	ratio	Y
BiomRatio	C24Tet/C23t			0.242923956595514	ratio	Y
BiomRatio	C24Tet/C26t			0.447798659482192	ratio	Y
BiomRatio	C24Tet/C30H			0.103616685470309	ratio	Y
BiomRatio	C26t/C25t			1.09586081746695	ratio	Y
BiomRatio	C27 Dia/(Dia+Reg)			0.731511728664872	ratio	Y
BiomRatio	C27 Dia/Ster			0.966838187748185	ratio	Y
BiomRatio	C28BNH/C30H			0.129842444737058	ratio	Y
BiomRatio	C29/C27 abb Sterane Ratio			0.899066218649637	ratio	Y
BiomRatio	C29H/C30H			0.604129097394758	ratio	Y
BiomRatio	C29Ts/(C29Ts+C29H)			0.268403162666686	ratio	Y
BiomRatio	C30DiaH/C30H			0.211268804909423	ratio	Y
BiomRatio	C30Ts/C30H			7.84796114792435E-02	ratio	Y
BiomRatio	C35 Homohopane Index			7.71762603884932E-02	ratio	Y
BiomRatio	C35HS/C34HS			0.765338848424902	ratio	Y
BiomRatio	Gam/C30H			0.077658535991996	ratio	Y
BiomRatio	Gam/C31HR			0.33191229415511	ratio	Y
BiomRatio	Ole/C30H			8.28221885006857E-02	ratio	Y
BiomRatio	Sterane/hopane			1.86778669863721	ratio	Y
BiomRatio	Steranes/Terpanes			1.29901875994036	ratio	Y
BiomRatio	Tricyclic/Pentacyclic Terpanes			0.437844283883146	ratio	Y

Results for: Gas Chromatography Mass Spectrometry

Unique ID: W13/007506 DISS GC-MS/02

Instrument / Type: Gas Chromatography Mass Spectrometry Run: 2

for Analysis: Biomarkers

Preparation: Dissolved in solvent

Analysis Date: 18/07/2017

Method ID/s:

Linked Image: [None available](#)

Sample Volume:

Volume Units:

Extract Volume:

Dilution Factor:

Comment: Internal Ratios only

Results for: Gas Chromatography Mass Spectrometry

Data Sheet:

(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Rspnse:	Value:	units:	Qualifier:
BiomRatio	% C27 aaa 20R			28.5262512418028	ratio	Y
BiomRatio	% C27 abb 20(R+S)			34.4463409798787	ratio	Y
BiomRatio	% C28 aaa 20R			39.8006153450672	ratio	Y
BiomRatio	% C28 abb 20(R+S)			34.4144966839796	ratio	Y
BiomRatio	% C29 aaa 20R			31.67313341313	ratio	Y
BiomRatio	% C29 abb 20(R+S)			31.1391623361418	ratio	Y
BiomRatio	(C21+C22)/(C27+C28+C29)			0.424557193686086	ratio	Y
BiomRatio	25-Nor/C30H			0.137902164541453	ratio	Y
BiomRatio	C19t/C23t			4.73371132440829E-02	ratio	Y
BiomRatio	C22t/C21t			7.06064970842831E-02	ratio	Y
BiomRatio	C22t/C24t			3.92109657127325E-02	ratio	Y
BiomRatio	C23t/C30H			0.488607795979489	ratio	Y
BiomRatio	C24t/C23t			0.597936373050258	ratio	Y
BiomRatio	C24Tet/C23t			0.21456333672318	ratio	Y
BiomRatio	C24Tet/C26t			0.375655482475752	ratio	Y
BiomRatio	C24Tet/C30H			0.104837319054318	ratio	Y
BiomRatio	C26t/C25t			1.65977572968815	ratio	Y
BiomRatio	C27 Dia/(Dia+Reg)			0.726658903753843	ratio	Y
BiomRatio	C27 Dia/Ster			0.961435174687784	ratio	Y
BiomRatio	C28BNH/C30H			0	ratio	U
BiomRatio	C29/C27 abb Sterane Ratio			0.903990422504708	ratio	Y
BiomRatio	C29H/C30H			0.670250034033671	ratio	Y
BiomRatio	C29Ts/(C29Ts+C29H)			0.172643454101409	ratio	Y
BiomRatio	C30DiaH/C30H			0.210886236783591	ratio	Y
BiomRatio	C30Ts/C30H			0	ratio	U
BiomRatio	C35 Homohopane Index			6.63500908033084E-02	ratio	Y
BiomRatio	C35HS/C34HS			0.741713785886102	ratio	Y
BiomRatio	Gam/C30H			1.87888551073195E-02	ratio	Y
BiomRatio	Gam/C31HR			9.56014777187716E-02	ratio	Y
BiomRatio	Ole/C30H			3.58601443027635E-02	ratio	Y
BiomRatio	Sterane/hopane			2.56972679479538	ratio	Y
BiomRatio	Steranes/Terpanes			1.68476896130011	ratio	Y
BiomRatio	Tricyclic/Pentacyclic Terpanes			0.525269549607773	ratio	Y

Results for: Gas Chromatography Mass Spectrometry

Unique ID: W13/007506 DISS GC-MS/03

Instrument / Type: Gas Chromatography Mass Spectrometry Run: 3

for Analysis: Biomarkers

Preparation: Dissolved in solvent

Analysis Date: 18/07/2017

Method ID/s:

Linked Image: [None available](#)

Sample Volume:

Volume Units:

Extract Volume:

Dilution Factor:

Comment: Internal duplicate Ratios only

Results for: Gas Chromatography Mass Spectrometry

Data Sheet:

(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Respse:	Value:	units:	Qualifier:
BiomRatio	% C27 aaa 20R			35.0752826407532	ratio	Y
BiomRatio	% C27 abb 20(R+S)			37.3460733445893	ratio	Y
BiomRatio	% C28 aaa 20R			30.7131999848754	ratio	Y
BiomRatio	% C28 abb 20(R+S)			28.6814353356433	ratio	Y
BiomRatio	% C29 aaa 20R			34.2115173743714	ratio	Y
BiomRatio	% C29 abb 20(R+S)			33.9724913197674	ratio	Y
BiomRatio	(C21+C22)/(C27+C28+C29)			0.27514639801297	ratio	Y
BiomRatio	25-Nor/C30H			4.28023936812896E-02	ratio	Y
BiomRatio	C19t/C23t			0.140300200959652	ratio	Y
BiomRatio	C22t/C21t			0.295993956309152	ratio	Y
BiomRatio	C22t/C24t			0.202157010283421	ratio	Y
BiomRatio	C23t/C30H			0.169900190875448	ratio	Y
BiomRatio	C24t/C23t			0.557513214195822	ratio	Y
BiomRatio	C24Tet/C23t			0.548875544848361	ratio	Y
BiomRatio	C24Tet/C26t			1.16980441242837	ratio	Y
BiomRatio	C24Tet/C30H			9.32540598366019E-02	ratio	Y
BiomRatio	C26t/C25t			1.0455091739444	ratio	Y
BiomRatio	C27 Dia/(Dia+Reg)			0.578506196935878	ratio	Y
BiomRatio	C27 Dia/Ster			0.656522537034285	ratio	Y
BiomRatio	C28BNH/C30H			0	ratio	U
BiomRatio	C29/C27 abb Sterane Ratio			0.909667021919704	ratio	Y
BiomRatio	C29H/C30H			0.630436081161435	ratio	Y
BiomRatio	C29Ts/(C29Ts+C29H)			0.209700750845808	ratio	Y
BiomRatio	C30DiaH/C30H			8.66060010371895E-02	ratio	Y
BiomRatio	C30Ts/C30H			9.51119051433195E-03	ratio	Y
BiomRatio	C35 Homohopane Index			7.93328325105531E-02	ratio	Y
BiomRatio	C35HS/C34HS			0.828534935311769	ratio	Y
BiomRatio	Gam/C30H			4.69077091416578E-02	ratio	Y
BiomRatio	Gam/C31HR			0.164589009774594	ratio	Y
BiomRatio	Ole/C30H			8.98716545887489E-03	ratio	Y
BiomRatio	Sterane/hopane			0.74749047977556	ratio	Y
BiomRatio	Steranes/Terpanes			0.627152530507808	ratio	Y
BiomRatio	Tricyclic/Pentacyclic Terpanes			0.191879875172176	ratio	Y

Results for: Elemental Analyser

Unique ID: W13/007506_UNK_ELEM-AN/01

Instrument / Type: Elemental Analyser Run: 1

for Analysis: Elemental CHNS

Preparation: Unknown

Analysis Date:

Method ID/s:

Linked Image: [None available](#)

Sample Volume:

Volume Units:

Extract Volume:

Dilution Factor:

Comment:

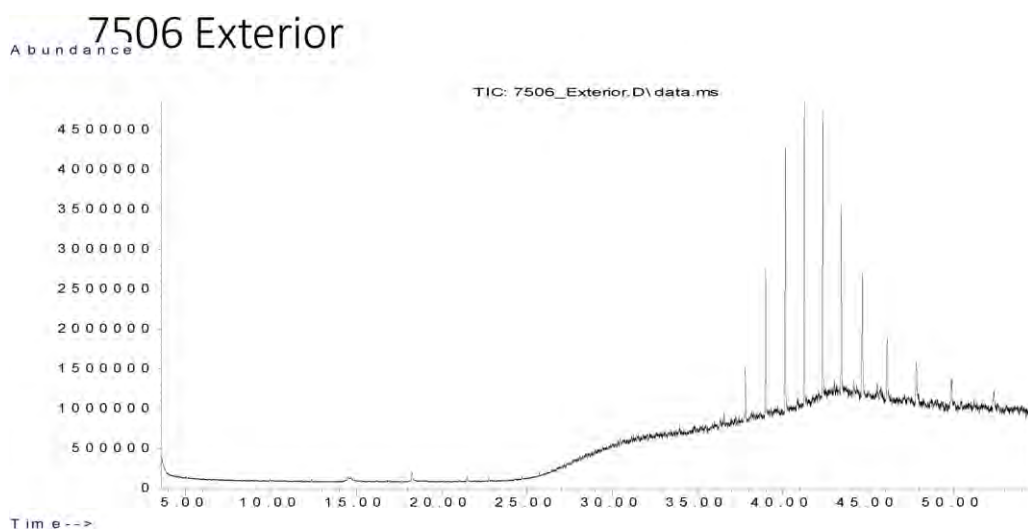
Results for: Elemental Analyser**Data Sheet:**

(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Respnse:	Value:	units:	Qualifier:
Inorg	Carbon			86	percent	Y
Inorg	delta13 Carbon				per mille	U
Inorg	delta34 Sulphur				per mille	U
Inorg	Hydrogen			9.96	percent	Y
Inorg	Nitrogen			0.08	percent	Y
Inorg	Sulphur			1.19	percent	Y

Results for: GCMS with Full Scan**Unique ID:** W13/007506_DISS_GCMS-Scan/01**Instrument / Type:** GCMS with Full Scan Run: 1**for Analysis:** Whole Oils**Preparation:** Dissolved in solvent**Analysis Date:** 18/11/2016**Method ID/s:****Linked Image:** [LinkedFiles\GAB_BCH1\GCMS\W13_007506_ext_WholeOil.jpg](#)**Sample Volume:****Volume Units:****Extract Volume:****Dilution Factor:****Comment:** Exterior

Results for: GCMS with Full Scan



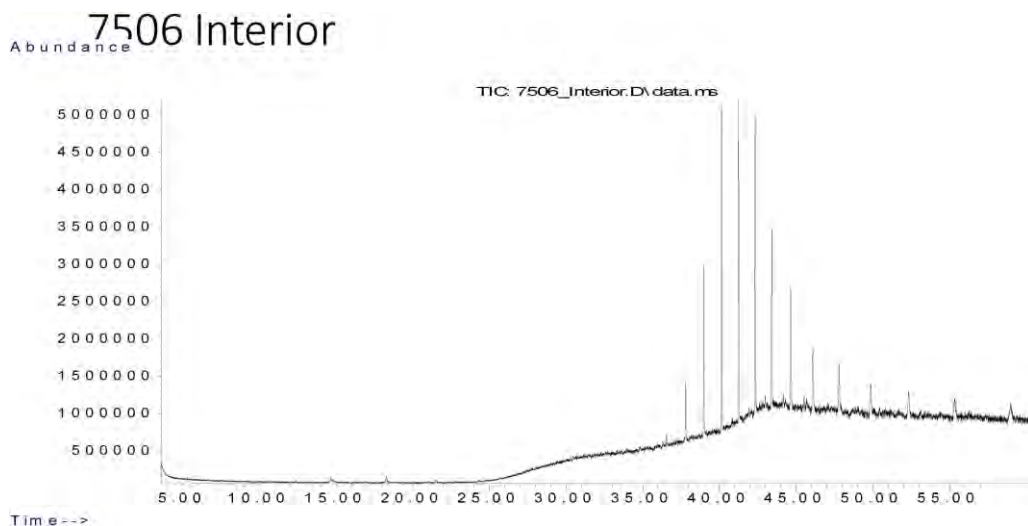
Data Sheet:

(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Respse:	Value:	units:	Qualifier:
Aliph	Botryococcane	39.4780			ug/L	U
Aliph	nC10	7.5100			ug/L	U
Aliph	nC11	9.9450			ug/L	U
Aliph	nC12	12.3690			ug/L	U
Aliph	nC13	14.7030			ug/L	U
Aliph	nC14	16.9230			ug/L	U
Aliph	nC15	19.0270			ug/L	U
Aliph	nC16	21.0200			ug/L	U
Aliph	nC17	22.9150			ug/L	U
Aliph	nC18	24.7150			ug/L	U
Aliph	nC19	26.4300			ug/L	U
Aliph	nC20	28.0680			ug/L	U
Aliph	nC21	29.6330			ug/L	U
Aliph	nC22	31.1340			ug/L	U
Aliph	nC23	32.5720			ug/L	U
Aliph	nC24	33.9520			ug/L	U
Aliph	nC25	35.2810			ug/L	U
Aliph	nC26	36.5600			ug/L	U
Aliph	nC27	37.7930	3544956		ug/L	Z
Aliph	nC28	38.9870	10167480		ug/L	Z
Aliph	nC29	40.1370	18316094		ug/L	Z
Aliph	nC30	41.2480	20778836		ug/L	Z
Aliph	nC31	42.3270	20899333		ug/L	Z
Aliph	nC32	43.4130	15353704		ug/L	Z
Aliph	nC33	44.6430	10561348		ug/L	Z
Aliph	nC34	46.0860	7023711		ug/L	Z
Aliph	nC35	47.8060	5124531		ug/L	Z
Aliph	nC36	49.8090	4183746		ug/L	Z
Aliph	nC37	52.2960	2679294		ug/L	Z
Aliph	nC38	55.2370			ug/L	U
Aliph	nC39	58.8850			ug/L	U
Aliph	Norpristane	21.9070			ug/L	U
Aliph	Phytane	24.8210			ug/L	U
Aliph	Pristane	22.9640			ug/L	U

Results for: GCMS with Full Scan**Results for: GCMS with Full Scan****Unique ID:** W13/007506 DISS GCMS-Scan/02**Instrument / Type:** GCMS with Full Scan Run: 2**for Analysis:** Whole Oils**Preparation:** Dissolved in solvent**Analysis Date:** 18/11/2016**Method ID/s:****Linked Image:** [LinkedFiles\GAB_BCH1\GCMS\W13_007506_int_WholeOil.jpg](#)**Sample Volume:****Volume Units:****Extract Volume:****Dilution Factor:****Comment:** Interior

Results for: GCMS with Full Scan



Data Sheet:

(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Respse:	Value:	units:	Qualifier:
Aliph	Botryococcane	39.4780			ug/L	U
Aliph	nC10	7.5100			ug/L	U
Aliph	nC11	9.9450			ug/L	U
Aliph	nC12	12.3690			ug/L	U
Aliph	nC13	14.7030			ug/L	U
Aliph	nC14	16.9230			ug/L	U
Aliph	nC15	19.0270			ug/L	U
Aliph	nC16	21.0200			ug/L	U
Aliph	nC17	22.9150			ug/L	U
Aliph	nC18	24.7150			ug/L	U
Aliph	nC19	26.4300			ug/L	U
Aliph	nC20	28.0680			ug/L	U
Aliph	nC21	29.6330			ug/L	U
Aliph	nC22	31.1340			ug/L	U
Aliph	nC23	32.5720			ug/L	U
Aliph	nC24	33.9520			ug/L	U
Aliph	nC25	35.2810			ug/L	U
Aliph	nC26	36.5600			ug/L	U
Aliph	nC27	37.7930	4710102		ug/L	Z
Aliph	nC28	38.9870	13345554		ug/L	Z
Aliph	nC29	40.1370	24139062		ug/L	Z
Aliph	nC30	41.2480	24688218		ug/L	Z
Aliph	nC31	42.3270	22268476		ug/L	Z
Aliph	nC32	43.4130	15300831		ug/L	Z
Aliph	nC33	44.6430	11040230		ug/L	Z
Aliph	nC34	46.0860	7205064		ug/L	Z
Aliph	nC35	47.8060	6117601		ug/L	Z
Aliph	nC36	49.8090	5108337		ug/L	Z
Aliph	nC37	52.2960	3981199		ug/L	Z
Aliph	nC38	55.2370	4268301		ug/L	Z
Aliph	nC39	58.8850	3383794		ug/L	Z
Aliph	Norpristane	21.9070			ug/L	U
Aliph	Phytane	24.8210			ug/L	U
Aliph	Pristane	22.9640			ug/L	U

Results for: GCMS with Full Scan**Qualifier codes:**

A	TIC is a possible aldol-condensation product
B	Analyte was also detected in the blank
D	Compound quantitated on a diluted sample
E	Inorganics: Estimated due to interference Organics: Concentration exceeds the calibration range of the instrument
J	Estimated - Result is \geq the Method Detection Limit (MDL) and $<$ the Limit of Quantitation (LOQ)
M	Duplicate injection precision not met
N	Spike sample not within control limits
O	Presumptive evidence of a compound
P	Concentration difference between primary and confirmation columns $> 25\%$
R	Spike/Surrogate failed recovery limits
S	Method of standard additions (MSA) used for calculation
T	Detected but Quantitated amount exceeded maximum
U	Compound Not Detected
V	overloaded and possibly not a water extract
X	Duplicate analysis not within control limits
Y	Detected
Z	Detected but not Quantified (too small)

Sample ID : **W13/007507**

Beach E1: Waitpinga Beach Visit: 1

Comments:

Location: Mid Intertidal

Local Date Time: 22/11/2014 11:40:30 AM

Type: Asphaltite

Family: Asphaltite

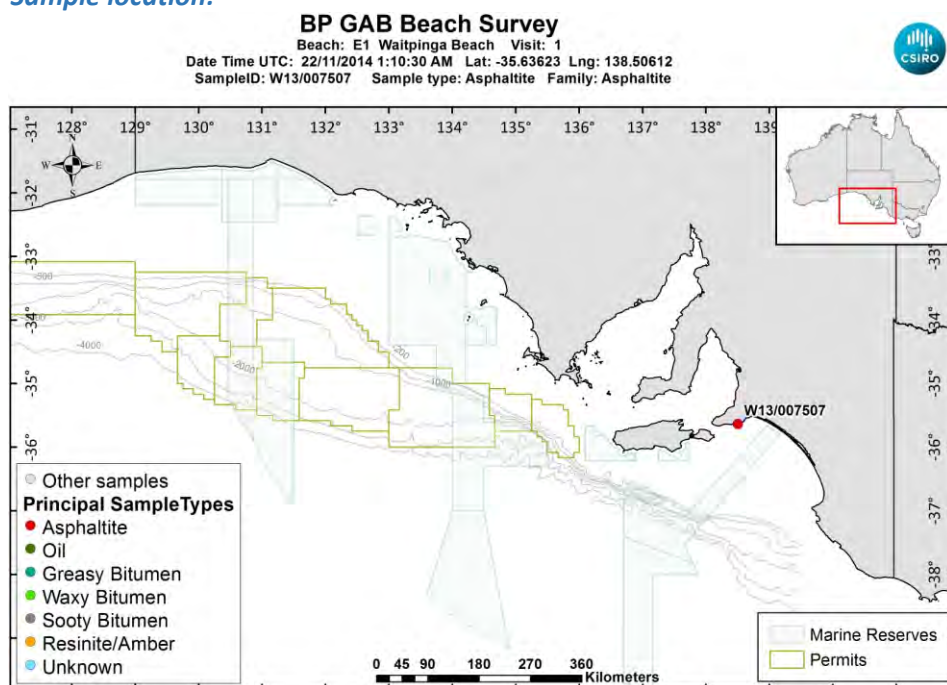
Size (cm): 22

Latitude (Y): -35.636228

Weight (gm): 601

Longitude (X): 138.506124

Sample location:



[LinkedFiles\GAB_BCH1\SampleLocations\W13_007507_Location.jpg](#)

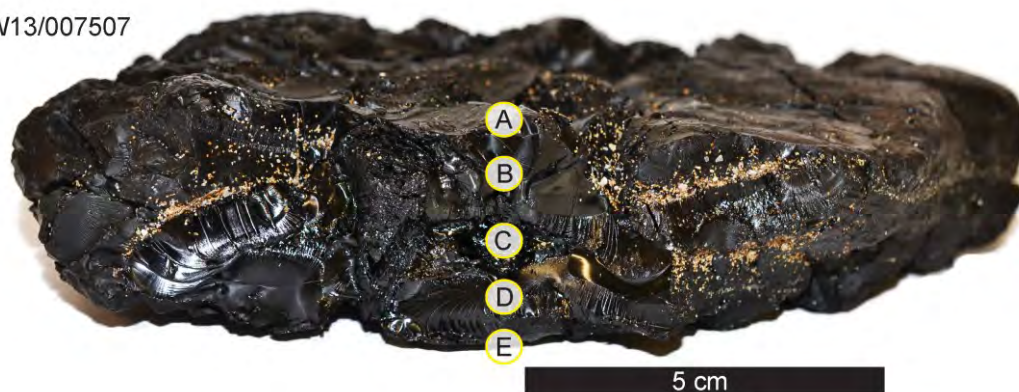
Sample - field image:



[LinkedFiles\GAB_BCH1\Samples\W13_007507_146A0529.JPG](#)

Sample - laboratory image:

W13/007507


[LinkedFiles\GAB_BCH1\Samples\W13_007507_CSIAsampling-01.jpg](#)
Analyses Requested

Split:	Analysis:	Sent:
1	Bitumen Determination	YES
2	Whole Oils	YES
3	Elemental CHNS	YES
4	Biomarkers	YES
5	CSIA	YES
6	CSIA	YES
7	CSIA	YES
8	CSIA	YES
9	CSIA	YES

Analyses Completed:

Analysis:	Instrument/Type:
Biomarkers	Gas Chromatography Mass Spectrometry Run: 2
Biomarkers	Gas Chromatography Mass Spectrometry Run: 1
CSIA	Compound Specific Isotope Analysis d13C Run: 15
CSIA	Compound Specific Isotope Analysis d13C Run: 14
CSIA	Compound Specific Isotope Analysis d13C Run: 13
CSIA	Compound Specific Isotope Analysis d13C Run: 12
CSIA	Compound Specific Isotope Analysis d13C Run: 11
CSIA	Compound Specific Isotope Analysis d2H Run: 5
CSIA	Compound Specific Isotope Analysis d2H Run: 4
CSIA	Compound Specific Isotope Analysis d2H Run: 3
CSIA	Compound Specific Isotope Analysis d2H Run: 2
CSIA	Compound Specific Isotope Analysis d2H Run: 1
Elemental CHNS	Elemental Analyser Run: 1
Whole Oils	GCMS with Full Scan Run: 2
Whole Oils	GCMS with Full Scan Run: 1

Sample Analyses Completed:**Results for: Gas Chromatography Mass Spectrometry****Unique ID:** W13/007507 DISS GC-MS/01**Instrument / Type:** Gas Chromatography Mass Spectrometry Run: 1**for Analysis:** Biomarkers**Analysis Date:** 18/07/2017**Linked Image:** [None available](#)**Preparation:** Dissolved in solvent**Method ID/s:****Sample Volume:****Volume Units:****Extract Volume:****Dilution Factor:****Comment:** External Ratios only

Results for: Gas Chromatography Mass Spectrometry

Data Sheet:

(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Respnse:	Value:	units:	Qualifier:
BiomRatio	% C27 aaa 20R			36.3557092769137	ratio	Y
BiomRatio	% C27 abb 20(R+S)			38.8417761598318	ratio	Y
BiomRatio	% C28 aaa 20R			28.1893837403179	ratio	Y
BiomRatio	% C28 abb 20(R+S)			24.1343160365629	ratio	Y
BiomRatio	% C29 aaa 20R			35.4549069827684	ratio	Y
BiomRatio	% C29 abb 20(R+S)			37.0239078036052	ratio	Y
BiomRatio	(C21+C22)/(C27+C28+C29)			0.091994302603869	ratio	Y
BiomRatio	25-Nor/C30H			2.39115361956353E-02	ratio	Y
BiomRatio	C19t/C23t			7.70286235413601E-02	ratio	Y
BiomRatio	C22t/C21t			0.373129712535344	ratio	Y
BiomRatio	C22t/C24t			0.281967103652429	ratio	Y
BiomRatio	C23t/C30H			0.128267092885506	ratio	Y
BiomRatio	C24t/C23t			0.372491553878998	ratio	Y
BiomRatio	C24Tet/C23t			0.401293344663917	ratio	Y
BiomRatio	C24Tet/C26t			1.03801160184858	ratio	Y
BiomRatio	C24Tet/C30H			5.14727307143419E-02	ratio	Y
BiomRatio	C26t/C25t			0.997017318794099	ratio	Y
BiomRatio	C27 Dia/(Dia+Reg)			0.463062462190166	ratio	Y
BiomRatio	C27 Dia/Ster			0.494645369045005	ratio	Y
BiomRatio	C28BNH/C30H			4.99993619478456E-02	ratio	Y
BiomRatio	C29/C27 abb Sterane Ratio			0.95319811460871	ratio	Y
BiomRatio	C29H/C30H			0.665401728270602	ratio	Y
BiomRatio	C29Ts/(C29Ts+C29H)			0.203385353010674	ratio	Y
BiomRatio	C30DiaH/C30H			7.00926877096267E-02	ratio	Y
BiomRatio	C30Ts/C30H			5.84881141517841E-03	ratio	Y
BiomRatio	C35 Homohopane Index			0.070987288038889	ratio	Y
BiomRatio	C35HS/C34HS			0.84399440875961	ratio	Y
BiomRatio	Gam/C30H			4.73546357679277E-02	ratio	Y
BiomRatio	Gam/C31HR			0.160931025946358	ratio	Y
BiomRatio	Ole/C30H			4.63651232185052E-04	ratio	Y
BiomRatio	Sterane/hopane			0.343885080626256	ratio	Y
BiomRatio	Steranes/Terpanes			0.30765629543567	ratio	Y
BiomRatio	Tricyclic/Pentacyclic Terpanes			0.117757334168257	ratio	Y

Results for: Gas Chromatography Mass Spectrometry

Unique ID: W13/007507 DISS GC-MS/02

Instrument / Type: Gas Chromatography Mass Spectrometry Run: 2

for Analysis: Biomarkers

Preparation: Dissolved in solvent

Analysis Date: 18/07/2017

Method ID/s:

Linked Image: [None available](#)

Sample Volume:

Volume Units:

Extract Volume:

Dilution Factor:

Comment: Internal Ratios only

Results for: Gas Chromatography Mass Spectrometry

Data Sheet:

(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Respns:	Value:	units:	Qualifier:
BiomRatio	% C27 aaa 20R			39.9584169426782	ratio	Y
BiomRatio	% C27 abb 20(R+S)			38.993847492387	ratio	Y
BiomRatio	% C28 aaa 20R			27.0120639218625	ratio	Y
BiomRatio	% C28 abb 20(R+S)			24.678835551373	ratio	Y
BiomRatio	% C29 aaa 20R			33.0295191354592	ratio	Y
BiomRatio	% C29 abb 20(R+S)			36.32731695624	ratio	Y
BiomRatio	(C21+C22)/(C27+C28+C29)			0.135798903947757	ratio	Y
BiomRatio	25-Nor/C30H			3.41114163096075E-02	ratio	Y
BiomRatio	C19t/C23t			0.28695396998407	ratio	Y
BiomRatio	C22t/C21t			0.34824165915239	ratio	Y
BiomRatio	C22t/C24t			0.293286755771567	ratio	Y
BiomRatio	C23t/C30H			8.26252766703267E-02	ratio	Y
BiomRatio	C24t/C23t			0.552024817640647	ratio	Y
BiomRatio	C24Tet/C23t			0.845518571308795	ratio	Y
BiomRatio	C24Tet/C26t			2.22960424497015	ratio	Y
BiomRatio	C24Tet/C30H			6.98612058842886E-02	ratio	Y
BiomRatio	C26t/C25t			0.680048113065704	ratio	Y
BiomRatio	C27 Dia/(Dia+Reg)			0.434417502245183	ratio	Y
BiomRatio	C27 Dia/Ster			0.447933174224344	ratio	Y
BiomRatio	C28BNH/C30H			1.23761261651328E-02	ratio	Y
BiomRatio	C29/C27 abb Sterane Ratio			0.93161663422242	ratio	Y
BiomRatio	C29H/C30H			0.6467487123356	ratio	Y
BiomRatio	C29Ts/(C29Ts+C29H)			0.182850615760313	ratio	Y
BiomRatio	C30DiaH/C30H			8.25456094713908E-02	ratio	Y
BiomRatio	C30Ts/C30H			3.67854631608481E-02	ratio	Y
BiomRatio	C35 Homohopane Index			7.37474702271619E-02	ratio	Y
BiomRatio	C35HS/C34HS			0.794338101352764	ratio	Y
BiomRatio	Gam/C30H			7.02422229226778E-02	ratio	Y
BiomRatio	Gam/C31HR			0.216154854663867	ratio	Y
BiomRatio	Ole/C30H			6.48768102639063E-03	ratio	Y
BiomRatio	Sterane/hopane			0.335520330681259	ratio	Y
BiomRatio	Steranes/Terpanes			0.302637924366269	ratio	Y
BiomRatio	Tricyclic/Pentacyclic Terpanes			0.108652629652568	ratio	Y

Results for: Compound Specific Isotope Analysis d13C

Unique ID: W13/007507_PTE_CSIA-C13/11

Instrument / Type: Compound Specific Isotope Analysis d13C Run: 11

for Analysis: CSIA

Preparation: Pentane Extraction

Analysis Date: 17/07/2017

Method ID/s: Final d13C

Linked Image: [None available](#)

Sample Volume:

Volume Units:

Extract Volume:

Dilution Factor:

Comment: Part A Final d13C

Results for: Compound Specific Isotope Analysis d13C

Data Sheet:

(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Respse:	Value:	units:	Qualifier:
Aliph	nC13			-29.901	value	Y
Aliph	nC14			-30.783	value	Y
Aliph	nC15			-32.063	value	Y
Aliph	nC16			-32.344	value	Y
Aliph	nC17			-32.668	value	Y
Aliph	nC18			-32.658	value	Y
Aliph	nC19			-32.72	value	Y
Aliph	nC20			-32.777	value	Y
Aliph	nC21			-32.79	value	Y
Aliph	nC22			-32.812	value	Y
Aliph	nC23			-33.043	value	Y
Aliph	nC24			-32.591	value	Y
Aliph	nC25			-32.766	value	Y
Aliph	nC26			-32.391	value	Y
Aliph	nC27			-32.226	value	Y
Aliph	nC28			-32.061	value	Y
Aliph	nC29			-32.133	value	Y
Aliph	nC30			-32.238	value	Y
Aliph	nC31			-31.885	value	Y
Aliph	nC32			-31.79	value	Y
Aliph	nC33			-31.8	value	Y
Aliph	nC34			-32.217	value	Y
Aliph	nC35			-32.015	value	Y
Aliph	nC36			-32.192	value	Y
Aliph	nC37			-31.279	value	Y
Aliph	nC38			-31.313	value	Y
Aliph	nC39				value	U

Results for: Compound Specific Isotope Analysis d13C

Unique ID: W13/007507_PTE_CSIA-C13/12

Instrument / Type: Compound Specific Isotope Analysis d13C Run: 12

for Analysis: CSIA

Preparation: Pentane Extraction

Analysis Date: 17/07/2017

Method ID/s: Final d13C

Linked Image: [None available](#)

Sample Volume:

Volume Units:

Extract Volume:

Dilution Factor:

Comment: Part B Final d13C

Results for: Compound Specific Isotope Analysis d13C

Data Sheet:

(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Respse:	Value:	units:	Qualifier:
Aliph	nC13			-30.94	value	Y
Aliph	nC14			-31.455	value	Y
Aliph	nC15			-31.79	value	Y
Aliph	nC16			-32.088	value	Y
Aliph	nC17			-32.457	value	Y
Aliph	nC18			-32.618	value	Y
Aliph	nC19			-32.412	value	Y
Aliph	nC20			-32.281	value	Y
Aliph	nC21			-32.467	value	Y
Aliph	nC22			-32.604	value	Y
Aliph	nC23			-33.141	value	Y
Aliph	nC24			-32.324	value	Y
Aliph	nC25			-32.29	value	Y
Aliph	nC26			-33.25	value	Y
Aliph	nC27			-33.189	value	Y
Aliph	nC28			-32.747	value	Y
Aliph	nC29			-32.729	value	Y
Aliph	nC30			-32.588	value	Y
Aliph	nC31			-32.547	value	Y
Aliph	nC32			-32.481	value	Y
Aliph	nC33			-32.521	value	Y
Aliph	nC34			-32.003	value	Y
Aliph	nC35			-31.667	value	Y
Aliph	nC36			-33.332	value	Y
Aliph	nC37			-30.929	value	Y
Aliph	nC38			-33.222	value	Y
Aliph	nC39				value	U

Results for: Compound Specific Isotope Analysis d13C

Unique ID: W13/007507_PTE_CSIA-C13/13

Instrument / Type: Compound Specific Isotope Analysis d13C Run: 13

for Analysis: CSIA

Preparation: Pentane Extraction

Analysis Date: 17/07/2017

Method ID/s: Final d13C

Linked Image: [None available](#)

Sample Volume:

Volume Units:

Extract Volume:

Dilution Factor:

Comment: Part C Final d13C

Results for: Compound Specific Isotope Analysis d13C

Data Sheet:

(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Respse:	Value:	units:	Qualifier:
Aliph	nC13			-30.624	value	Y
Aliph	nC14			-31.869	value	Y
Aliph	nC15			-32.215	value	Y
Aliph	nC16			-32.819	value	Y
Aliph	nC17			-33.026	value	Y
Aliph	nC18			-33.495	value	Y
Aliph	nC19			-33.215	value	Y
Aliph	nC20			-33.132	value	Y
Aliph	nC21			-33.444	value	Y
Aliph	nC22			-33.586	value	Y
Aliph	nC23			-33.949	value	Y
Aliph	nC24			-33.465	value	Y
Aliph	nC25			-33.332	value	Y
Aliph	nC26			-33.1	value	Y
Aliph	nC27			-33.238	value	Y
Aliph	nC28			-32.973	value	Y
Aliph	nC29			-32.708	value	Y
Aliph	nC30			-32.871	value	Y
Aliph	nC31			-32.707	value	Y
Aliph	nC32			-32.775	value	Y
Aliph	nC33			-32.221	value	Y
Aliph	nC34			-31.831	value	Y
Aliph	nC35			-31.947	value	Y
Aliph	nC36			-32.967	value	Y
Aliph	nC37			-34.11	value	Y
Aliph	nC38			-33.649	value	Y
Aliph	nC39			-30.456	value	Y

Results for: Compound Specific Isotope Analysis d13C

Unique ID: W13/007507_PTE_CSIA-C13/14

Instrument / Type: Compound Specific Isotope Analysis d13C Run: 14

for Analysis: CSIA

Preparation: Pentane Extraction

Analysis Date: 17/07/2017

Method ID/s: Final d13C

Linked Image: [None available](#)

Sample Volume:

Volume Units:

Extract Volume:

Dilution Factor:

Comment: Part D Final d13C

Results for: Compound Specific Isotope Analysis d13C

Data Sheet:

(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Respns:	Value:	units:	Qualifier:
Aliph	nC13			-29.477	value	Y
Aliph	nC14			-31.45	value	Y
Aliph	nC15			-31.788	value	Y
Aliph	nC16			-31.804	value	Y
Aliph	nC17			-32.049	value	Y
Aliph	nC18			-32.451	value	Y
Aliph	nC19			-32.085	value	Y
Aliph	nC20			-32.373	value	Y
Aliph	nC21			-32.687	value	Y
Aliph	nC22			-32.485	value	Y
Aliph	nC23			-32.838	value	Y
Aliph	nC24			-32.576	value	Y
Aliph	nC25			-32.555	value	Y
Aliph	nC26			-32.486	value	Y
Aliph	nC27			-32.232	value	Y
Aliph	nC28			-32.195	value	Y
Aliph	nC29			-31.639	value	Y
Aliph	nC30			-31.431	value	Y
Aliph	nC31			-31.893	value	Y
Aliph	nC32			-31.845	value	Y
Aliph	nC33			-31.665	value	Y
Aliph	nC34			-31.366	value	Y
Aliph	nC35			-31.196	value	Y
Aliph	nC36			-31.995	value	Y
Aliph	nC37			-31.33	value	Y
Aliph	nC38				value	U
Aliph	nC39				value	U

Results for: Compound Specific Isotope Analysis d13C

Unique ID: W13/007507_PTE_CSIA-C13/15

Instrument / Type: Compound Specific Isotope Analysis d13C Run: 15

for Analysis: CSIA

Preparation: Pentane Extraction

Analysis Date: 17/07/2017

Method ID/s: Final d13C

Linked Image: [None available](#)

Sample Volume:

Volume Units:

Extract Volume:

Dilution Factor:

Comment: Part E Final d13C

Results for: Compound Specific Isotope Analysis d13C

Data Sheet:

(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Respns:	Value:	units:	Qualifier:
Aliph	nC13			-30.342	value	Y
Aliph	nC14			-31.084	value	Y
Aliph	nC15			-31.601	value	Y
Aliph	nC16			-31.916	value	Y
Aliph	nC17			-32.699	value	Y
Aliph	nC18			-33.048	value	Y
Aliph	nC19			-32.901	value	Y
Aliph	nC20			-32.909	value	Y
Aliph	nC21			-33.255	value	Y
Aliph	nC22			-33.187	value	Y
Aliph	nC23			-33.397	value	Y
Aliph	nC24			-32.771	value	Y
Aliph	nC25			-32.931	value	Y
Aliph	nC26			-32.752	value	Y
Aliph	nC27			-32.645	value	Y
Aliph	nC28			-32.828	value	Y
Aliph	nC29			-32.705	value	Y
Aliph	nC30			-32.289	value	Y
Aliph	nC31			-32.574	value	Y
Aliph	nC32			-32.541	value	Y
Aliph	nC33			-32.364	value	Y
Aliph	nC34			-31.384	value	Y
Aliph	nC35			-32.489	value	Y
Aliph	nC36			-33.307	value	Y
Aliph	nC37			-32.612	value	Y
Aliph	nC38				value	U
Aliph	nC39				value	U

Results for: Compound Specific Isotope Analysis d2H

Unique ID: W13/007507_PTE_CSIA/01

Instrument / Type: Compound Specific Isotope Analysis d2H Run: 1

for Analysis: CSIA

Preparation: Pentane Extraction

Analysis Date: 17/07/2017

Method ID/s: Final d 2H/1H

Linked Image: [None available](#)

Sample Volume:

Volume Units:

Extract Volume:

Dilution Factor:

Comment: Part A 2H analysis

Results for: Compound Specific Isotope Analysis d2H

Data Sheet:

(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Respns:	Value:	units:	Qualifier:
Aliph	nC13			-100.451	value	Y
Aliph	nC14			-114.457	value	Y
Aliph	nC15			-118.232	value	Y
Aliph	nC16			-119.0335	value	Y
Aliph	nC17			-118.872	value	Y
Aliph	nC18			-110.003	value	Y
Aliph	nC19			-113.36	value	Y
Aliph	nC20			-110.751	value	Y
Aliph	nC21			-109.093	value	Y
Aliph	nC22			-111.494	value	Y
Aliph	nC23			-108.4265	value	Y
Aliph	nC24			-108.098	value	Y
Aliph	nC25			-112.846	value	Y
Aliph	nC26			-109.903	value	Y
Aliph	nC27			-113.7935	value	Y
Aliph	nC28			-114.6575	value	Y
Aliph	nC29			-116.5285	value	Y
Aliph	nC30			-114.0025	value	Y
Aliph	nC31			-111.4495	value	Y
Aliph	nC32			-107.5195	value	Y
Aliph	nC33				value	U
Aliph	nC34				value	U
Aliph	nC35				value	U
Aliph	nC36				value	U
Aliph	nC37				value	U
Aliph	nC38				value	U
Aliph	nC39				value	U

Results for: Compound Specific Isotope Analysis d2H

Unique ID: W13/007507_PTE_CSIA/02

Instrument / Type: Compound Specific Isotope Analysis d2H Run: 2

for Analysis: CSIA

Preparation: Pentane Extraction

Analysis Date: 17/07/2017

Method ID/s: Final d 2H/1H

Linked Image: [None available](#)

Sample Volume:

Volume Units:

Extract Volume:

Dilution Factor:

Comment: Part B 2H analysis

Results for: Compound Specific Isotope Analysis d2H

Data Sheet:

(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Respns:	Value:	units:	Qualifier:
Aliph	nC13			-106.0515	value	Y
Aliph	nC14			-116.239	value	Y
Aliph	nC15			-118.5845	value	Y
Aliph	nC16			-114.6235	value	Y
Aliph	nC17			-116.0415	value	Y
Aliph	nC18			-111.1215	value	Y
Aliph	nC19			-111.5105	value	Y
Aliph	nC20			-109.4395	value	Y
Aliph	nC21			-109.099	value	Y
Aliph	nC22			-109.445	value	Y
Aliph	nC23			-107.8185	value	Y
Aliph	nC24			-108.373	value	Y
Aliph	nC25			-112.707	value	Y
Aliph	nC26			-109.247	value	Y
Aliph	nC27			-112.118	value	Y
Aliph	nC28			-114.8315	value	Y
Aliph	nC29			-110.0475	value	Y
Aliph	nC30			-115.259	value	Y
Aliph	nC31			-111.1165	value	Y
Aliph	nC32				value	U
Aliph	nC33				value	U
Aliph	nC34				value	U
Aliph	nC35				value	U
Aliph	nC36				value	U
Aliph	nC37				value	U
Aliph	nC38				value	U
Aliph	nC39				value	U

Results for: Compound Specific Isotope Analysis d2H

Unique ID: W13/007507_PTE_CSIA/03

Instrument / Type: Compound Specific Isotope Analysis d2H Run: 3

for Analysis: CSIA

Preparation: Pentane Extraction

Analysis Date: 17/07/2017

Method ID/s: Final d 2H/1H

Linked Image: [None available](#)

Sample Volume:

Volume Units:

Extract Volume:

Dilution Factor:

Comment: Part C 2H analysis

Results for: Compound Specific Isotope Analysis d2H

Data Sheet:

(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Respns:	Value:	units:	Qualifier:
Aliph	nC13			-98.591	value	Y
Aliph	nC14			-117.676	value	Y
Aliph	nC15			-117.4005	value	Y
Aliph	nC16			-116.02	value	Y
Aliph	nC17			-116.721	value	Y
Aliph	nC18			-106.936	value	Y
Aliph	nC19			-111.256	value	Y
Aliph	nC20			-111.7725	value	Y
Aliph	nC21			-111.99	value	Y
Aliph	nC22			-111.8525	value	Y
Aliph	nC23			-111.441	value	Y
Aliph	nC24			-110.044	value	Y
Aliph	nC25			-114.8415	value	Y
Aliph	nC26			-111.977	value	Y
Aliph	nC27			-113.81	value	Y
Aliph	nC28			-113.96	value	Y
Aliph	nC29			-117.44	value	Y
Aliph	nC30			-119.599	value	Y
Aliph	nC31			-113.5525	value	Y
Aliph	nC32			-114.931	value	Y
Aliph	nC33				value	U
Aliph	nC34				value	U
Aliph	nC35				value	U
Aliph	nC36				value	U
Aliph	nC37				value	U
Aliph	nC38				value	U
Aliph	nC39				value	U

Results for: Compound Specific Isotope Analysis d2H

Unique ID: W13/007507_PTE_CSIA/04

Instrument / Type: Compound Specific Isotope Analysis d2H Run: 4

for Analysis: CSIA

Preparation: Pentane Extraction

Analysis Date: 17/07/2017

Method ID/s: Final d 2H/1H

Linked Image: [None available](#)

Sample Volume:

Volume Units:

Extract Volume:

Dilution Factor:

Comment: Part D 2H analysis

Results for: Compound Specific Isotope Analysis d2H

Data Sheet:

(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Respns:	Value:	units:	Qualifier:
Aliph	nC13			-104.382	value	Y
Aliph	nC14			-108.6955	value	Y
Aliph	nC15			-114.186	value	Y
Aliph	nC16			-114.566	value	Y
Aliph	nC17			-114.058	value	Y
Aliph	nC18			-104.6965	value	Y
Aliph	nC19			-108.786	value	Y
Aliph	nC20			-107.114	value	Y
Aliph	nC21			-109.731	value	Y
Aliph	nC22			-109.52	value	Y
Aliph	nC23			-109.108	value	Y
Aliph	nC24			-108.213	value	Y
Aliph	nC25			-113.357	value	Y
Aliph	nC26			-108.585	value	Y
Aliph	nC27			-113.4825	value	Y
Aliph	nC28			-114.1205	value	Y
Aliph	nC29			-107.7085	value	Y
Aliph	nC30			-103.09	value	Y
Aliph	nC31			-111.583	value	Y
Aliph	nC32			-105.865	value	Y
Aliph	nC33				value	U
Aliph	nC34				value	U
Aliph	nC35				value	U
Aliph	nC36				value	U
Aliph	nC37				value	U
Aliph	nC38				value	U
Aliph	nC39				value	U

Results for: Compound Specific Isotope Analysis d2H

Unique ID: W13/007507_PTE_CSIA/05

Instrument / Type: Compound Specific Isotope Analysis d2H Run: 5

for Analysis: CSIA

Preparation: Pentane Extraction

Analysis Date: 17/07/2017

Method ID/s: Final d 2H/1H

Linked Image: [None available](#)

Sample Volume:

Volume Units:

Extract Volume:

Dilution Factor:

Comment: Part E 2H analysis

Results for: Compound Specific Isotope Analysis d2H

Data Sheet:

(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Respse:	Value:	units:	Qualifier:
Aliph	nC13			-102.73	value	Y
Aliph	nC14			-114.644	value	Y
Aliph	nC15			-113.976	value	Y
Aliph	nC16			-117.1515	value	Y
Aliph	nC17			-117.2	value	Y
Aliph	nC18			-105.2395	value	Y
Aliph	nC19			-110.6075	value	Y
Aliph	nC20			-109.103	value	Y
Aliph	nC21			-111.7095	value	Y
Aliph	nC22			-111.0055	value	Y
Aliph	nC23			-108.961	value	Y
Aliph	nC24			-108.8095	value	Y
Aliph	nC25			-112.4465	value	Y
Aliph	nC26			-110.4995	value	Y
Aliph	nC27			-112.752	value	Y
Aliph	nC28			-114.31	value	Y
Aliph	nC29			-112.137	value	Y
Aliph	nC30			-111.948	value	Y
Aliph	nC31			-111.8775	value	Y
Aliph	nC32				value	U
Aliph	nC33				value	U
Aliph	nC34				value	U
Aliph	nC35				value	U
Aliph	nC36				value	U
Aliph	nC37				value	U
Aliph	nC38				value	U
Aliph	nC39				value	U

Results for: Elemental Analyser

Unique ID: W13/007507_UNK_ELEM-AN/01

Instrument / Type: Elemental Analyser Run: 1

for Analysis: Elemental CHNS

Preparation: Unknown

Analysis Date:

Method ID/s:

Linked Image: [None available](#)

Sample Volume:

Volume Units:

Extract Volume:

Dilution Factor:

Comment:

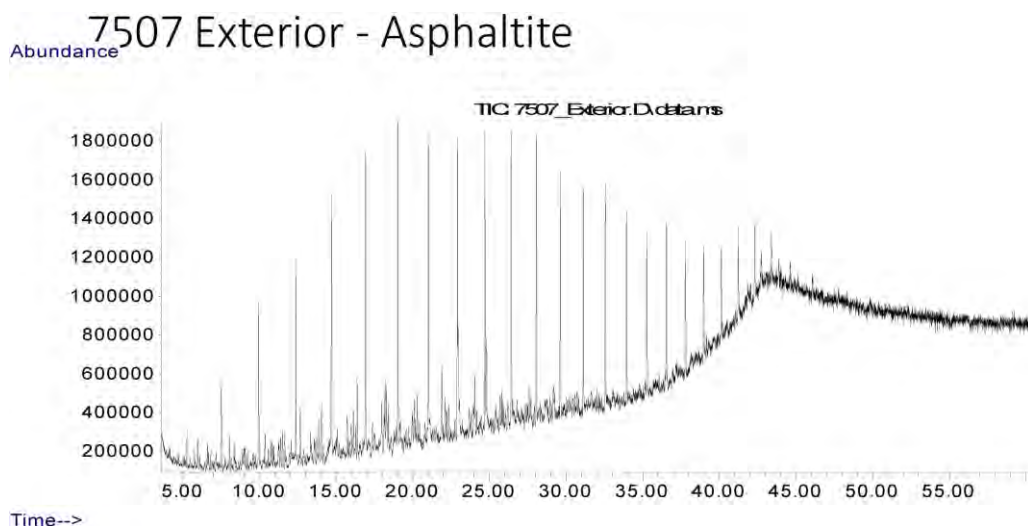
Data Sheet:

(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Respse:	Value:	units:	Qualifier:
Inorg	Carbon			83.895	percent	Y
Inorg	delta13 Carbon			-29.7421421794555	per mille	Y
Inorg	delta34 Sulphur			-5.65789418535862	per mille	Y
Inorg	Hydrogen			6.23	percent	Y
Inorg	Nitrogen			0.595	percent	Y
Inorg	Sulphur			3.85	percent	Y

Results for: GCMS with Full Scan**Unique ID:** W13/007507 DISS GCMS-Scan/01**Instrument / Type:** GCMS with Full Scan Run: 1**for Analysis:** Whole Oils**Preparation:** Dissolved in solvent**Analysis Date:** 18/11/2016**Method ID/s:****Linked Image:** [LinkedFiles\GAB BCH1\GCMS\W13_007507_ext_WholeOil.jpg](#)**Sample Volume:****Volume Units:****Extract Volume:****Dilution Factor:****Comment:** Exterior

Results for: GCMS with Full Scan



Data Sheet:

(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Rspnse:	Value:	units:	Qualifier:
Ratio	nC17/nC29		5.42475031427439		ug/L	Y
Ratio	nC17/Pristane		6.42876259140964		ug/L	Y
Ratio	nC18/Phytane		6.55129834479935		ug/L	Y
Ratio	Pristane/Phytane		1.53137922778521		ug/L	Y
Aliph	Botryococcane	39.4780			ug/L	U
Aliph	nC10	7.5100	2922614		ug/L	Z
Aliph	nC11	9.9450	5352583		ug/L	Z
Aliph	nC12	12.3690	7829543		ug/L	Z
Aliph	nC13	14.7030	8973439		ug/L	Z
Aliph	nC14	16.9230	10250916		ug/L	Z
Aliph	nC15	19.0270	10283371		ug/L	Z
Aliph	nC16	21.0200	9834189		ug/L	Z
Aliph	nC17	22.9150	13610449		ug/L	Z
Aliph	nC18	24.7150	9057111		ug/L	Z
Aliph	nC19	26.4300	8149051		ug/L	Z
Aliph	nC20	28.0680	7710365		ug/L	Z
Aliph	nC21	29.6330	7097161		ug/L	Z
Aliph	nC22	31.1340	6278521		ug/L	Z
Aliph	nC23	32.5720	5718917		ug/L	Z
Aliph	nC24	33.9520	5150532		ug/L	Z
Aliph	nC25	35.2810	4609106		ug/L	Z
Aliph	nC26	36.5600	4509939		ug/L	Z
Aliph	nC27	37.7930	3481009		ug/L	Z
Aliph	nC28	38.9870	2883720		ug/L	Z
Aliph	nC29	40.1370	2508954		ug/L	Z
Aliph	nC30	41.2480	2307621		ug/L	Z
Aliph	nC31	42.3270	1804598		ug/L	Z
Aliph	nC32	43.4130	1174629		ug/L	Z
Aliph	nC33	44.6430	1033358		ug/L	Z
Aliph	nC34	46.0860	703993		ug/L	Z
Aliph	nC35	47.8060			ug/L	U
Aliph	nC36	49.8090			ug/L	U
Aliph	nC37	52.2960			ug/L	U
Aliph	nC38	55.2370			ug/L	U

Results for: GCMS with Full Scan

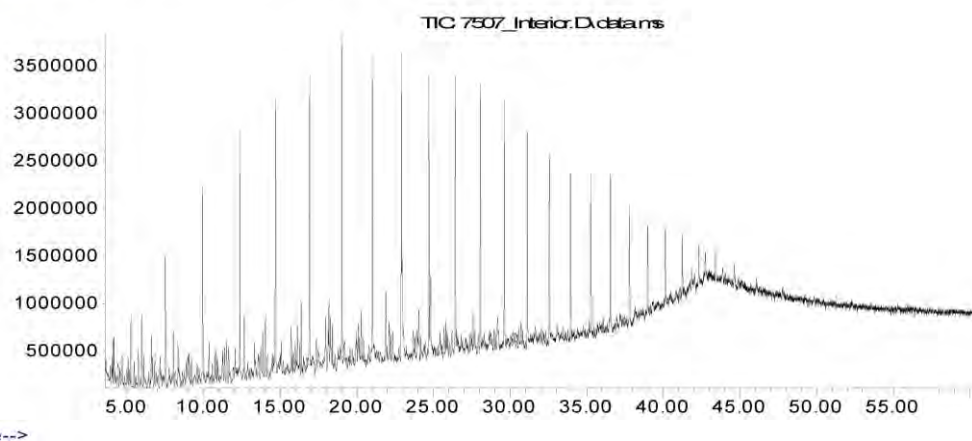
Aliph	nC39	58.8850		ug/L	U
Aliph	Norpristane	21.9070	3654166	ug/L	Z
Aliph	Phytane	24.8210	1382491	ug/L	Z
Aliph	Pristane	22.9640	2117118	ug/L	Z

Results for: GCMS with Full Scan**Unique ID:** W13/007507 DISS GCMS-Scan/02**Instrument / Type:** GCMS with Full Scan Run: 2**for Analysis:** Whole Oils**Preparation:** Dissolved in solvent**Analysis Date:** 18/11/2016**Method ID/s:****Linked Image:** [LinkedFiles\GAB_BCH1\GCMS\W13_007507_int_WholeOil.jpg](#)**Sample Volume:****Volume Units:****Extract Volume:****Dilution Factor:****Comment:** Interior

Results for: GCMS with Full Scan

7507 Interior - Asphaltite

Abundance



Time-->

Data Sheet:

(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Respse:	Value:	units:	Qualifier:
Ratio	nC17/nC29			5.0099041646936	ug/L	Y
Ratio	nC17/Pristane			3.19743275913775	ug/L	Y
Ratio	nC18/Phytane			2.88025783316666	ug/L	Y
Ratio	Pristane/Phytane			1.06473993843747	ug/L	Y
Aliph	Botryococcane	39.4780			ug/L	U
Aliph	nC10	7.5100	9570188		ug/L	Z
Aliph	nC11	9.9450	15253803		ug/L	Z
Aliph	nC12	12.3690	18510663		ug/L	Z
Aliph	nC13	14.7030	20884487		ug/L	Z
Aliph	nC14	16.9230	22812371		ug/L	Z
Aliph	nC15	19.0270	21568278		ug/L	Z
Aliph	nC16	21.0200	19923503		ug/L	Z
Aliph	nC17	22.9150	20609363		ug/L	Z
Aliph	nC18	24.7150	17436165		ug/L	Z
Aliph	nC19	26.4300	16004348		ug/L	Z
Aliph	nC20	28.0680	15018597		ug/L	Z
Aliph	nC21	29.6330	13833033		ug/L	Z
Aliph	nC22	31.1340	12276078		ug/L	Z
Aliph	nC23	32.5720	11554582		ug/L	Z
Aliph	nC24	33.9520	10058346		ug/L	Z
Aliph	nC25	35.2810	8465173		ug/L	Z
Aliph	nC26	36.5600	8331299		ug/L	Z
Aliph	nC27	37.7930	6867226		ug/L	Z
Aliph	nC28	38.9870	4647598		ug/L	Z
Aliph	nC29	40.1370	4113724		ug/L	Z
Aliph	nC30	41.2480	3395515		ug/L	Z
Aliph	nC31	42.3270	2485606		ug/L	Z
Aliph	nC32	43.4130	2122434		ug/L	Z
Aliph	nC33	44.6430	1178213		ug/L	Z
Aliph	nC34	46.0860	1215731		ug/L	Z
Aliph	nC35	47.8060			ug/L	U
Aliph	nC36	49.8090			ug/L	U
Aliph	nC37	52.2960			ug/L	U
Aliph	nC38	55.2370			ug/L	U

Results for: GCMS with Full Scan

Aliph	nC39	58.8850		ug/L	U
Aliph	Norpristane	21.9070	7516737	ug/L	Z
Aliph	Phytane	24.8210	6053682	ug/L	Z
Aliph	Pristane	22.9640	6445597	ug/L	Z

Qualifier codes:

A	TIC is a possible aldol-condensation product
B	Analyte was also detected in the blank
D	Compound quantitated on a diluted sample
E	Inorganics: Estimated due to interference Organics: Concentration exceeds the calibration range of the instrument
J	Estimated - Result is \geq the Method Detection Limit (MDL) and < the Limit of Quantitation (LOQ)
M	Duplicate injection precision not met
N	Spike sample not within control limits
O	Presumptive evidence of a compound
P	Concentration difference between primary and confirmation columns > 25%
R	Spike/Surrogate failed recovery limits
S	Method of standard additions (MSA) used for calculation
T	Detected but Quantitated amount exceeded maximum
U	Compound Not Detected
V	overloaded and possibly not a water extract
X	Duplicate analysis not within control limits
Y	Detected
Z	Detected but not Quantified (too small)

Sample ID : **W13/007508**

Beach E1: Waitpinga Beach Visit: 1

Comments:

Location: Shore Upper

Local Date Time: 22/11/2014 11:55:02 AM

Type: Waxy Bitumen

Family: Type III waxy bitumen (no botryococcane, low

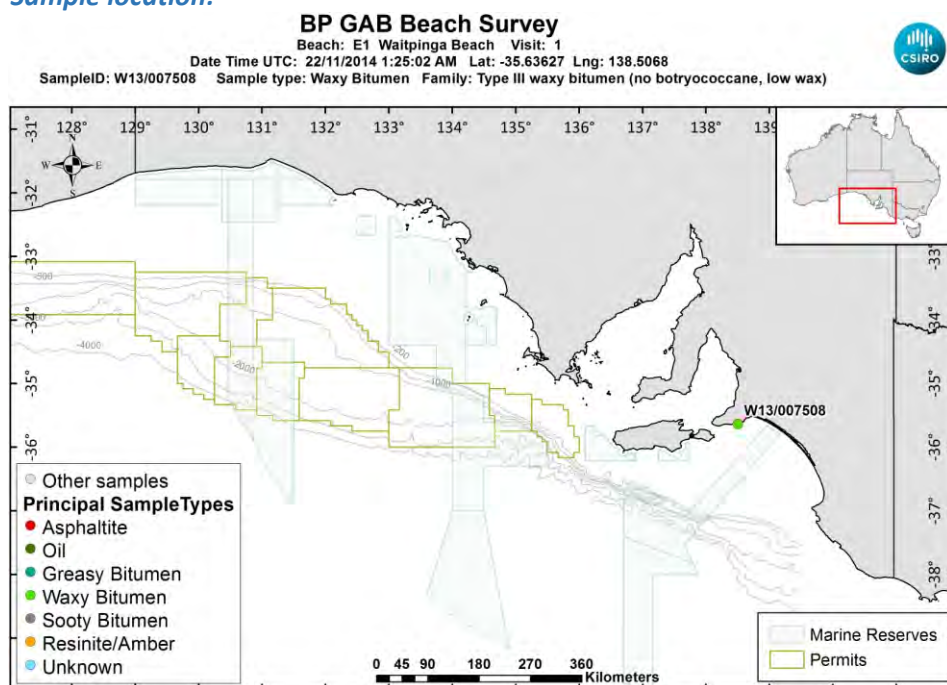
Size (cm): 4

Latitude (Y): -35.636275

Weight (gm): 4.57747

Longitude (X): 138.506803

Sample location:



[LinkedFiles\GAB_BCH1\SampleLocations\W13_007508_Location.jpg](#)

Sample - field image:



[LinkedFiles\GAB_BCH1\Samples\W13_007508_146A0533.JPG](#)

Sample - laboratory image:



[LinkedFiles\GAB_BCH1\Samples\W13_007508_Photo01.JPG](#)

Analyses Requested

Split:	Analysis:	Sent:
1	Bitumen Determination	YES
2	Whole Oils	YES
3	Elemental CHNS	YES

Analyses Completed:

Analysis:	Instrument/Type:
Elemental CHNS	Elemental Analyser Run: 1
Whole Oils	GCMS with Full Scan Run: 2
Whole Oils	GCMS with Full Scan Run: 1

Sample Analyses Completed:

Results for: Elemental Analyser

Unique ID: W13/007508_UNK_ELEM-AN/01

Instrument / Type: Elemental Analyser Run: 1

for Analysis: Elemental CHNS

Preparation: Unknown

Analysis Date:

Method ID/s:

Linked Image: [None available](#)

Sample Volume:

Volume Units:

Extract Volume:

Dilution Factor:

Comment: Sulphur isotope peak was very small. Result may not be an accurate value. Sulphur isotope peak was very small. Result may not be an accurate value.

Data Sheet:

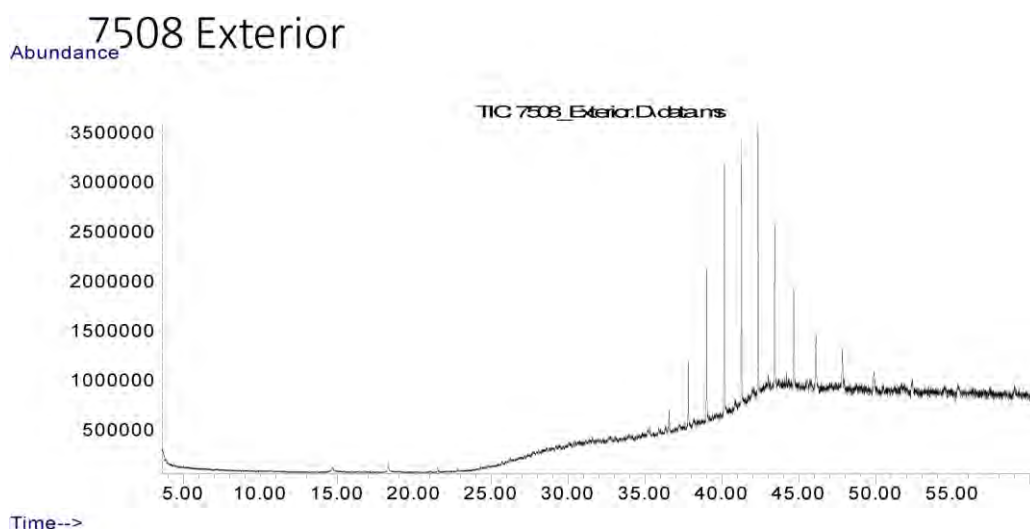
				(default units ppb)		
Type:	Compound / Variable:	Retentn Time:	Target Respns:	Value:	units:	Qualifier:
Inorg	Carbon			84.52	percent	Y
Inorg	delta13 Carbon			-29.125222181687	per mille	Y
Inorg	delta34 Sulphur			4.12703839481936	per mille	Y
Inorg	Hydrogen			10.65	percent	Y
Inorg	Nitrogen			0.07	percent	Y
Inorg	Sulphur			1.33	percent	Y

Results for: GCMS with Full Scan

Unique ID: W13/007508_DISS_GCMS-Scan/01

Results for: GCMS with Full Scan**Instrument / Type:** GCMS with Full Scan Run: 1**for Analysis:** Whole Oils**Preparation:** Dissolved in solvent**Analysis Date:** 18/11/2016**Method ID/s:****Linked Image:** [LinkedFiles\GAB BCH1\GCMS\W13_007508_ext_WholeOil.jpg](#)**Sample Volume:****Volume Units:****Extract Volume:****Dilution Factor:****Comment:** Exterior

Results for: GCMS with Full Scan



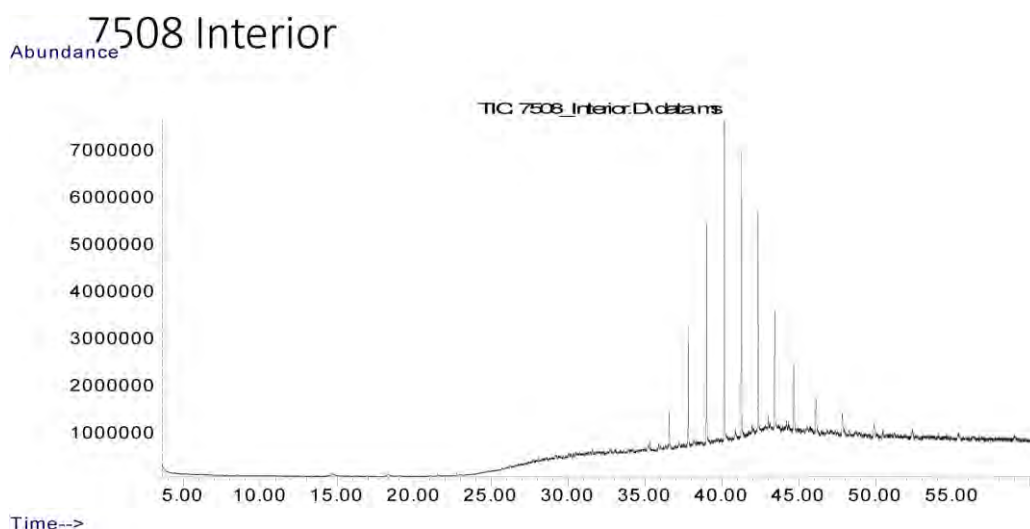
Data Sheet:

(default units ppb)

Type:	Compound / Variable:	Retention Time:	Target Response:	Value:	units:	Qualifier:
Aliph	Botryococcane	39.4780			ug/L	U
Aliph	nC10	7.5100			ug/L	U
Aliph	nC11	9.9450			ug/L	U
Aliph	nC12	12.3690			ug/L	U
Aliph	nC13	14.7030			ug/L	U
Aliph	nC14	16.9230			ug/L	U
Aliph	nC15	19.0270			ug/L	U
Aliph	nC16	21.0200			ug/L	U
Aliph	nC17	22.9150			ug/L	U
Aliph	nC18	24.7150			ug/L	U
Aliph	nC19	26.4300			ug/L	U
Aliph	nC20	28.0680			ug/L	U
Aliph	nC21	29.6330			ug/L	U
Aliph	nC22	31.1340			ug/L	U
Aliph	nC23	32.5720			ug/L	U
Aliph	nC24	33.9520			ug/L	U
Aliph	nC25	35.2810			ug/L	U
Aliph	nC26	36.5600	1111290		ug/L	Z
Aliph	nC27	37.7930	3674615		ug/L	Z
Aliph	nC28	38.9870	8336668		ug/L	Z
Aliph	nC29	40.1370	13770150		ug/L	Z
Aliph	nC30	41.2480	15010127		ug/L	Z
Aliph	nC31	42.3270	14728812		ug/L	Z
Aliph	nC32	43.4130	10484227		ug/L	Z
Aliph	nC33	44.6430	7532874		ug/L	Z
Aliph	nC34	46.0860	4525654		ug/L	Z
Aliph	nC35	47.8060	3445382		ug/L	Z
Aliph	nC36	49.8090	2504904		ug/L	Z
Aliph	nC37	52.2960	1499708		ug/L	Z
Aliph	nC38	55.2370			ug/L	U
Aliph	nC39	58.8850			ug/L	U
Aliph	Norpristane	21.9070			ug/L	U
Aliph	Phytane	24.8210			ug/L	U
Aliph	Pristane	22.9640			ug/L	U

Results for: GCMS with Full Scan**Results for: GCMS with Full Scan****Unique ID:** W13/007508 DISS GCMS-Scan/02**Instrument / Type:** GCMS with Full Scan Run: 2**for Analysis:** Whole Oils**Preparation:** Dissolved in solvent**Analysis Date:** 18/11/2016**Method ID/s:****Linked Image:** [LinkedFiles\GAB_BCH1\GCMS\W13_007508_int_WholeOil.jpg](#)**Sample Volume:****Volume Units:****Extract Volume:****Dilution Factor:****Comment:** Interior

Results for: GCMS with Full Scan



Data Sheet:

(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Respse:	Value:	units:	Qualifier:
Aliph	Botryococcane	39.4780			ug/L	U
Aliph	nC10	7.5100			ug/L	U
Aliph	nC11	9.9450			ug/L	U
Aliph	nC12	12.3690			ug/L	U
Aliph	nC13	14.7030			ug/L	U
Aliph	nC14	16.9230			ug/L	U
Aliph	nC15	19.0270			ug/L	U
Aliph	nC16	21.0200			ug/L	U
Aliph	nC17	22.9150			ug/L	U
Aliph	nC18	24.7150			ug/L	U
Aliph	nC19	26.4300			ug/L	U
Aliph	nC20	28.0680			ug/L	U
Aliph	nC21	29.6330			ug/L	U
Aliph	nC22	31.1340			ug/L	U
Aliph	nC23	32.5720			ug/L	U
Aliph	nC24	33.9520			ug/L	U
Aliph	nC25	35.2810			ug/L	U
Aliph	nC26	36.5600	4203854		ug/L	Z
Aliph	nC27	37.7930	14068667		ug/L	Z
Aliph	nC28	38.9870	27293293		ug/L	Z
Aliph	nC29	40.1370	38003307		ug/L	Z
Aliph	nC30	41.2480	33776179		ug/L	Z
Aliph	nC31	42.3270	27614979		ug/L	Z
Aliph	nC32	43.4130	17524263		ug/L	Z
Aliph	nC33	44.6430	11386525		ug/L	Z
Aliph	nC34	46.0860	6157250		ug/L	Z
Aliph	nC35	47.8060	4819486		ug/L	Z
Aliph	nC36	49.8090	3447366		ug/L	Z
Aliph	nC37	52.2960	2048217		ug/L	Z
Aliph	nC38	55.2370			ug/L	U
Aliph	nC39	58.8850			ug/L	U
Aliph	Norpristane	21.9070			ug/L	U
Aliph	Phytane	24.8210			ug/L	U
Aliph	Pristane	22.9640			ug/L	U

Results for: GCMS with Full Scan

Qualifier codes:

A	TIC is a possible aldol-condensation product
B	Analyte was also detected in the blank
D	Compound quantitated on a diluted sample
E	Inorganics: Estimated due to interference Organics: Concentration exceeds the calibration range of the instrument
J	Estimated - Result is \geq the Method Detection Limit (MDL) and $<$ the Limit of Quantitation (LOQ)
M	Duplicate injection precision not met
N	Spike sample not within control limits
O	Presumptive evidence of a compound
P	Concentration difference between primary and confirmation columns $> 25\%$
R	Spike/Surrogate failed recovery limits
S	Method of standard additions (MSA) used for calculation
T	Detected but Quantitated amount exceeded maximum
U	Compound Not Detected
V	overloaded and possibly not a water extract
X	Duplicate analysis not within control limits
Y	Detected
Z	Detected but not Quantified (too small)

Sample ID : **W13/007509**

Beach E1: Waitpinga Beach Visit: 1

Comments:

Location: Shore Upper

Local Date Time: 22/11/2014 12:10:36 PM

Type: Waxy Bitumen

Family: Type III waxy bitumen (no botryococcane, low

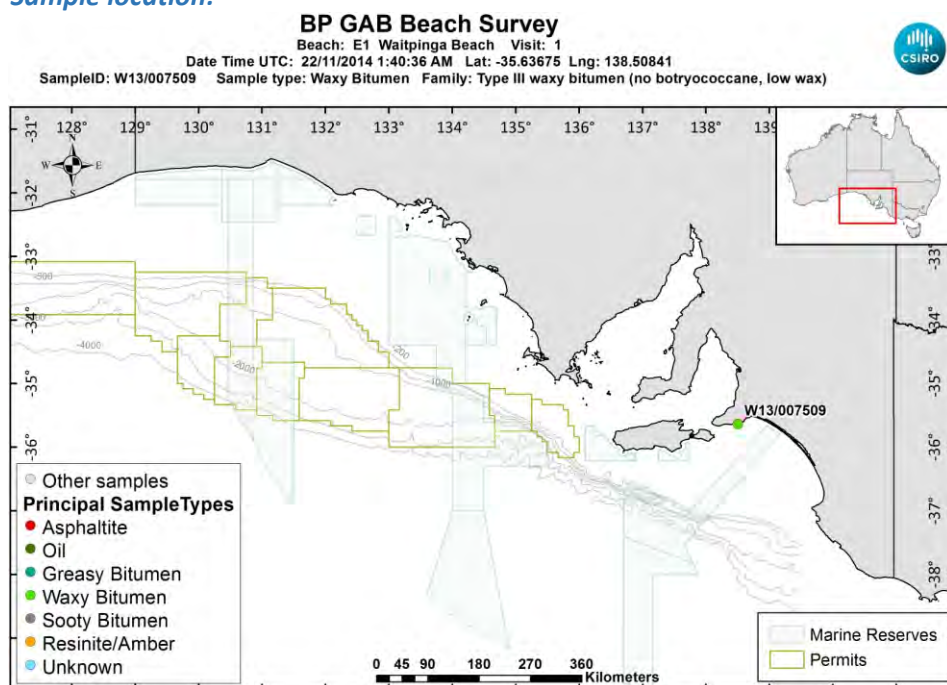
Size (cm): 4

Latitude (Y): -35.636753

Weight (gm): 6.49072

Longitude (X): 138.508408

Sample location:



[LinkedFiles\GAB_BCH1\SampleLocations\W13_007509_Location.jpg](#)

Sample - field image:



[LinkedFiles\GAB_BCH1\Samples\W13_007509_146A0540.JPG](#)

Sample - laboratory image:



[LinkedFiles\GAB_BCH1\Samples\W13_007509_Photo01.JPG](#)

Analyses Requested

Split:	Analysis:	Sent:
1	Bitumen Determination	YES
2	Whole Oils	YES
3	Elemental CHNS	YES

Analyses Completed:

Analysis:	Instrument/Type:
Elemental CHNS	Elemental Analyser Run: 1
Whole Oils	GCMS with Full Scan Run: 2
Whole Oils	GCMS with Full Scan Run: 1

Sample Analyses Completed:

Results for: Elemental Analyser

Unique ID: W13/007509_UNK_ELEM-AN/01

Instrument / Type: Elemental Analyser Run: 1

for Analysis: Elemental CHNS

Preparation: Unknown

Analysis Date:

Method ID/s:

Linked Image: [None available](#)

Sample Volume:

Volume Units:

Extract Volume:

Dilution Factor:

Comment: Sulphur isotope peak was very small. Result may not be an accurate value. Sulphur isotope peak was very small. Result may not be an accurate value.

Data Sheet:

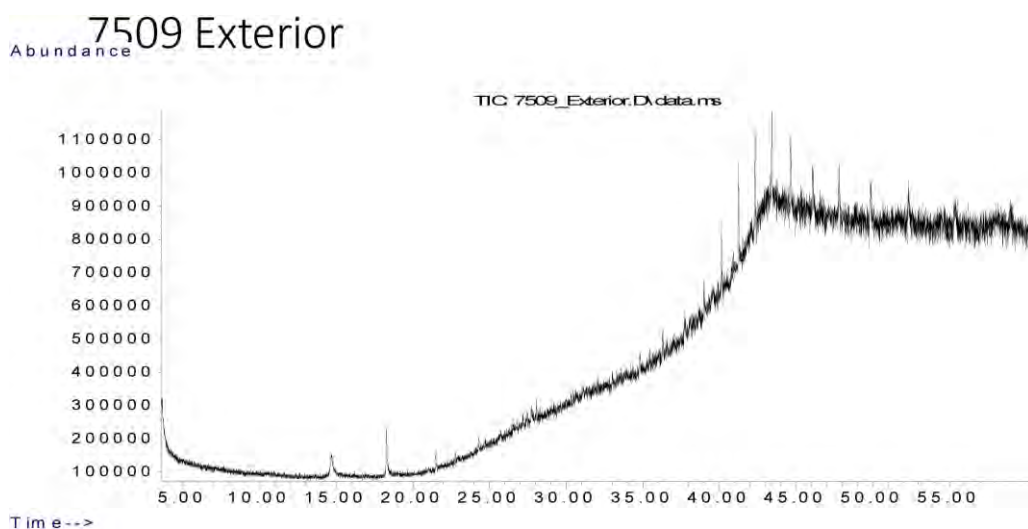
Type:	Compound / Variable:	Retentn Time:	Target Respns:	Value:	units:	Qualifier:
Inorg	Carbon			86.37	percent	Y
Inorg	delta13 Carbon			-29.4043810509091	per mille	Y
Inorg	delta34 Sulphur			0.438837672508047	per mille	Y
Inorg	Hydrogen			12.6	percent	Y
Inorg	Nitrogen			0.1	percent	Y
Inorg	Sulphur			1.5	percent	Y

Results for: GCMS with Full Scan

Unique ID: W13/007509_DISS_GCMS-Scan/01

Results for: GCMS with Full Scan**Instrument / Type:** GCMS with Full Scan Run: 1**for Analysis:** Whole Oils**Preparation:** Dissolved in solvent**Analysis Date:** 18/11/2016**Method ID/s:****Linked Image:** [LinkedFiles\GAB_BCH1\GCMS\W13_007509_ext_WholeOil.jpg](#)**Sample Volume:****Volume Units:****Extract Volume:****Dilution Factor:****Comment:** Exterior

Results for: GCMS with Full Scan



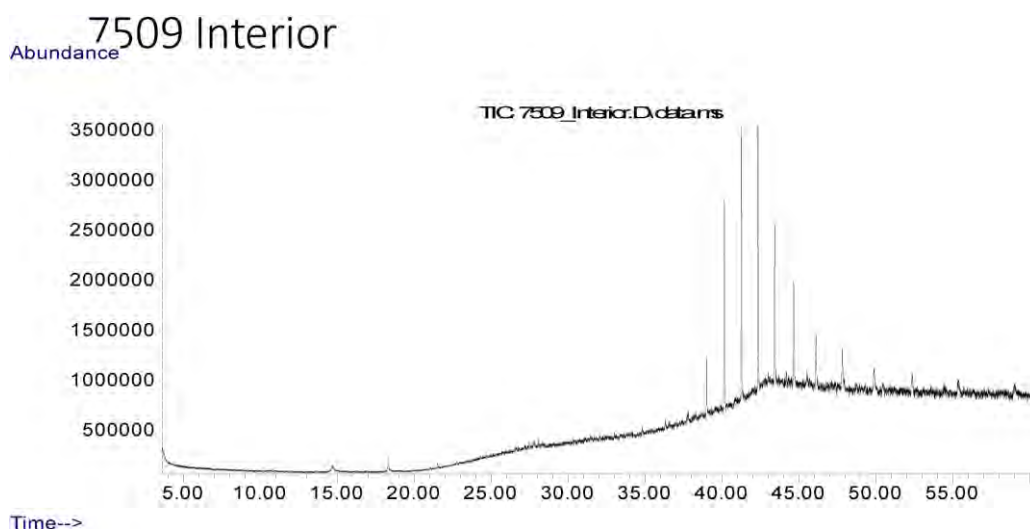
Data Sheet:

(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Respse:	Value:	units:	Qualifier:
Aliph	Botryococcane	39.4780			ug/L	U
Aliph	nC10	7.5100			ug/L	U
Aliph	nC11	9.9450			ug/L	U
Aliph	nC12	12.3690			ug/L	U
Aliph	nC13	14.7030			ug/L	U
Aliph	nC14	16.9230			ug/L	U
Aliph	nC15	19.0270			ug/L	U
Aliph	nC16	21.0200			ug/L	U
Aliph	nC17	22.9150			ug/L	U
Aliph	nC18	24.7150			ug/L	U
Aliph	nC19	26.4300			ug/L	U
Aliph	nC20	28.0680			ug/L	U
Aliph	nC21	29.6330			ug/L	U
Aliph	nC22	31.1340			ug/L	U
Aliph	nC23	32.5720			ug/L	U
Aliph	nC24	33.9520			ug/L	U
Aliph	nC25	35.2810			ug/L	U
Aliph	nC26	36.5600			ug/L	U
Aliph	nC27	37.7930			ug/L	U
Aliph	nC28	38.9870	463130		ug/L	Z
Aliph	nC29	40.1370	1086293		ug/L	Z
Aliph	nC30	41.2480	1477297		ug/L	Z
Aliph	nC31	42.3270	1849485		ug/L	Z
Aliph	nC32	43.4130	1580199		ug/L	Z
Aliph	nC33	44.6430	1474230		ug/L	Z
Aliph	nC34	46.0860	1214968		ug/L	Z
Aliph	nC35	47.8060	759452		ug/L	Z
Aliph	nC36	49.8090	1124236		ug/L	Z
Aliph	nC37	52.2960	1633628		ug/L	Z
Aliph	nC38	55.2370			ug/L	U
Aliph	nC39	58.8850			ug/L	U
Aliph	Norpristane	21.9070			ug/L	U
Aliph	Phytane	24.8210			ug/L	U
Aliph	Pristane	22.9640			ug/L	U

Results for: GCMS with Full Scan**Results for: GCMS with Full Scan****Unique ID:** W13/007509 DISS GCMS-Scan/02**Instrument / Type:** GCMS with Full Scan Run: 2**for Analysis:** Whole Oils**Preparation:** Dissolved in solvent**Analysis Date:** 18/11/2016**Method ID/s:****Linked Image:** [LinkedFiles\GAB_BCH1\GCMS\W13_007509_int_WholeOil.jpg](#)**Sample Volume:****Volume Units:****Extract Volume:****Dilution Factor:****Comment:** Interior

Results for: GCMS with Full Scan



Data Sheet:

(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Respse:	Value:	units:	Qualifier:
Aliph	Botryococcane	39.4780			ug/L	U
Aliph	nC10	7.5100			ug/L	U
Aliph	nC11	9.9450			ug/L	U
Aliph	nC12	12.3690			ug/L	U
Aliph	nC13	14.7030			ug/L	U
Aliph	nC14	16.9230			ug/L	U
Aliph	nC15	19.0270			ug/L	U
Aliph	nC16	21.0200			ug/L	U
Aliph	nC17	22.9150			ug/L	U
Aliph	nC18	24.7150			ug/L	U
Aliph	nC19	26.4300			ug/L	U
Aliph	nC20	28.0680			ug/L	U
Aliph	nC21	29.6330			ug/L	U
Aliph	nC22	31.1340			ug/L	U
Aliph	nC23	32.5720			ug/L	U
Aliph	nC24	33.9520			ug/L	U
Aliph	nC25	35.2810			ug/L	U
Aliph	nC26	36.5600			ug/L	U
Aliph	nC27	37.7930			ug/L	U
Aliph	nC28	38.9870	3245428		ug/L	Z
Aliph	nC29	40.1370	11583999		ug/L	Z
Aliph	nC30	41.2480	14488073		ug/L	Z
Aliph	nC31	42.3270	15761513		ug/L	Z
Aliph	nC32	43.4130	10625244		ug/L	Z
Aliph	nC33	44.6430	7588928		ug/L	Z
Aliph	nC34	46.0860	4676610		ug/L	Z
Aliph	nC35	47.8060	3786251		ug/L	Z
Aliph	nC36	49.8090	2888917		ug/L	Z
Aliph	nC37	52.2960	2200540		ug/L	Z
Aliph	nC38	55.2370	2477231		ug/L	Z
Aliph	nC39	58.8850			ug/L	U
Aliph	Norpristane	21.9070			ug/L	U
Aliph	Phytane	24.8210			ug/L	U
Aliph	Pristane	22.9640			ug/L	U

Results for: GCMS with Full Scan**Qualifier codes:**

A	TIC is a possible aldol-condensation product
B	Analyte was also detected in the blank
D	Compound quantitated on a diluted sample
E	Inorganics: Estimated due to interference Organics: Concentration exceeds the calibration range of the instrument
J	Estimated - Result is \geq the Method Detection Limit (MDL) and $<$ the Limit of Quantitation (LOQ)
M	Duplicate injection precision not met
N	Spike sample not within control limits
O	Presumptive evidence of a compound
P	Concentration difference between primary and confirmation columns $> 25\%$
R	Spike/Surrogate failed recovery limits
S	Method of standard additions (MSA) used for calculation
T	Detected but Quantitated amount exceeded maximum
U	Compound Not Detected
V	overloaded and possibly not a water extract
X	Duplicate analysis not within control limits
Y	Detected
Z	Detected but not Quantified (too small)

Sample ID : **W13/007510**

Beach E1: Waitpinga Beach Visit: 1

Comments:

Location: Shore Upper

Local Date Time: 22/11/2014 12:17:10 PM

Type: Waxy Bitumen

Family: Type III waxy bitumen (no botryococcane, low

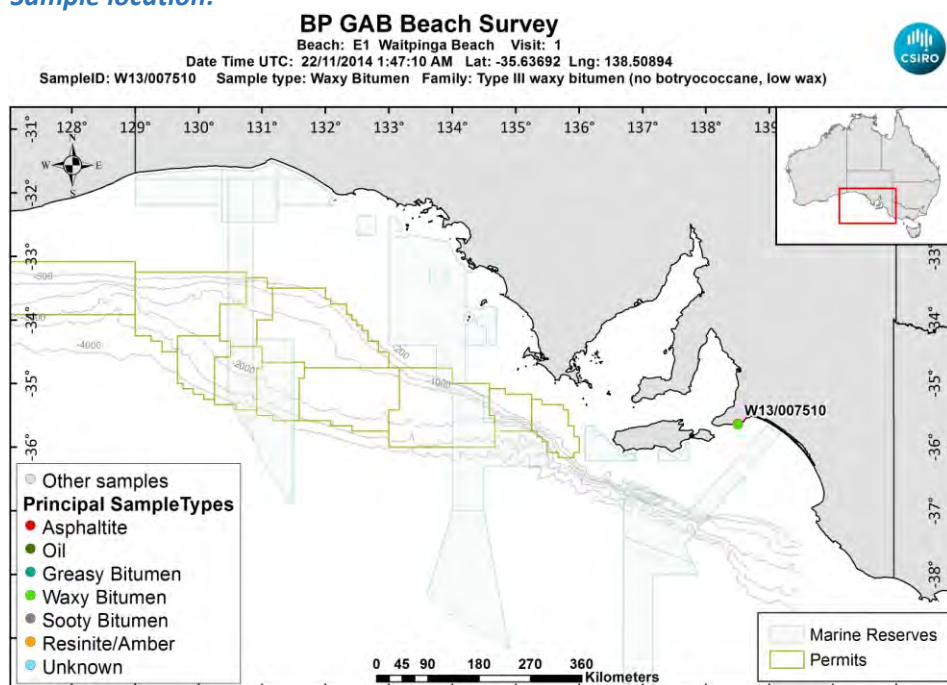
Size (cm): 1

Latitude (Y): -35.636924

Weight (gm): 1.68972

Longitude (X): 138.508942

Sample location:



[LinkedFiles\GAB_BCH1\SampleLocations\W13_007510_Location.jpg](#)

Sample - field image:



[LinkedFiles\GAB_BCH1\Samples\W13_007510_146A0542.JPG](#)

Sample - laboratory image:



LinkedFiles\GAB BCH1\Samples\W13_007510_Photo01.JPG

Analyses Requested

Split:	Analysis:	Sent:
1	Bitumen Determination	YES
2	Whole Oils	YES
3	Elemental CHNS	YES

Analyses Completed:

Analysis:	Instrument/Type:
Elemental CHNS	Elemental Analyser Run: 1
Whole Oils	GCMS with Full Scan Run: 2
Whole Oils	GCMS with Full Scan Run: 1

Sample Analyses Completed:

Results for: Elemental Analyser

Unique ID: W13/007510_UNK_ELEM-AN/01

Instrument / Type: Elemental Analyser Run: 1

for Analysis: Elemental CHNS

Analysis Date:

Linked Image: [None available](#)

Preparation: Unknown

Method ID/s:

Sample Volume:

Volume Units:

Extract Volume:

Dilution Factor:

Comment:

Data Sheet:

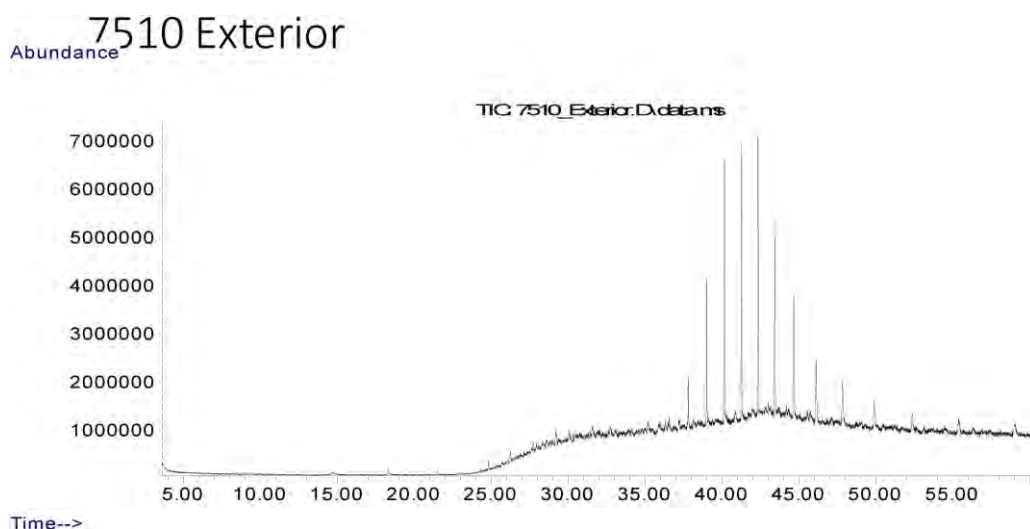
Type:	Compound / Variable:	Retentn Time:	Target Respse:	Value:	units:	Qualifier:
Inorg	Carbon			85.06	percent	Y
Inorg	delta13 Carbon				per mille	U
Inorg	delta34 Sulphur				per mille	U
Inorg	Hydrogen			7.58	percent	Y
Inorg	Nitrogen			0.16	percent	Y
Inorg	Sulphur			0.93	percent	Y

Results for: GCMS with Full Scan

Unique ID: W13/007510_DISS_GCMS-Scan/01

Results for: GCMS with Full Scan**Instrument / Type:** GCMS with Full Scan Run: 1**for Analysis:** Whole Oils**Preparation:** Dissolved in solvent**Analysis Date:** 18/11/2016**Method ID/s:****Linked Image:** [LinkedFiles\GAB_BCH1\GCMS\W13_007510_ext_WholeOil.jpg](#)**Sample Volume:****Volume Units:****Extract Volume:****Dilution Factor:****Comment:** Exterior

Results for: GCMS with Full Scan



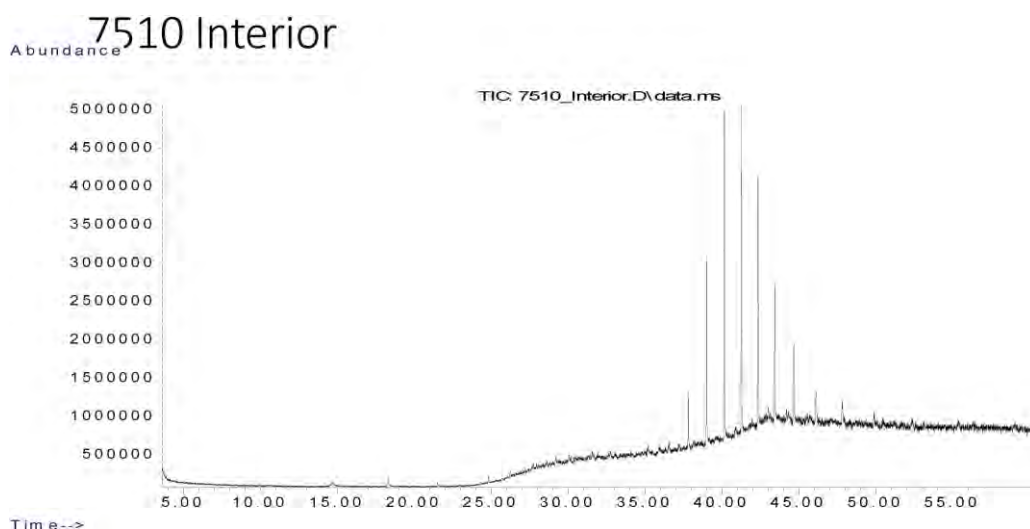
Data Sheet:

(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Respse:	Value:	units:	Qualifier:
Aliph	Botryococcane	39.4780			ug/L	U
Aliph	nC10	7.5100			ug/L	U
Aliph	nC11	9.9450			ug/L	U
Aliph	nC12	12.3690			ug/L	U
Aliph	nC13	14.7030			ug/L	U
Aliph	nC14	16.9230			ug/L	U
Aliph	nC15	19.0270			ug/L	U
Aliph	nC16	21.0200			ug/L	U
Aliph	nC17	22.9150			ug/L	U
Aliph	nC18	24.7150			ug/L	U
Aliph	nC19	26.4300			ug/L	U
Aliph	nC20	28.0680			ug/L	U
Aliph	nC21	29.6330			ug/L	U
Aliph	nC22	31.1340			ug/L	U
Aliph	nC23	32.5720			ug/L	U
Aliph	nC24	33.9520			ug/L	U
Aliph	nC25	35.2810			ug/L	U
Aliph	nC26	36.5600			ug/L	U
Aliph	nC27	37.7930	6162690		ug/L	Z
Aliph	nC28	38.9870	16922835		ug/L	Z
Aliph	nC29	40.1370	30850551		ug/L	Z
Aliph	nC30	41.2480	34304590		ug/L	Z
Aliph	nC31	42.3270	35318959		ug/L	Z
Aliph	nC32	43.4130	25230408		ug/L	Z
Aliph	nC33	44.6430	18462193		ug/L	Z
Aliph	nC34	46.0860	11285315		ug/L	Z
Aliph	nC35	47.8060	9214468		ug/L	Z
Aliph	nC36	49.8090	6625725		ug/L	Z
Aliph	nC37	52.2960	4750230		ug/L	Z
Aliph	nC38	55.2370	4780360		ug/L	Z
Aliph	nC39	58.8850	883108		ug/L	Z
Aliph	Norpristane	21.9070			ug/L	U
Aliph	Phytane	24.8210			ug/L	U
Aliph	Pristane	22.9640			ug/L	U

Results for: GCMS with Full Scan**Results for: GCMS with Full Scan****Unique ID:** W13/007510 DISS GCMS-Scan/02**Instrument / Type:** GCMS with Full Scan Run: 2**for Analysis:** Whole Oils**Preparation:** Dissolved in solvent**Analysis Date:** 18/11/2016**Method ID/s:****Linked Image:** [LinkedFiles\GAB_BCH1\GCMS\W13_007510_int_WholeOil.jpg](#)**Sample Volume:****Volume Units:****Extract Volume:****Dilution Factor:****Comment:** Interior

Results for: GCMS with Full Scan



Data Sheet:

(default units ppb)

Type:	Compound / Variable:	Retention Time:	Target Response:	Value:	units:	Qualifier:
Aliph	Botryococcane	39.4780			ug/L	U
Aliph	nC10	7.5100			ug/L	U
Aliph	nC11	9.9450			ug/L	U
Aliph	nC12	12.3690			ug/L	U
Aliph	nC13	14.7030			ug/L	U
Aliph	nC14	16.9230			ug/L	U
Aliph	nC15	19.0270			ug/L	U
Aliph	nC16	21.0200			ug/L	U
Aliph	nC17	22.9150			ug/L	U
Aliph	nC18	24.7150			ug/L	U
Aliph	nC19	26.4300			ug/L	U
Aliph	nC20	28.0680			ug/L	U
Aliph	nC21	29.6330			ug/L	U
Aliph	nC22	31.1340			ug/L	U
Aliph	nC23	32.5720			ug/L	U
Aliph	nC24	33.9520			ug/L	U
Aliph	nC25	35.2810			ug/L	U
Aliph	nC26	36.5600			ug/L	U
Aliph	nC27	37.7930	4150580		ug/L	Z
Aliph	nC28	38.9870	13564079		ug/L	Z
Aliph	nC29	40.1370	23914724		ug/L	Z
Aliph	nC30	41.2480	23262585		ug/L	Z
Aliph	nC31	42.3270	18410207		ug/L	Z
Aliph	nC32	43.4130	11448557		ug/L	Z
Aliph	nC33	44.6430	6951679		ug/L	Z
Aliph	nC34	46.0860	3933932		ug/L	Z
Aliph	nC35	47.8060	2070926		ug/L	Z
Aliph	nC36	49.8090	2146465		ug/L	Z
Aliph	nC37	52.2960	1355351		ug/L	Z
Aliph	nC38	55.2370	333241		ug/L	Z
Aliph	nC39	58.8850			ug/L	U
Aliph	Norpristane	21.9070			ug/L	U
Aliph	Phytane	24.8210			ug/L	U
Aliph	Pristane	22.9640			ug/L	U

Results for: GCMS with Full Scan**Qualifier codes:**

A	TIC is a possible aldol-condensation product
B	Analyte was also detected in the blank
D	Compound quantitated on a diluted sample
E	Inorganics: Estimated due to interference Organics: Concentration exceeds the calibration range of the instrument
J	Estimated - Result is \geq the Method Detection Limit (MDL) and $<$ the Limit of Quantitation (LOQ)
M	Duplicate injection precision not met
N	Spike sample not within control limits
O	Presumptive evidence of a compound
P	Concentration difference between primary and confirmation columns $> 25\%$
R	Spike/Surrogate failed recovery limits
S	Method of standard additions (MSA) used for calculation
T	Detected but Quantitated amount exceeded maximum
U	Compound Not Detected
V	overloaded and possibly not a water extract
X	Duplicate analysis not within control limits
Y	Detected
Z	Detected but not Quantified (too small)

Sample ID : **W13/007511**

Beach E1: Waitpinga Beach Visit: 1

Comments:

Location: Upper Intertidal

Local Date Time: 22/11/2014 12:25:38 PM

Type: Waxy Bitumen

Family: Type I waxy bitumen (high botryococcane)

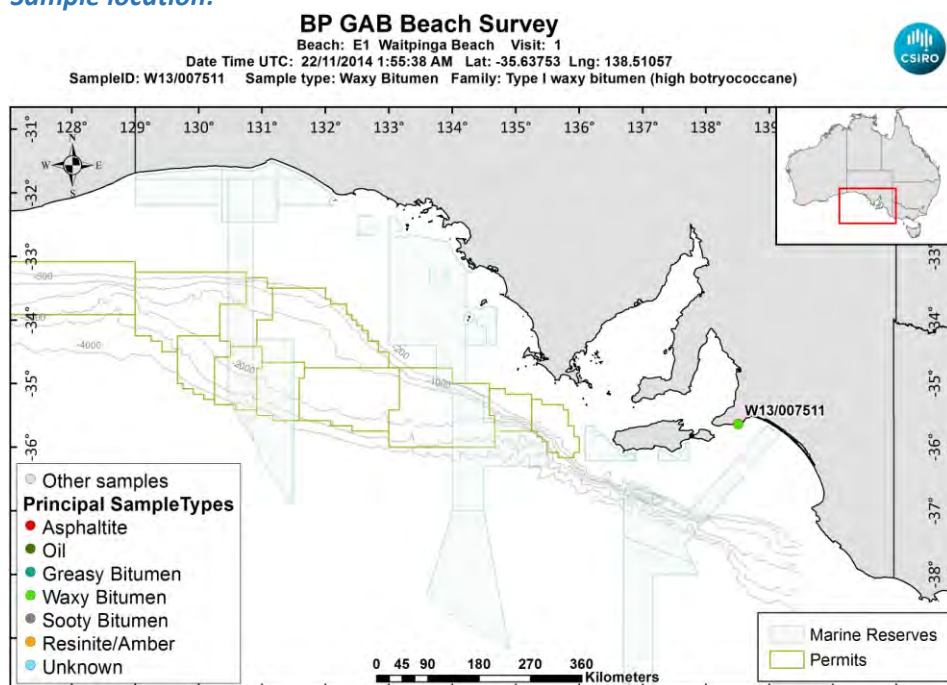
Size (cm): 4

Latitude (Y): -35.637527

Weight (gm): 10.50171

Longitude (X): 138.510565

Sample location:



[LinkedFiles\GAB_BCH1\SampleLocations\W13_007511_Location.jpg](#)

Sample - field image:



[LinkedFiles\GAB_BCH1\Samples\W13_007511_146A0544.JPG](#)

Sample - laboratory image:



[LinkedFiles\GAB_BCH1\Samples\W13_007511_Photo01.JPG](#)

Analyses Requested

Split:	Analysis:	Sent:
1	Bitumen Determination	YES
2	Whole Oils	YES
3	Elemental CHNS	YES
4	Biomarkers	YES

Analyses Completed:

Analysis:	Instrument/Type:
Biomarkers	Gas Chromatography Mass Spectrometry Run: 2
Biomarkers	Gas Chromatography Mass Spectrometry Run: 1
Elemental CHNS	Elemental Analyser Run: 1
Whole Oils	GCMS with Full Scan Run: 2
Whole Oils	GCMS with Full Scan Run: 1

Sample Analyses Completed:

Results for: Gas Chromatography Mass Spectrometry

Unique ID: W13/007511 DISS GC-MS/01

Instrument / Type: Gas Chromatography Mass Spectrometry Run: 1

for Analysis: Biomarkers

Preparation: Dissolved in solvent

Analysis Date: 18/07/2017

Method ID/s:

Linked Image: [None available](#)

Sample Volume:

Volume Units:

Extract Volume:

Dilution Factor:

Comment: External Ratios only

Results for: Gas Chromatography Mass Spectrometry

Data Sheet:

(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Respnse:	Value:	units:	Qualifier:
BiomRatio	% C27 aaa 20R			40.8765347064009	ratio	Y
BiomRatio	% C27 abb 20(R+S)			48.5737679241991	ratio	Y
BiomRatio	% C28 aaa 20R			17.8163217139582	ratio	Y
BiomRatio	% C28 abb 20(R+S)			19.6890188852711	ratio	Y
BiomRatio	% C29 aaa 20R			41.307143579641	ratio	Y
BiomRatio	% C29 abb 20(R+S)			31.7372131905297	ratio	Y
BiomRatio	(C21+C22)/(C27+C28+C29)			5.55723399921075E-02	ratio	Y
BiomRatio	25-Nor/C30H			8.34813135694879E-02	ratio	Y
BiomRatio	C19t/C23t			2.48959523318253E-02	ratio	Y
BiomRatio	C22t/C21t			0.367051812100138	ratio	Y
BiomRatio	C22t/C24t			0.195205471140848	ratio	Y
BiomRatio	C23t/C30H			6.55745224729205E-02	ratio	Y
BiomRatio	C24t/C23t			1.0368356424283	ratio	Y
BiomRatio	C24Tet/C23t			0.463614769484719	ratio	Y
BiomRatio	C24Tet/C26t			0.284837288397619	ratio	Y
BiomRatio	C24Tet/C30H			3.04013171203536E-02	ratio	Y
BiomRatio	C26t/C25t			2.08459555269094	ratio	Y
BiomRatio	C27 Dia/(Dia+Reg)			0.691070714656834	ratio	Y
BiomRatio	C27 Dia/Ster			1.06799361041864	ratio	Y
BiomRatio	C28BNH/C30H			2.97177094804483E-02	ratio	Y
BiomRatio	C29/C27 abb Sterane Ratio			0.653381743826351	ratio	Y
BiomRatio	C29H/C30H			0.658936713739837	ratio	Y
BiomRatio	C29Ts/(C29Ts+C29H)			0.307596533372402	ratio	Y
BiomRatio	C30DiaH/C30H			0.172088611918434	ratio	Y
BiomRatio	C30Ts/C30H			0	ratio	U
BiomRatio	C35 Homohopane Index			4.49788537054193E-02	ratio	Y
BiomRatio	C35HS/C34HS			0.474533273125098	ratio	Y
BiomRatio	Gam/C30H			3.68469963009616E-02	ratio	Y
BiomRatio	Gam/C31HR			0.191907125995045	ratio	Y
BiomRatio	Ole/C30H			0.131036182859021	ratio	Y
BiomRatio	Sterane/hopane			6.39998221544641E-02	ratio	Y
BiomRatio	Steranes/Terpanes			5.60018067823638E-02	ratio	Y
BiomRatio	Tricyclic/Pentacyclic Terpanes			0.142817095226632	ratio	Y

Results for: Gas Chromatography Mass Spectrometry

Unique ID: W13/007511 DISS GC-MS/02

Instrument / Type: Gas Chromatography Mass Spectrometry Run: 2

for Analysis: Biomarkers

Preparation: Dissolved in solvent

Analysis Date: 18/07/2017

Method ID/s:

Linked Image: [None available](#)

Sample Volume:

Volume Units:

Extract Volume:

Dilution Factor:

Comment: Internal Ratios only

Results for: Gas Chromatography Mass Spectrometry

Data Sheet:

(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Rspnse:	Value:	units:	Qualifier:
BiomRatio	% C27 aaa 20R			42.7545163659906	ratio	Y
BiomRatio	% C27 abb 20(R+S)			49.528552097429	ratio	Y
BiomRatio	% C28 aaa 20R			16.8895280070718	ratio	Y
BiomRatio	% C28 abb 20(R+S)			20.8798917456022	ratio	Y
BiomRatio	% C29 aaa 20R			40.3559556269376	ratio	Y
BiomRatio	% C29 abb 20(R+S)			29.5915561569689	ratio	Y
BiomRatio	(C21+C22)/(C27+C28+C29)			5.88918286744124E-02	ratio	Y
BiomRatio	25-Nor/C30H			6.43224686605465E-02	ratio	Y
BiomRatio	C19t/C23t			1.97457653849793E-02	ratio	Y
BiomRatio	C22t/C21t			0.414496649681018	ratio	Y
BiomRatio	C22t/C24t			0.176612386203359	ratio	Y
BiomRatio	C23t/C30H			7.82076358089238E-02	ratio	Y
BiomRatio	C24t/C23t			0.922507333690818	ratio	Y
BiomRatio	C24Tet/C23t			0.41656152414598	ratio	Y
BiomRatio	C24Tet/C26t			0.446364442942245	ratio	Y
BiomRatio	C24Tet/C30H			0.032578291972419	ratio	Y
BiomRatio	C26t/C25t			1.70881735024655	ratio	Y
BiomRatio	C27 Dia/(Dia+Reg)			0.675050645115861	ratio	Y
BiomRatio	C27 Dia/Ster			0.978976127016745	ratio	Y
BiomRatio	C28BNH/C30H			1.31799465734513E-02	ratio	Y
BiomRatio	C29/C27 abb Sterane Ratio			0.597464591711838	ratio	Y
BiomRatio	C29H/C30H			0.579394669741227	ratio	Y
BiomRatio	C29Ts/(C29Ts+C29H)			0.316550379053244	ratio	Y
BiomRatio	C30DiaH/C30H			0.138449877688788	ratio	Y
BiomRatio	C30Ts/C30H			4.61739085655468E-03	ratio	Y
BiomRatio	C35 Homohopane Index			4.97400125917454E-02	ratio	Y
BiomRatio	C35HS/C34HS			0.465830960483367	ratio	Y
BiomRatio	Gam/C30H			2.72479715272204E-02	ratio	Y
BiomRatio	Gam/C31HR			0.145950052854123	ratio	Y
BiomRatio	Ole/C30H			9.80250431936039E-02	ratio	Y
BiomRatio	Sterane/hopane			8.54230706879426E-02	ratio	Y
BiomRatio	Steranes/Terpanes			0.074971556172606	ratio	Y
BiomRatio	Tricyclic/Pentacyclic Terpanes			0.139406396891032	ratio	Y

Results for: Elemental Analyser

Unique ID: W13/007511_UNK_ELEM-AN/01

Instrument / Type: Elemental Analyser Run: 1

for Analysis: Elemental CHNS

Preparation: Unknown

Analysis Date:

Method ID/s:

Linked Image: [None available](#)

Sample Volume:

Volume Units:

Extract Volume:

Dilution Factor:

Comment:

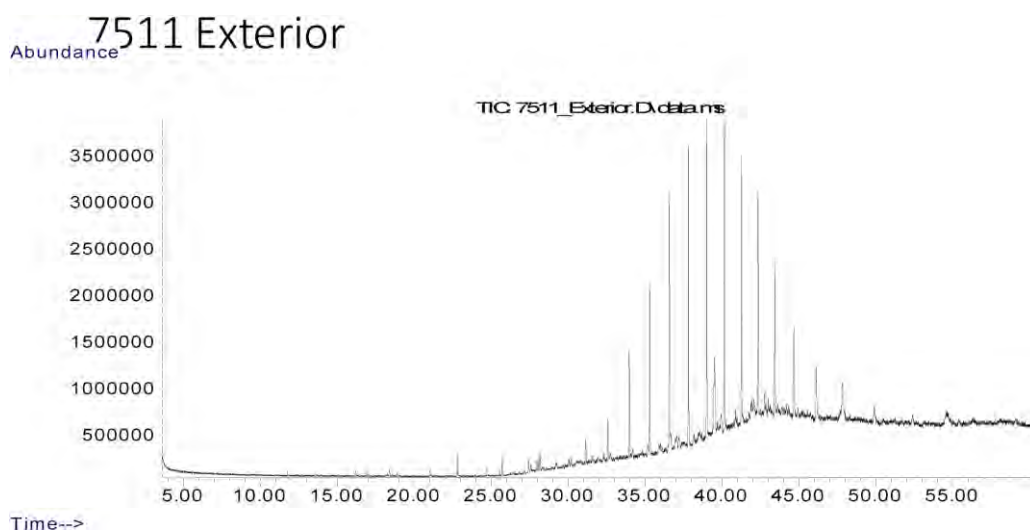
Results for: Elemental Analyser**Data Sheet:**

(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Respse:	Value:	units:	Qualifier:
Inorg	Carbon			86.16	percent	Y
Inorg	delta13 Carbon		-25.6326864325243		per mille	Y
Inorg	delta34 Sulphur			3.94	per mille	Y
Inorg	Hydrogen			8.58	percent	Y
Inorg	Nitrogen			0.23	percent	Y
Inorg	Sulphur			1.02	percent	Y

Results for: GCMS with Full Scan**Unique ID:** W13/007511_DISS_GCMS-Scan/01**Instrument / Type:** GCMS with Full Scan Run: 1**for Analysis:** Whole Oils**Preparation:** Dissolved in solvent**Analysis Date:** 18/11/2016**Method ID/s:****Linked Image:** [LinkedFiles\GAB_BCH1\GCMS\W13_007511_ext_WholeOil.jpg](#)**Sample Volume:****Volume Units:****Extract Volume:****Dilution Factor:****Comment:** Exterior

Results for: GCMS with Full Scan



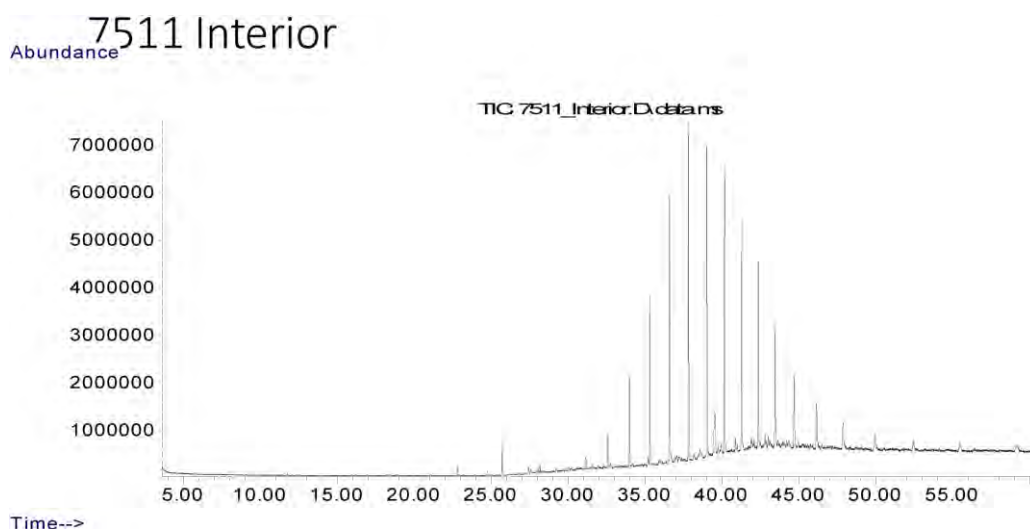
Data Sheet:

(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Respse:	Value:	units:	Qualifier:
Aliph	Botryococcane	39.4780	8198954		ug/L	Z
Aliph	nC10	7.5100			ug/L	U
Aliph	nC11	9.9450			ug/L	U
Aliph	nC12	12.3690			ug/L	U
Aliph	nC13	14.7030			ug/L	U
Aliph	nC14	16.9230			ug/L	U
Aliph	nC15	19.0270			ug/L	U
Aliph	nC16	21.0200			ug/L	U
Aliph	nC17	22.9150			ug/L	U
Aliph	nC18	24.7150			ug/L	U
Aliph	nC19	26.4300			ug/L	U
Aliph	nC20	28.0680			ug/L	U
Aliph	nC21	29.6330			ug/L	U
Aliph	nC22	31.1340	1344262		ug/L	Z
Aliph	nC23	32.5720	2235790		ug/L	Z
Aliph	nC24	33.9520	6092839		ug/L	Z
Aliph	nC25	35.2810	10043091		ug/L	Z
Aliph	nC26	36.5600	13562076		ug/L	Z
Aliph	nC27	37.7930	17667912		ug/L	Z
Aliph	nC28	38.9870	17498190		ug/L	Z
Aliph	nC29	40.1370	16741726		ug/L	Z
Aliph	nC30	41.2480	15023829		ug/L	Z
Aliph	nC31	42.3270	12515400		ug/L	Z
Aliph	nC32	43.4130	9265395		ug/L	Z
Aliph	nC33	44.6430	6703038		ug/L	Z
Aliph	nC34	46.0860	4802764		ug/L	Z
Aliph	nC35	47.8060	5018158		ug/L	Z
Aliph	nC36	49.8090	2202169		ug/L	Z
Aliph	nC37	52.2960			ug/L	U
Aliph	nC38	55.2370			ug/L	U
Aliph	nC39	58.8850			ug/L	U
Aliph	Norpristane	21.9070			ug/L	U
Aliph	Phytane	24.8210			ug/L	U
Aliph	Pristane	22.9640			ug/L	U

Results for: GCMS with Full Scan**Results for: GCMS with Full Scan****Unique ID:** W13/007511 DISS GCMS-Scan/02**Instrument / Type:** GCMS with Full Scan Run: 2**for Analysis:** Whole Oils**Preparation:** Dissolved in solvent**Analysis Date:** 18/11/2016**Method ID/s:****Linked Image:** [LinkedFiles\GAB_BCH1\GCMS\W13_007511_int_WholeOil.jpg](#)**Sample Volume:****Volume Units:****Extract Volume:****Dilution Factor:****Comment:** Interior

Results for: GCMS with Full Scan



Data Sheet:

(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Respse:	Value:	units:	Qualifier:
Aliph	Botryococcane	39.4780	8527606		ug/L	Z
Aliph	nC10	7.5100			ug/L	U
Aliph	nC11	9.9450			ug/L	U
Aliph	nC12	12.3690			ug/L	U
Aliph	nC13	14.7030			ug/L	U
Aliph	nC14	16.9230			ug/L	U
Aliph	nC15	19.0270			ug/L	U
Aliph	nC16	21.0200			ug/L	U
Aliph	nC17	22.9150			ug/L	U
Aliph	nC18	24.7150			ug/L	U
Aliph	nC19	26.4300			ug/L	U
Aliph	nC20	28.0680			ug/L	U
Aliph	nC21	29.6330			ug/L	U
Aliph	nC22	31.1340	1416370		ug/L	Z
Aliph	nC23	32.5720	3675726		ug/L	Z
Aliph	nC24	33.9520	9986365		ug/L	Z
Aliph	nC25	35.2810	19151406		ug/L	Z
Aliph	nC26	36.5600	27400097		ug/L	Z
Aliph	nC27	37.7930	34990071		ug/L	Z
Aliph	nC28	38.9870	33806035		ug/L	Z
Aliph	nC29	40.1370	32883821		ug/L	Z
Aliph	nC30	41.2480	26092818		ug/L	Z
Aliph	nC31	42.3270	21401672		ug/L	Z
Aliph	nC32	43.4130	16786088		ug/L	Z
Aliph	nC33	44.6430	11596772		ug/L	Z
Aliph	nC34	46.0860	8195644		ug/L	Z
Aliph	nC35	47.8060	6003041		ug/L	Z
Aliph	nC36	49.8090	4562392		ug/L	Z
Aliph	nC37	52.2960	1781185		ug/L	Z
Aliph	nC38	55.2370	3194966		ug/L	Z
Aliph	nC39	58.8850	2829317		ug/L	Z
Aliph	Norpristane	21.9070			ug/L	U
Aliph	Phytane	24.8210			ug/L	U
Aliph	Pristane	22.9640			ug/L	U

Results for: GCMS with Full Scan

Qualifier codes:

A	TIC is a possible aldol-condensation product
B	Analyte was also detected in the blank
D	Compound quantitated on a diluted sample
E	Inorganics: Estimated due to interference Organics: Concentration exceeds the calibration range of the instrument
J	Estimated - Result is \geq the Method Detection Limit (MDL) and $<$ the Limit of Quantitation (LOQ)
M	Duplicate injection precision not met
N	Spike sample not within control limits
O	Presumptive evidence of a compound
P	Concentration difference between primary and confirmation columns $> 25\%$
R	Spike/Surrogate failed recovery limits
S	Method of standard additions (MSA) used for calculation
T	Detected but Quantitated amount exceeded maximum
U	Compound Not Detected
V	overloaded and possibly not a water extract
X	Duplicate analysis not within control limits
Y	Detected
Z	Detected but not Quantified (too small)

Sample ID : **W13/007512**

Beach E1: Waitpinga Beach Visit: 1

Comments:

Location: Shore Upper

Local Date Time: 22/11/2014 12:30:34 PM

Type: Waxy Bitumen

Family: Type III waxy bitumen (no botryococcane, low

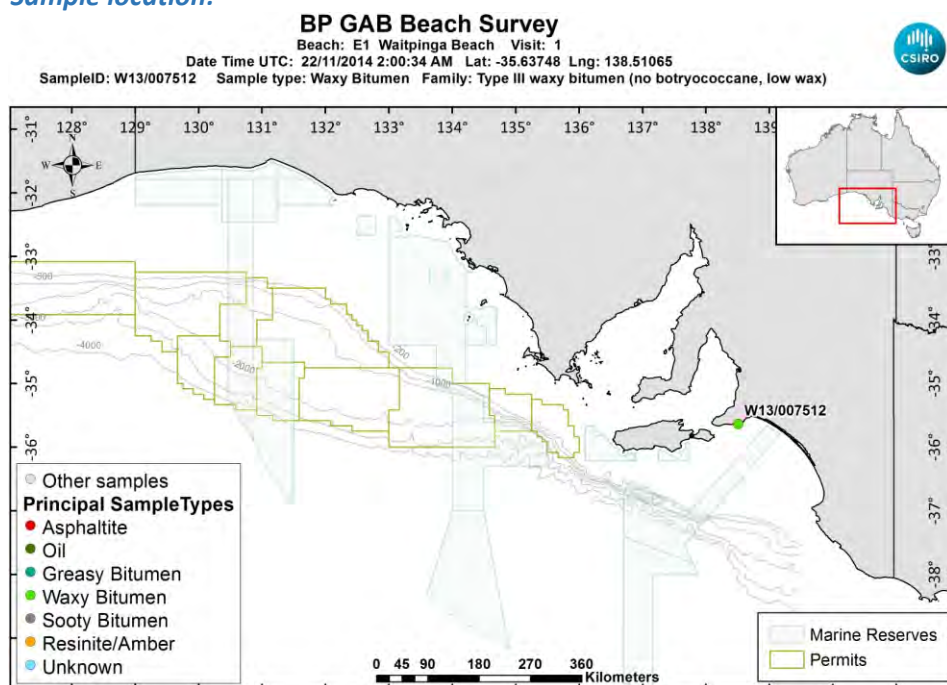
Size (cm): 3

Latitude (Y): -35.637482

Weight (gm): 2.68419

Longitude (X): 138.510647

Sample location:



[LinkedFiles\GAB_BCH1\SampleLocations\W13_007512_Location.jpg](#)

Sample - field image:



[LinkedFiles\GAB_BCH1\Samples\W13_007512_146A0547.JPG](#)

Sample - laboratory image:



[LinkedFiles\GAB_BCH1\Samples\W13_007512_Photo01.JPG](#)

Analyses Requested

Split:	Analysis:	Sent:
1	Bitumen Determination	YES
2	Whole Oils	YES
3	Elemental CHNS	YES

Analyses Completed:

Analysis:	Instrument/Type:
Elemental CHNS	Elemental Analyser Run: 1
Whole Oils	GCMS with Full Scan Run: 2
Whole Oils	GCMS with Full Scan Run: 1

Sample Analyses Completed:

Results for: Elemental Analyser

Unique ID: W13/007512_UNK_ELEM-AN/01

Instrument / Type: Elemental Analyser Run: 1

for Analysis: Elemental CHNS

Preparation: Unknown

Analysis Date:

Method ID/s:

Linked Image: [None available](#)

Sample Volume:

Volume Units:

Extract Volume:

Dilution Factor:

Comment: Sulphur isotope peak was small. May be an inaccurate value. Sulphur isotope peak was small. May be an inaccurate value.

Data Sheet:

(default units ppb)

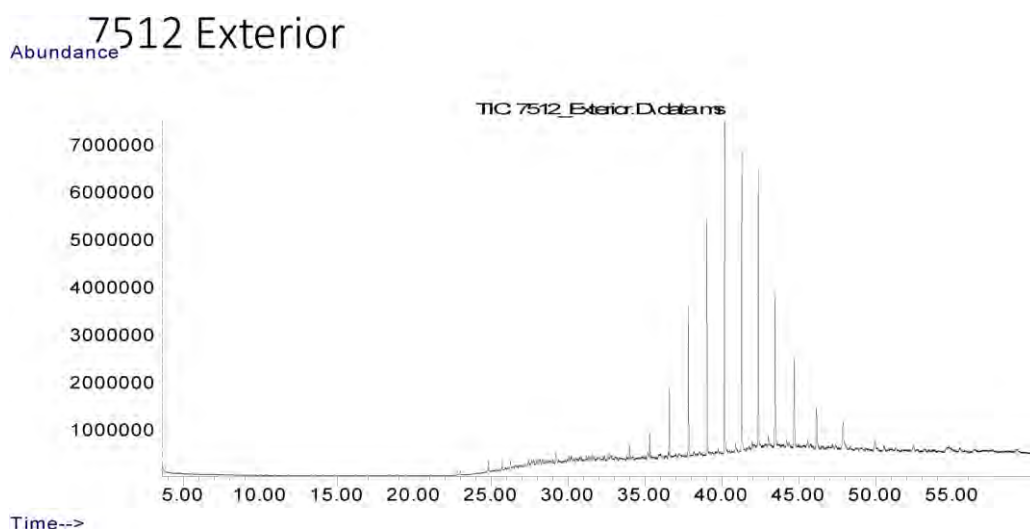
Type:	Compound / Variable:	Retentn Time:	Target Respse:	Value:	units:	Qualifier:
Inorg	Carbon			86.16	percent	Y
Inorg	delta13 Carbon		-29.2095999912932		per mille	Y
Inorg	delta34 Sulphur		-1.64786325119903		per mille	Y
Inorg	Hydrogen			8.58	percent	Y
Inorg	Nitrogen			0.23	percent	Y
Inorg	Sulphur			1.4	percent	Y

Results for: GCMS with Full Scan

Unique ID: W13/007512_DISS_GCMS-Scan/01

Results for: GCMS with Full Scan**Instrument / Type:** GCMS with Full Scan Run: 1**for Analysis:** Whole Oils**Preparation:** Dissolved in solvent**Analysis Date:** 18/11/2016**Method ID/s:****Linked Image:** [LinkedFiles\GAB_BCH1\GCMS\W13_007512_ext_WholeOil.jpg](#)**Sample Volume:****Volume Units:****Extract Volume:****Dilution Factor:****Comment:** Exterior

Results for: GCMS with Full Scan



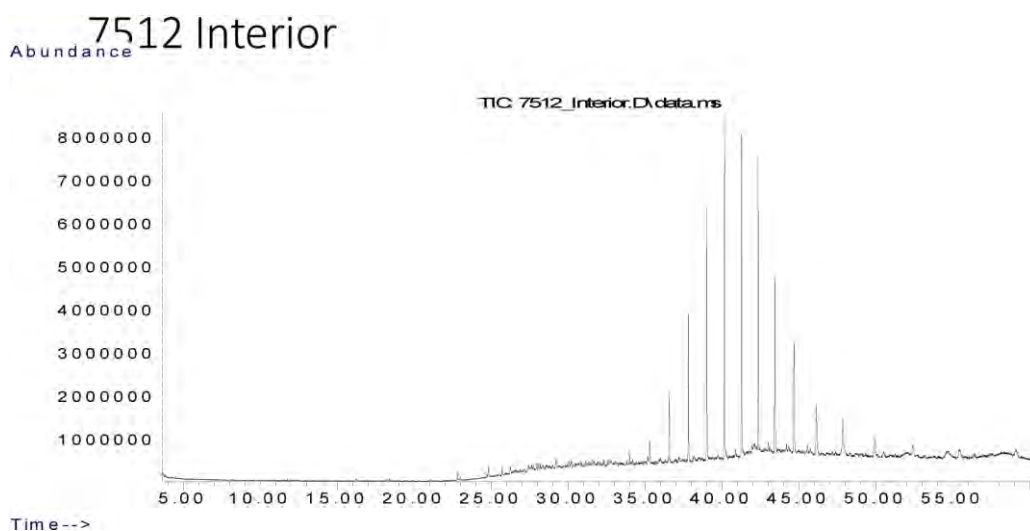
Data Sheet:

(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Respse:	Value:	units:	Qualifier:
Aliph	Botryococcane	39.4780			ug/L	U
Aliph	nC10	7.5100			ug/L	U
Aliph	nC11	9.9450			ug/L	U
Aliph	nC12	12.3690			ug/L	U
Aliph	nC13	14.7030			ug/L	U
Aliph	nC14	16.9230			ug/L	U
Aliph	nC15	19.0270			ug/L	U
Aliph	nC16	21.0200			ug/L	U
Aliph	nC17	22.9150			ug/L	U
Aliph	nC18	24.7150			ug/L	U
Aliph	nC19	26.4300			ug/L	U
Aliph	nC20	28.0680			ug/L	U
Aliph	nC21	29.6330			ug/L	U
Aliph	nC22	31.1340			ug/L	U
Aliph	nC23	32.5720			ug/L	U
Aliph	nC24	33.9520	1690309		ug/L	Z
Aliph	nC25	35.2810	2880390		ug/L	Z
Aliph	nC26	36.5600	8565669		ug/L	Z
Aliph	nC27	37.7930	16336556		ug/L	Z
Aliph	nC28	38.9870	26327322		ug/L	Z
Aliph	nC29	40.1370	35947563		ug/L	Z
Aliph	nC30	41.2480	34052388		ug/L	Z
Aliph	nC31	42.3270	31098610		ug/L	Z
Aliph	nC32	43.4130	20330230		ug/L	Z
Aliph	nC33	44.6430	13644398		ug/L	Z
Aliph	nC34	46.0860	7422488		ug/L	Z
Aliph	nC35	47.8060	5342632		ug/L	Z
Aliph	nC36	49.8090	3043535		ug/L	Z
Aliph	nC37	52.2960			ug/L	U
Aliph	nC38	55.2370			ug/L	U
Aliph	nC39	58.8850			ug/L	U
Aliph	Norpristane	21.9070			ug/L	U
Aliph	Phytane	24.8210			ug/L	U
Aliph	Pristane	22.9640			ug/L	U

Results for: GCMS with Full Scan**Results for: GCMS with Full Scan****Unique ID:** W13/007512 DISS GCMS-Scan/02**Instrument / Type:** GCMS with Full Scan Run: 2**for Analysis:** Whole Oils**Preparation:** Dissolved in solvent**Analysis Date:** 18/11/2016**Method ID/s:****Linked Image:** [LinkedFiles\GAB_BCH1\GCMS\W13_007512_int_WholeOil.jpg](#)**Sample Volume:****Volume Units:****Extract Volume:****Dilution Factor:****Comment:** Interior

Results for: GCMS with Full Scan



Data Sheet:

(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Respse:	Value:	units:	Qualifier:
Aliph	Botryococcane	39.4780			ug/L	U
Aliph	nC10	7.5100			ug/L	U
Aliph	nC11	9.9450			ug/L	U
Aliph	nC12	12.3690			ug/L	U
Aliph	nC13	14.7030			ug/L	U
Aliph	nC14	16.9230			ug/L	U
Aliph	nC15	19.0270			ug/L	U
Aliph	nC16	21.0200			ug/L	U
Aliph	nC17	22.9150			ug/L	U
Aliph	nC18	24.7150			ug/L	U
Aliph	nC19	26.4300			ug/L	U
Aliph	nC20	28.0680			ug/L	U
Aliph	nC21	29.6330			ug/L	U
Aliph	nC22	31.1340			ug/L	U
Aliph	nC23	32.5720			ug/L	U
Aliph	nC24	33.9520	1483262		ug/L	Z
Aliph	nC25	35.2810	3034527		ug/L	Z
Aliph	nC26	36.5600	8787491		ug/L	Z
Aliph	nC27	37.7930	17825503		ug/L	Z
Aliph	nC28	38.9870	29751484		ug/L	Z
Aliph	nC29	40.1370	39413608		ug/L	Z
Aliph	nC30	41.2480	39264176		ug/L	Z
Aliph	nC31	42.3270	35960115		ug/L	Z
Aliph	nC32	43.4130	24659342		ug/L	Z
Aliph	nC33	44.6430	17180888		ug/L	Z
Aliph	nC34	46.0860	9616044		ug/L	Z
Aliph	nC35	47.8060	8905315		ug/L	Z
Aliph	nC36	49.8090	5243323		ug/L	Z
Aliph	nC37	52.2960	1561286		ug/L	Z
Aliph	nC38	55.2370			ug/L	U
Aliph	nC39	58.8850			ug/L	U
Aliph	Norpristane	21.9070			ug/L	U
Aliph	Phytane	24.8210			ug/L	U
Aliph	Pristane	22.9640			ug/L	U

Results for: GCMS with Full Scan**Qualifier codes:**

A	TIC is a possible aldol-condensation product
B	Analyte was also detected in the blank
D	Compound quantitated on a diluted sample
E	Inorganics: Estimated due to interference Organics: Concentration exceeds the calibration range of the instrument
J	Estimated - Result is \geq the Method Detection Limit (MDL) and < the Limit of Quantitation (LOQ)
M	Duplicate injection precision not met
N	Spike sample not within control limits
O	Presumptive evidence of a compound
P	Concentration difference between primary and confirmation columns > 25%
R	Spike/Surrogate failed recovery limits
S	Method of standard additions (MSA) used for calculation
T	Detected but Quantitated amount exceeded maximum
U	Compound Not Detected
V	overloaded and possibly not a water extract
X	Duplicate analysis not within control limits
Y	Detected
Z	Detected but not Quantified (too small)

Sample ID : **W13/007513**

Beach E1: Waitpinga Beach Visit: 1

Comments:

Actually found 200 meters further down shore

Location: Upper Intertidal

Local Date Time: 22/11/2014 12:35:22 PM

Type: Waxy Bitumen

Family: Type III waxy bitumen (no botryococcane, low

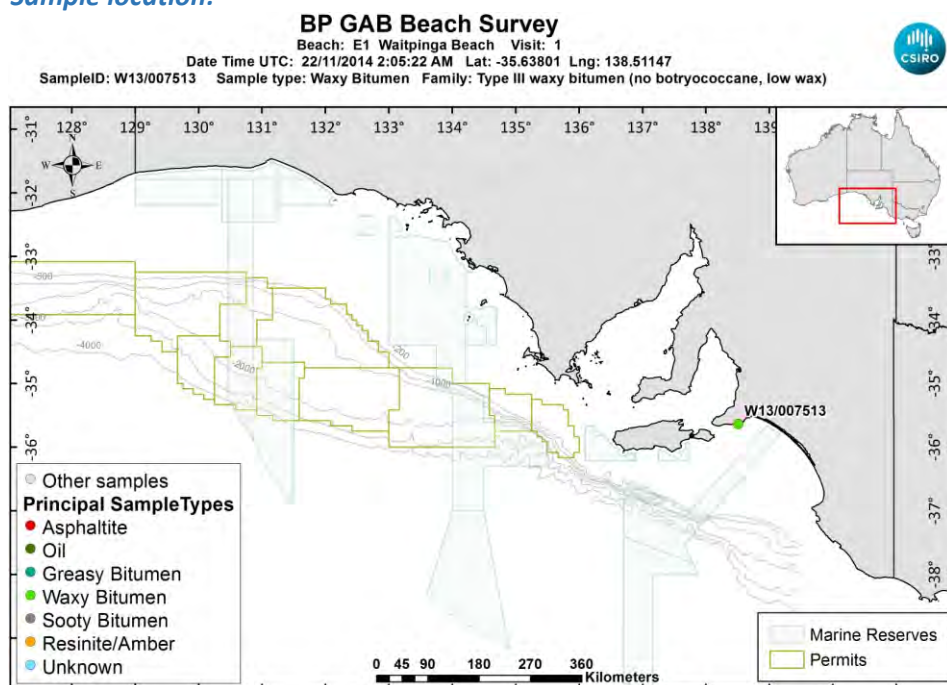
Size (cm): 3

Latitude (Y): -35.638011

Weight (gm): 10.65822

Longitude (X): 138.511472

Sample location:



[LinkedFiles\GAB_BCH1\SampleLocations\W13_007513_Location.jpg](#)

Sample - field image:



[LinkedFiles\GAB_BCH1\Samples\W13_007513_146A0550.JPG](#)

Sample - laboratory image:



[LinkedFiles\GAB_BCH1\Samples\W13_007513_Photo01.JPG](#)

Analyses Requested

Split:	Analysis:	Sent:
1	Bitumen Determination	YES
2	Whole Oils	YES
3	Elemental CHNS	YES

Analyses Completed:

Analysis:	Instrument/Type:
Elemental CHNS	Elemental Analyser Run: 1
Whole Oils	GCMS with Full Scan Run: 2
Whole Oils	GCMS with Full Scan Run: 1

Sample Analyses Completed:

Results for: Elemental Analyser

Unique ID: W13/007513_UNK_ELEM-AN/01

Instrument / Type: Elemental Analyser Run: 1

for Analysis: Elemental CHNS

Preparation: Unknown

Analysis Date:

Method ID/s:

Linked Image: [None available](#)

Sample Volume:

Volume Units:

Extract Volume:

Dilution Factor:

Comment:

Data Sheet:

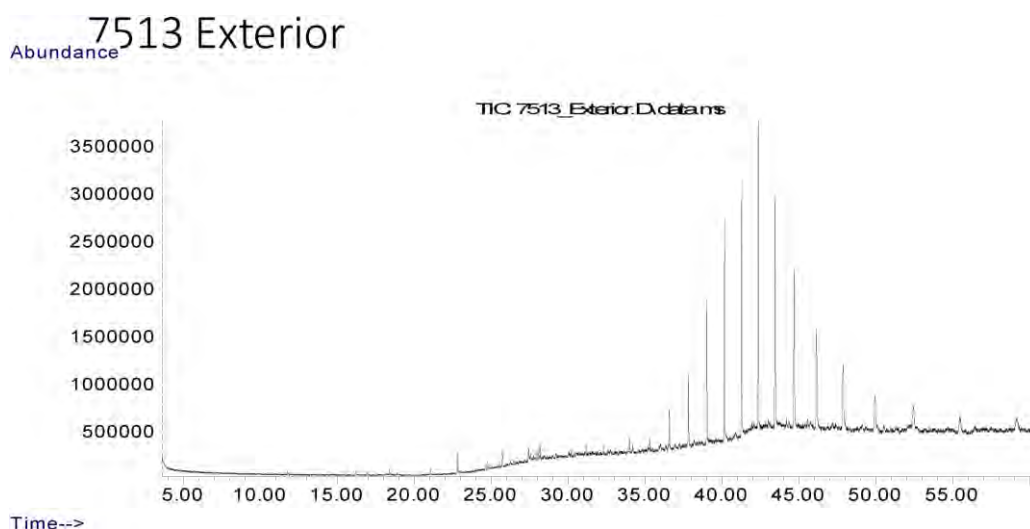
Type:	Compound / Variable:	Retentn Time:	Target Respse:	Value:	units:	Qualifier:
Inorg	Carbon			79.31	percent	Y
Inorg	delta13 Carbon			-29.1604396210164	per mille	Y
Inorg	delta34 Sulphur			5.35368350010135	per mille	Y
Inorg	Hydrogen			11.64	percent	Y
Inorg	Nitrogen			0.07	percent	Y
Inorg	Sulphur			1.43	percent	Y

Results for: GCMS with Full Scan

Unique ID: W13/007513_DISS_GCMS-Scan/01

Results for: GCMS with Full Scan**Instrument / Type:** GCMS with Full Scan Run: 1**for Analysis:** Whole Oils**Preparation:** Dissolved in solvent**Analysis Date:** 18/11/2016**Method ID/s:****Linked Image:** [LinkedFiles\GAB BCH1\GCMS\W13_007513_ext_WholeOil.jpg](#)**Sample Volume:****Volume Units:****Extract Volume:****Dilution Factor:****Comment:** Exterior

Results for: GCMS with Full Scan



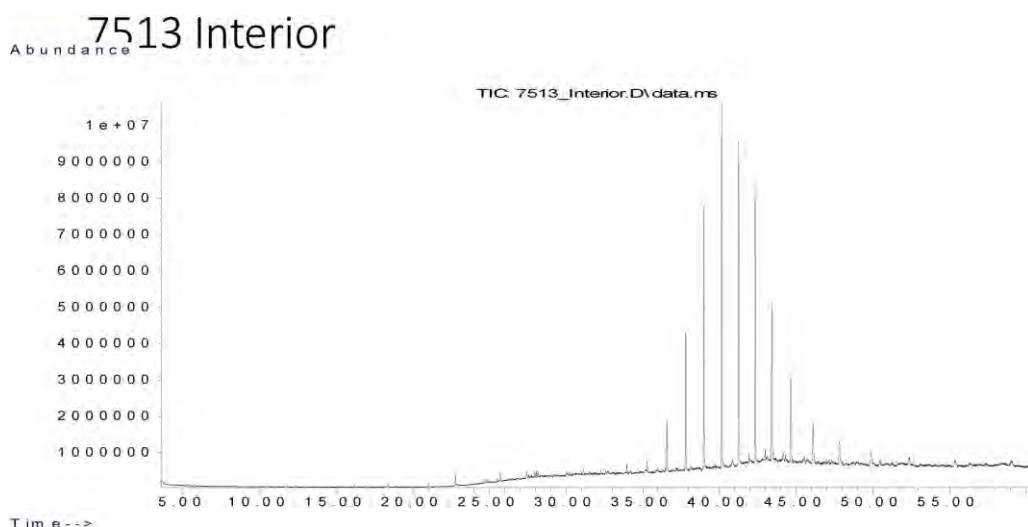
Data Sheet:

(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Respse:	Value:	units:	Qualifier:
Aliph	Botryococcane	39.4780			ug/L	U
Aliph	nC10	7.5100			ug/L	U
Aliph	nC11	9.9450			ug/L	U
Aliph	nC12	12.3690			ug/L	U
Aliph	nC13	14.7030			ug/L	U
Aliph	nC14	16.9230			ug/L	U
Aliph	nC15	19.0270			ug/L	U
Aliph	nC16	21.0200			ug/L	U
Aliph	nC17	22.9150			ug/L	U
Aliph	nC18	24.7150			ug/L	U
Aliph	nC19	26.4300			ug/L	U
Aliph	nC20	28.0680			ug/L	U
Aliph	nC21	29.6330			ug/L	U
Aliph	nC22	31.1340			ug/L	U
Aliph	nC23	32.5720			ug/L	U
Aliph	nC24	33.9520	974724		ug/L	Z
Aliph	nC25	35.2810	769645		ug/L	Z
Aliph	nC26	36.5600	2318877		ug/L	Z
Aliph	nC27	37.7930	4067059		ug/L	Z
Aliph	nC28	38.9870	7707298		ug/L	Z
Aliph	nC29	40.1370	11348886		ug/L	Z
Aliph	nC30	41.2480	14511078		ug/L	Z
Aliph	nC31	42.3270	17199196		ug/L	Z
Aliph	nC32	43.4130	14482736		ug/L	Z
Aliph	nC33	44.6430	11832131		ug/L	Z
Aliph	nC34	46.0860	8423341		ug/L	Z
Aliph	nC35	47.8060	6345872		ug/L	Z
Aliph	nC36	49.8090	4754602		ug/L	Z
Aliph	nC37	52.2960	584707		ug/L	Z
Aliph	nC38	55.2370	3298309		ug/L	Z
Aliph	nC39	58.8850	3634053		ug/L	Z
Aliph	Norpristane	21.9070			ug/L	U
Aliph	Phytane	24.8210			ug/L	U
Aliph	Pristane	22.9640			ug/L	U

Results for: GCMS with Full Scan**Results for: GCMS with Full Scan****Unique ID:** W13/007513 DISS GCMS-Scan/02**Instrument / Type:** GCMS with Full Scan Run: 2**for Analysis:** Whole Oils**Preparation:** Dissolved in solvent**Analysis Date:** 18/11/2016**Method ID/s:****Linked Image:** [LinkedFiles\GAB_BCH1\GCMS\W13_007513_int_WholeOil.jpg](#)**Sample Volume:****Volume Units:****Extract Volume:****Dilution Factor:****Comment:** Interior

Results for: GCMS with Full Scan



Data Sheet:

(default units ppb)

Type:	Compound / Variable:	Retention Time:	Target Response:	Value:	units:	Qualifier:
Aliph	Botryococcane	39.4780			ug/L	U
Aliph	nC10	7.5100			ug/L	U
Aliph	nC11	9.9450			ug/L	U
Aliph	nC12	12.3690			ug/L	U
Aliph	nC13	14.7030			ug/L	U
Aliph	nC14	16.9230			ug/L	U
Aliph	nC15	19.0270			ug/L	U
Aliph	nC16	21.0200			ug/L	U
Aliph	nC17	22.9150			ug/L	U
Aliph	nC18	24.7150			ug/L	U
Aliph	nC19	26.4300			ug/L	U
Aliph	nC20	28.0680			ug/L	U
Aliph	nC21	29.6330			ug/L	U
Aliph	nC22	31.1340			ug/L	U
Aliph	nC23	32.5720			ug/L	U
Aliph	nC24	33.9520	1296435		ug/L	Z
Aliph	nC25	35.2810	1857929		ug/L	Z
Aliph	nC26	36.5600	7248692		ug/L	Z
Aliph	nC27	37.7930	20118367		ug/L	Z
Aliph	nC28	38.9870	37939907		ug/L	Z
Aliph	nC29	40.1370	51076928		ug/L	Z
Aliph	nC30	41.2480	45745495		ug/L	Z
Aliph	nC31	42.3270	39909222		ug/L	Z
Aliph	nC32	43.4130	26316684		ug/L	Z
Aliph	nC33	44.6430	17102446		ug/L	Z
Aliph	nC34	46.0860	9978979		ug/L	Z
Aliph	nC35	47.8060	3273901		ug/L	Z
Aliph	nC36	49.8090	4286777		ug/L	Z
Aliph	nC37	52.2960	1108867		ug/L	Z
Aliph	nC38	55.2370	4021196		ug/L	Z
Aliph	nC39	58.8850	265865		ug/L	Z
Aliph	Norpristane	21.9070			ug/L	U
Aliph	Phytane	24.8210			ug/L	U
Aliph	Pristane	22.9640			ug/L	U

Results for: GCMS with Full Scan

Qualifier codes:

A	TIC is a possible aldol-condensation product
B	Analyte was also detected in the blank
D	Compound quantitated on a diluted sample
E	Inorganics: Estimated due to interference Organics: Concentration exceeds the calibration range of the instrument
J	Estimated - Result is \geq the Method Detection Limit (MDL) and $<$ the Limit of Quantitation (LOQ)
M	Duplicate injection precision not met
N	Spike sample not within control limits
O	Presumptive evidence of a compound
P	Concentration difference between primary and confirmation columns $> 25\%$
R	Spike/Surrogate failed recovery limits
S	Method of standard additions (MSA) used for calculation
T	Detected but Quantitated amount exceeded maximum
U	Compound Not Detected
V	overloaded and possibly not a water extract
X	Duplicate analysis not within control limits
Y	Detected
Z	Detected but not Quantified (too small)

Sample ID : **W13/007588**

Beach E1: Waitpinga Beach Visit: 2

Comments:

Location: Upper Intertidal

Local Date Time: 7/09/2015 10:09:10 AM

Type: Waxy Bitumen

Family: Type IV waxy bitumen (no botryococcane, hig

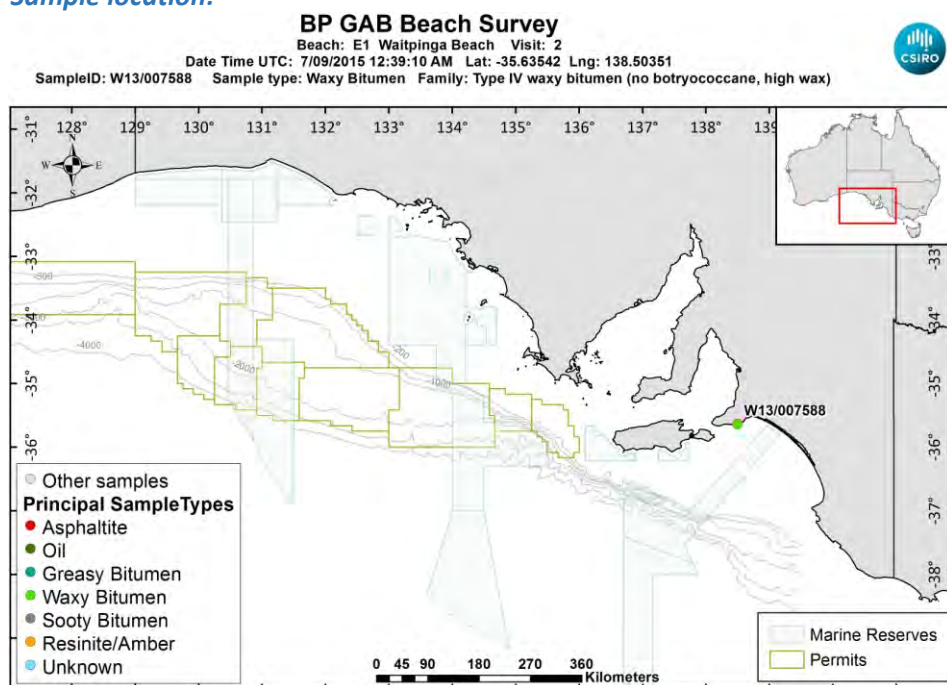
Size (cm): 2

Latitude (Y): -35.635417

Weight (gm): 2

Longitude (X): 138.503510

Sample location:



[LinkedFiles\GAB_BCH1\SampleLocations\W13_007588_Location.jpg](#)

Sample - field image:



[LinkedFiles\GAB_BCH1\Samples\W13_007588_146A1475.JPG](#)

Sample - laboratory image:

[LinkedFiles\GAB_BCH1\Samples\W13_007588_Photo02.JPG](#)**Analyses Requested**

Split:	Analysis:	Sent:
1	Bitumen Determination	YES
2	Whole Oils	YES

Analyses Completed:

Analysis:	Instrument/Type:
Elemental CHNS	Elemental Analyser Run: 1
Whole Oils	GCMS with Full Scan Run: 2
Whole Oils	GCMS with Full Scan Run: 1

Sample Analyses Completed:**Results for: Elemental Analyser****Unique ID:** W13/007588_SPE_ELEM-AN/01**Instrument / Type:** Elemental Analyser Run: 1**for Analysis:** Elemental CHNS**Analysis Date:** 30/10/2017**Linked Image:** [None available](#)**Preparation:** Solid Phase Extract**Method ID/s:**

Sample Volume:	Volume Units:	Extract Volume:	Dilution Factor:
Comment:			

Data Sheet:

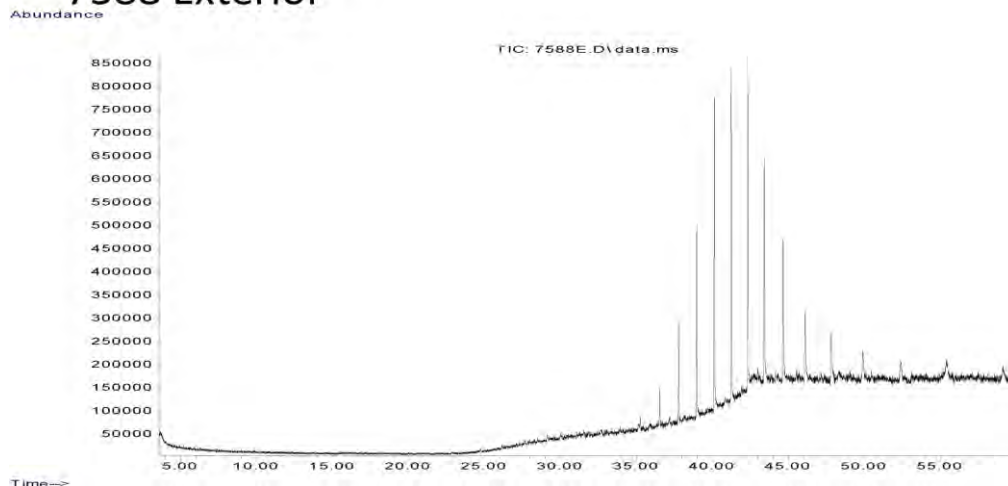
(default units ppb)					
Type:	Compound / Variable:	Retentn Time:	Target Respse:	Value:	units: Qualifier:
Inorg	Carbon			75.7	percent Y
Inorg	Hydrogen			12.0147504572565	percent Y
Inorg	Nitrogen			0.603954755784062	percent Y
Inorg	Sulphur			2.48975970626345	percent Y

Results for: GCMS with Full Scan**Unique ID:** W13/007588_DISS_GCMS-Scan/01

Results for: GCMS with Full Scan**Instrument / Type:** GCMS with Full Scan Run: 1**for Analysis:** Whole Oils**Preparation:** Dissolved in solvent**Analysis Date:** 18/11/2016**Method ID/s:****Linked Image:** [LinkedFiles\GAB_BCH1\GCMS\W13_007588_ext_WholeOil.jpg](#)**Sample Volume:****Volume Units:****Extract Volume:****Dilution Factor:****Comment:** Exterior

Results for: GCMS with Full Scan

7588 Exterior



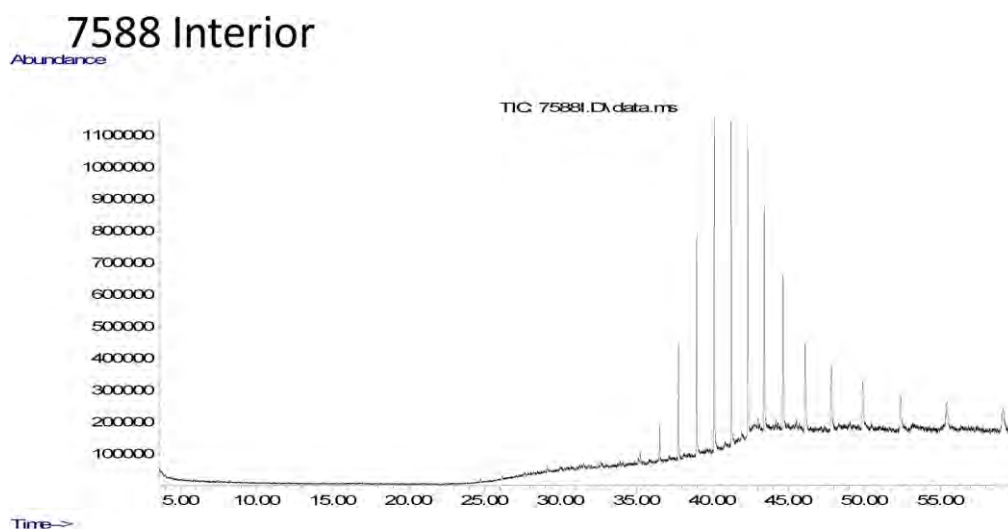
Data Sheet:

(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Respse:	Value:	units:	Qualifier:
Aliph	Botryococcane	39.4290			ug/L	U
Aliph	nC10	0.0000			ug/L	U
Aliph	nC11	0.0000			ug/L	U
Aliph	nC12	12.2580			ug/L	U
Aliph	nC13	14.5950			ug/L	U
Aliph	nC14	16.8180			ug/L	U
Aliph	nC15	18.9260			ug/L	U
Aliph	nC16	20.9240			ug/L	U
Aliph	nC17	22.8190			ug/L	U
Aliph	nC18	24.6230			ug/L	U
Aliph	nC19	26.3410			ug/L	U
Aliph	nC20	27.9810			ug/L	U
Aliph	nC21	29.5510			ug/L	U
Aliph	nC22	31.0540			ug/L	U
Aliph	nC23	32.4960			ug/L	U
Aliph	nC24	33.8800	42486		ug/L	Z
Aliph	nC25	35.2120	70585		ug/L	Z
Aliph	nC26	36.4960	428722		ug/L	Z
Aliph	nC27	37.7300	1065366		ug/L	Z
Aliph	nC28	38.9260	1964137		ug/L	Z
Aliph	nC29	40.0740	3302657		ug/L	Z
Aliph	nC30	41.1930	3602645		ug/L	Z
Aliph	nC31	42.2750	3625828		ug/L	Z
Aliph	nC32	43.3560	2455546		ug/L	Z
Aliph	nC33	44.5840	2059586		ug/L	Z
Aliph	nC34	46.0130	1240492		ug/L	Z
Aliph	nC35	47.7140	990183		ug/L	Z
Aliph	nC36	49.7870	721701		ug/L	Z
Aliph	nC37	52.2630	577699		ug/L	Z
Aliph	nC38	55.2360	503599		ug/L	Z
Aliph	nC39	58.9110	396177		ug/L	Z
Aliph	Norpristane	21.8010			ug/L	U
Aliph	Phytane	24.7190			ug/L	U
Aliph	Pristane	22.8660			ug/L	U

Results for: GCMS with Full Scan**Results for: GCMS with Full Scan****Unique ID:** W13/007588 DISS GCMS-Scan/02**Instrument / Type:** GCMS with Full Scan Run: 2**for Analysis:** Whole Oils**Preparation:** Dissolved in solvent**Analysis Date:** 18/11/2016**Method ID/s:****Linked Image:** [LinkedFiles\GAB_BCH1\GCMS\W13_007588_int_WholeOil.jpg](#)**Sample Volume:****Volume Units:****Extract Volume:****Dilution Factor:****Comment:** Interior

Results for: GCMS with Full Scan



Data Sheet:

(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Respse:	Value:	units:	Qualifier:
Aliph	Botryococcane	39.4290			ug/L	U
Aliph	nC10	0.0000			ug/L	U
Aliph	nC11	0.0000			ug/L	U
Aliph	nC12	12.2580			ug/L	U
Aliph	nC13	14.5950			ug/L	U
Aliph	nC14	16.8180			ug/L	U
Aliph	nC15	18.9260			ug/L	U
Aliph	nC16	20.9240			ug/L	U
Aliph	nC17	22.8190			ug/L	U
Aliph	nC18	24.6230			ug/L	U
Aliph	nC19	26.3410			ug/L	U
Aliph	nC20	27.9810			ug/L	U
Aliph	nC21	29.5510			ug/L	U
Aliph	nC22	31.0540			ug/L	U
Aliph	nC23	32.4960			ug/L	U
Aliph	nC24	33.8800	32222		ug/L	Z
Aliph	nC25	35.2120	139020		ug/L	Z
Aliph	nC26	36.4960	529292		ug/L	Z
Aliph	nC27	37.7300	1724635		ug/L	Z
Aliph	nC28	38.9260	3441348		ug/L	Z
Aliph	nC29	40.0740	5096800		ug/L	Z
Aliph	nC30	41.1930	4874414		ug/L	Z
Aliph	nC31	42.2750	5108183		ug/L	Z
Aliph	nC32	43.3560	3917341		ug/L	Z
Aliph	nC33	44.5840	3153173		ug/L	Z
Aliph	nC34	46.0130	2264994		ug/L	Z
Aliph	nC35	47.7140	1901534		ug/L	Z
Aliph	nC36	49.7870	1490105		ug/L	Z
Aliph	nC37	52.2630	1317465		ug/L	Z
Aliph	nC38	55.2360	1246593		ug/L	Z
Aliph	nC39	58.9110	1322014		ug/L	Z
Aliph	Norpristane	21.8010			ug/L	U
Aliph	Phytane	24.7190	63969		ug/L	Z
Aliph	Pristane	22.8660			ug/L	U

Results for: GCMS with Full Scan**Qualifier codes:**

A	TIC is a possible aldol-condensation product
B	Analyte was also detected in the blank
D	Compound quantitated on a diluted sample
E	Inorganics: Estimated due to interference Organics: Concentration exceeds the calibration range of the instrument
J	Estimated - Result is \geq the Method Detection Limit (MDL) and $<$ the Limit of Quantitation (LOQ)
M	Duplicate injection precision not met
N	Spike sample not within control limits
O	Presumptive evidence of a compound
P	Concentration difference between primary and confirmation columns $> 25\%$
R	Spike/Surrogate failed recovery limits
S	Method of standard additions (MSA) used for calculation
T	Detected but Quantitated amount exceeded maximum
U	Compound Not Detected
V	overloaded and possibly not a water extract
X	Duplicate analysis not within control limits
Y	Detected
Z	Detected but not Quantified (too small)

Sample ID : **W13/007589**

Beach E1: Waitpinga Beach Visit: 2

Comments:

Location: Shore Upper

Local Date Time: 7/09/2015 10:13:55 AM

Type: Waxy Bitumen

Family: Type IV waxy bitumen (no botryococcane, hig

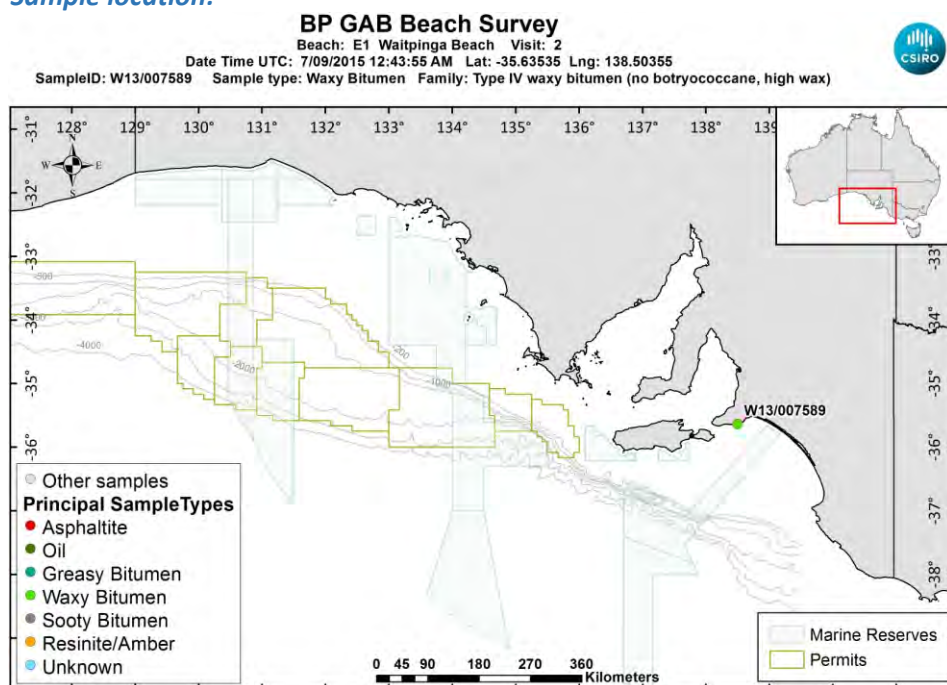
Size (cm): 4.8

Latitude (Y): -35.635353

Weight (gm): 32.1

Longitude (X): 138.503548

Sample location:



[LinkedFiles\GAB_BCH1\SampleLocations\W13_007589_Location.jpg](#)

Sample - field image:



[LinkedFiles\GAB_BCH1\Samples\W13_007589_146A1477.JPG](#)

Sample - laboratory image:



[LinkedFiles\GAB_BCH1\Samples\W13_007589_Photo02.JPG](#)

Analyses Requested

Split:	Analysis:	Sent:
1	Bitumen Determination	YES
2	Whole Oils	YES
4	Biomarkers	YES
5	CSIA	YES

Analyses Completed:

Analysis:	Instrument/Type:
Biomarkers	Gas Chromatography Mass Spectrometry Run: 1
CSIA	Compound Specific Isotope Analysis d13C Run: 3
CSIA	Compound Specific Isotope Analysis d2H Run: 2
Elemental CHNS	Elemental Analyser Run: 1
Whole Oils	GCMS with Full Scan Run: 2
Whole Oils	GCMS with Full Scan Run: 1

Sample Analyses Completed:

Results for: Gas Chromatography Mass Spectrometry

Unique ID: W13/007589_DISS_GC-MS/01

Instrument / Type: Gas Chromatography Mass Spectrometry Run: 1

for Analysis: Biomarkers

Analysis Date: 18/07/2017

Linked Image: [None available](#)

Preparation: Dissolved in solvent

Method ID/s:

Sample Volume:

Volume Units:

Extract Volume:

Dilution Factor:

Comment: Internal Ratios only

Results for: Gas Chromatography Mass Spectrometry

Data Sheet:

(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Respns:	Value:	units:	Qualifier:
BiomRatio	% C27 aaa 20R			32.8775673988645	ratio	Y
BiomRatio	% C27 abb 20(R+S)			37.7391228907301	ratio	Y
BiomRatio	% C28 aaa 20R			37.0537704723122	ratio	Y
BiomRatio	% C28 abb 20(R+S)			30.789195910872	ratio	Y
BiomRatio	% C29 aaa 20R			30.0686621288232	ratio	Y
BiomRatio	% C29 abb 20(R+S)			31.4716811983979	ratio	Y
BiomRatio	(C21+C22)/(C27+C28+C29)			0.618231575173083	ratio	Y
BiomRatio	25-Nor/C30H			0.133131728559332	ratio	Y
BiomRatio	C19t/C23t			0.228552199216121	ratio	Y
BiomRatio	C22t/C21t			0.135548095844426	ratio	Y
BiomRatio	C22t/C24t			7.75393987551318E-02	ratio	Y
BiomRatio	C23t/C30H			0.611080198379098	ratio	Y
BiomRatio	C24t/C23t			0.597885902054713	ratio	Y
BiomRatio	C24Tet/C23t			0.119125856130488	ratio	Y
BiomRatio	C24Tet/C26t			0.326214223764094	ratio	Y
BiomRatio	C24Tet/C30H			7.27954517962985E-02	ratio	Y
BiomRatio	C26t/C25t			1.24699202379343	ratio	Y
BiomRatio	C27 Dia/(Dia+Reg)			0.718333160996795	ratio	Y
BiomRatio	C27 Dia/Ster			0.911945740956826	ratio	Y
BiomRatio	C28BNH/C30H			2.46764243377283E-03	ratio	Y
BiomRatio	C29/C27 abb Sterane Ratio			0.833927203065134	ratio	Y
BiomRatio	C29H/C30H			0.645312689004476	ratio	Y
BiomRatio	C29Ts/(C29Ts+C29H)			0.254562222284325	ratio	Y
BiomRatio	C30DiaH/C30H			0.249715737268659	ratio	Y
BiomRatio	C30Ts/C30H			3.31438248457724E-02	ratio	Y
BiomRatio	C35 Homohopane Index			9.17583263281278E-02	ratio	Y
BiomRatio	C35HS/C34HS			0.634497757238005	ratio	Y
BiomRatio	Gam/C30H			7.72952703520019E-02	ratio	Y
BiomRatio	Gam/C31HR			0.287993510005408	ratio	Y
BiomRatio	Ole/C30H			4.26756985605419E-02	ratio	Y
BiomRatio	Sterane/hopane			2.25768743631498	ratio	Y
BiomRatio	Steranes/Terpanes			1.48099387806097	ratio	Y
BiomRatio	Tricyclic/Pentacyclic Terpanes			0.524440762220381	ratio	Y

Results for: Compound Specific Isotope Analysis d13C

Unique ID: W13/007589_PTE_CSIA-C13/03

Instrument / Type: Compound Specific Isotope Analysis d13C Run: 3

for Analysis: CSIA

Preparation: Pentane Extraction

Analysis Date: 17/07/2017

Method ID/s: Final d13C

Linked Image: [None available](#)

Sample Volume:

Volume Units:

Extract Volume:

Dilution Factor:

Comment: Internal Final d13C

Results for: Compound Specific Isotope Analysis d13C

Data Sheet:

(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Respns:	Value:	units:	Qualifier:
Aliph	nC13			-27.785	value	Y
Aliph	nC14				value	U
Aliph	nC15			-30.921	value	Y
Aliph	nC16			-29.365	value	Y
Aliph	nC17			-30.382	value	Y
Aliph	nC18			-29.875	value	Y
Aliph	nC19			-29.618	value	Y
Aliph	nC20			-29.486	value	Y
Aliph	nC21			-29.747	value	Y
Aliph	nC22			-29.809	value	Y
Aliph	nC23			-29.824	value	Y
Aliph	nC24			-29.714	value	Y
Aliph	nC25			-29.329	value	Y
Aliph	nC26			-29.337	value	Y
Aliph	nC27			-29.236	value	Y
Aliph	nC28			-29.264	value	Y
Aliph	nC29			-30.018	value	Y
Aliph	nC30			-29.779	value	Y
Aliph	nC31			-30.061	value	Y
Aliph	nC32			-30.447	value	Y
Aliph	nC33			-30.351	value	Y
Aliph	nC34			-30.434	value	Y
Aliph	nC35			-30.847	value	Y
Aliph	nC36			-31.869	value	Y
Aliph	nC37			-31.207	value	Y
Aliph	nC38			-31.627	value	Y
Aliph	nC39			-31.481	value	Y

Results for: Compound Specific Isotope Analysis d2H

Unique ID: W13/007589_PTE_CSIA/02

Instrument / Type: Compound Specific Isotope Analysis d2H Run: 2

for Analysis: CSIA

Preparation: Pentane Extraction

Analysis Date: 17/07/2017

Method ID/s: Final d 2H/1H

Linked Image: [None available](#)

Sample Volume:

Volume Units:

Extract Volume:

Dilution Factor:

Comment: Internal 2H analysis

Results for: Compound Specific Isotope Analysis d2H

Data Sheet:

(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Rspnse:	Value:	units:	Qualifier:
Aliph	nC13			-55.23	value	Y
Aliph	nC14				value	U
Aliph	nC15			-120.7155	value	Y
Aliph	nC16			-122.737	value	Y
Aliph	nC17			-111.8165	value	Y
Aliph	nC18			-115.36	value	Y
Aliph	nC19			-120.3135	value	Y
Aliph	nC20			-118.324	value	Y
Aliph	nC21			-118.261	value	Y
Aliph	nC22			-113.3095	value	Y
Aliph	nC23			-112.659	value	Y
Aliph	nC24			-112.1555	value	Y
Aliph	nC25			-110.3565	value	Y
Aliph	nC26			-113.7505	value	Y
Aliph	nC27			-110.785	value	Y
Aliph	nC28			-110.578	value	Y
Aliph	nC29			-111.222	value	Y
Aliph	nC30			-104.9255	value	Y
Aliph	nC31			-106.1345	value	Y
Aliph	nC32			-100.4655	value	Y
Aliph	nC33			-97.3605	value	Y
Aliph	nC34			-86.0255	value	Y
Aliph	nC35			-87.8785	value	Y
Aliph	nC36			-83.6275	value	Y
Aliph	nC37			-84.6375	value	Y
Aliph	nC38			-75.3225	value	Y
Aliph	nC39			-54.058	value	Y

Results for: Elemental Analyser

Unique ID: W13/007589_SPE_ELEM-AN/01

Instrument / Type: Elemental Analyser Run: 1

for Analysis: Elemental CHNS

Analysis Date: 30/10/2017

Linked Image: [None available](#)

Preparation: Solid Phase Extract

Method ID/s:

Sample Volume:

Volume Units:

Extract Volume:

Dilution Factor:

Comment:

Data Sheet:

(default units ppb)

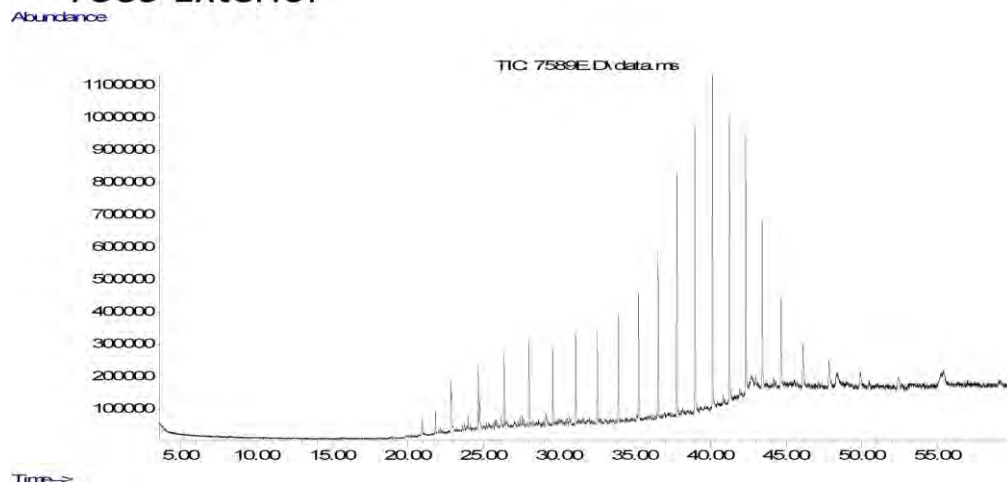
Type:	Compound / Variable:	Retentn Time:	Target Rspnse:	Value:	units:	Qualifier:
Inorg	Carbon			85.15	percent	Y
Inorg	Hydrogen			9.76331809145129	percent	Y
Inorg	Nitrogen			0.571054155955441	percent	Y
Inorg	Sulphur			1.79572042785954	percent	Y

Results for: GCMS with Full Scan

Results for: GCMS with Full Scan**Unique ID:** W13/007589 DISS GCMS-Scan/01**Instrument / Type:** GCMS with Full Scan Run: 1**for Analysis:** Whole Oils**Preparation:** Dissolved in solvent**Analysis Date:** 18/11/2016**Method ID/s:****Linked Image:** [LinkedFiles\GAB BCH1\GCMS\W13 007589 ext WholeOil.jpg](#)**Sample Volume:****Volume Units:****Extract Volume:****Dilution Factor:****Comment:** Exterior

Results for: GCMS with Full Scan

7589 Exterior



Data Sheet:

(default units ppb)

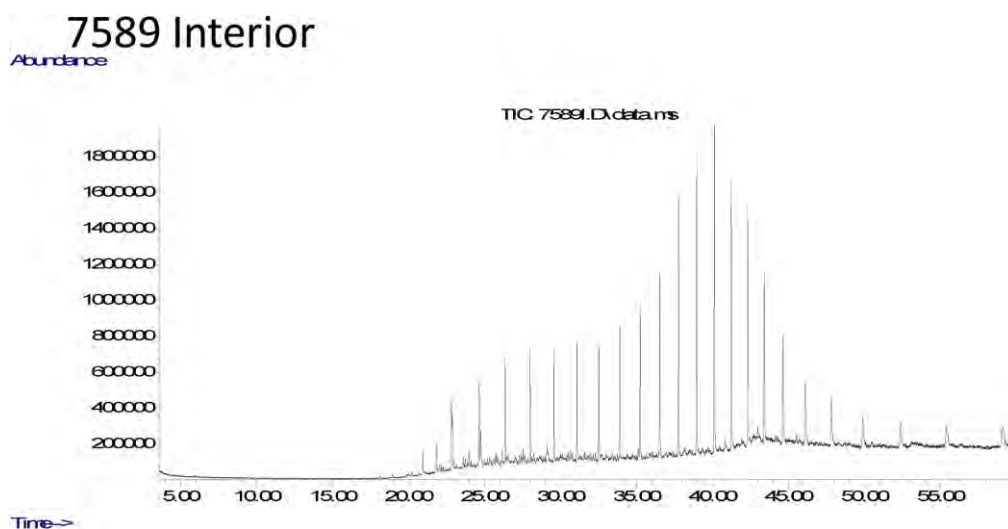
Type:	Compound / Variable:	Retentn Time:	Target Respnse:	Value:	units:	Qualifier:
Ratio	nC17/nC29		0.14065377675677		ug/L	Y
Ratio	nC17/nC35		0.999326286422857		ug/L	Y
Ratio	nC17/Pristane		0.981974671863314		ug/L	Y
Ratio	nC18/Phytane		1.92456314514429		ug/L	Y
Ratio	Pristane/Phytane		1.37691353423213		ug/L	Y
Aliph	Botryococcane	39.4290			ug/L	U
Aliph	nC10	0.0000			ug/L	U
Aliph	nC11	0.0000			ug/L	U
Aliph	nC12	12.2580			ug/L	U
Aliph	nC13	14.5950			ug/L	U
Aliph	nC14	16.8180			ug/L	U
Aliph	nC15	18.9260	46698		ug/L	Z
Aliph	nC16	20.9240	297601		ug/L	Z
Aliph	nC17	22.8190	721393		ug/L	Z
Aliph	nC18	24.6230	1026827		ug/L	Z
Aliph	nC19	26.3410	1202489		ug/L	Z
Aliph	nC20	27.9810	1253393		ug/L	Z
Aliph	nC21	29.5510	1259950		ug/L	Z
Aliph	nC22	31.0540	1286211		ug/L	Z
Aliph	nC23	32.4960	1357973		ug/L	Z
Aliph	nC24	33.8800	1533284		ug/L	Z
Aliph	nC25	35.2120	1965786		ug/L	Z
Aliph	nC26	36.4960	2401638		ug/L	Z
Aliph	nC27	37.7300	3419975		ug/L	Z
Aliph	nC28	38.9260	4357132		ug/L	Z
Aliph	nC29	40.0740	5128857		ug/L	Z
Aliph	nC30	41.1930	4640680		ug/L	Z
Aliph	nC31	42.2750	4181132		ug/L	Z
Aliph	nC32	43.3560	2816688		ug/L	Z
Aliph	nC33	44.5840	1918465		ug/L	Z
Aliph	nC34	46.0130	1125836		ug/L	Z
Aliph	nC35	47.7140	721879		ug/L	Z
Aliph	nC36	49.7870	468043		ug/L	Z
Aliph	nC37	52.2630	399819		ug/L	Z

Results for: GCMS with Full Scan

Aliph	nC38	55.2360		ug/L	U
Aliph	nC39	58.9110		ug/L	U
Aliph	Norpristane	21.8010	560701	ug/L	Z
Aliph	Phytane	24.7190	533538	ug/L	Z
Aliph	Pristane	22.8660	734635	ug/L	Z

Results for: GCMS with Full Scan**Unique ID:** W13/007589 DISS GCMS-Scan/02**Instrument / Type:** GCMS with Full Scan Run: 2**for Analysis:** Whole Oils**Preparation:** Dissolved in solvent**Analysis Date:** 18/11/2016**Method ID/s:****Linked Image:** [LinkedFiles\GAB_BCH1\GCMS\W13_007589_int_WholeOil.jpg](#)**Sample Volume:****Volume Units:****Extract Volume:****Dilution Factor:****Comment:** Interior

Results for: GCMS with Full Scan



Data Sheet:

(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Respnse:	Value:	units:	Qualifier:
Ratio	nC17/nC29		0.227809832566123		ug/L	Y
Ratio	nC17/nC35		0.839480897169834		ug/L	Y
Ratio	nC17/Pristane		1.19162889054661		ug/L	Y
Ratio	nC18/Phytane		1.92041814161286		ug/L	Y
Ratio	Pristane/Phytane		1.28222215572125		ug/L	Y
Aliph	Botryococcane	39.4290			ug/L	U
Aliph	nC10	0.0000			ug/L	U
Aliph	nC11	0.0000			ug/L	U
Aliph	nC12	12.2580			ug/L	U
Aliph	nC13	14.5950			ug/L	U
Aliph	nC14	16.8180			ug/L	U
Aliph	nC15	18.9260	91182		ug/L	Z
Aliph	nC16	20.9240	741407		ug/L	Z
Aliph	nC17	22.8190	2035682		ug/L	Z
Aliph	nC18	24.6230	2558595		ug/L	Z
Aliph	nC19	26.3410	2915179		ug/L	Z
Aliph	nC20	27.9810	2998921		ug/L	Z
Aliph	nC21	29.5510	3118186		ug/L	Z
Aliph	nC22	31.0540	3161887		ug/L	Z
Aliph	nC23	32.4960	3305785		ug/L	Z
Aliph	nC24	33.8800	3592930		ug/L	Z
Aliph	nC25	35.2120	4078910		ug/L	Z
Aliph	nC26	36.4960	5188109		ug/L	Z
Aliph	nC27	37.7300	6843035		ug/L	Z
Aliph	nC28	38.9260	7968690		ug/L	Z
Aliph	nC29	40.0740	8935885		ug/L	Z
Aliph	nC30	41.1930	7682206		ug/L	Z
Aliph	nC31	42.2750	6956140		ug/L	Z
Aliph	nC32	43.3560	5192721		ug/L	Z
Aliph	nC33	44.5840	4174295		ug/L	Z
Aliph	nC34	46.0130	2900466		ug/L	Z
Aliph	nC35	47.7140	2424930		ug/L	Z
Aliph	nC36	49.7870	1884982		ug/L	Z
Aliph	nC37	52.2630	1791995		ug/L	Z

Results for: GCMS with Full Scan

Aliph	nC38	55.2360	1914895	ug/L	Z
Aliph	nC39	58.9110	1894572	ug/L	Z
Aliph	Norpristane	21.8010	1334859	ug/L	Z
Aliph	Phytane	24.7190	1332311	ug/L	Z
Aliph	Pristane	22.8660	1708319	ug/L	Z

Qualifier codes:

A	TIC is a possible aldol-condensation product
B	Analyte was also detected in the blank
D	Compound quantitated on a diluted sample
E	Inorganics: Estimated due to interference Organics: Concentration exceeds the calibration range of the instrument
J	Estimated - Result is \geq the Method Detection Limit (MDL) and $<$ the Limit of Quantitation (LOQ)
M	Duplicate injection precision not met
N	Spike sample not within control limits
O	Presumptive evidence of a compound
P	Concentration difference between primary and confirmation columns $> 25\%$
R	Spike/Surrogate failed recovery limits
S	Method of standard additions (MSA) used for calculation
T	Detected but Quantitated amount exceeded maximum
U	Compound Not Detected
V	overloaded and possibly not a water extract
X	Duplicate analysis not within control limits
Y	Detected
Z	Detected but not Quantified (too small)

Sample ID : **W13/007590**

Beach E1: Waitpinga Beach Visit: 2

Comments:

Location: Mid Intertidal

Local Date Time: 7/09/2015 10:54:22 AM

Type: Waxy Bitumen

Family: Type IV waxy bitumen (no botryococcane, hig

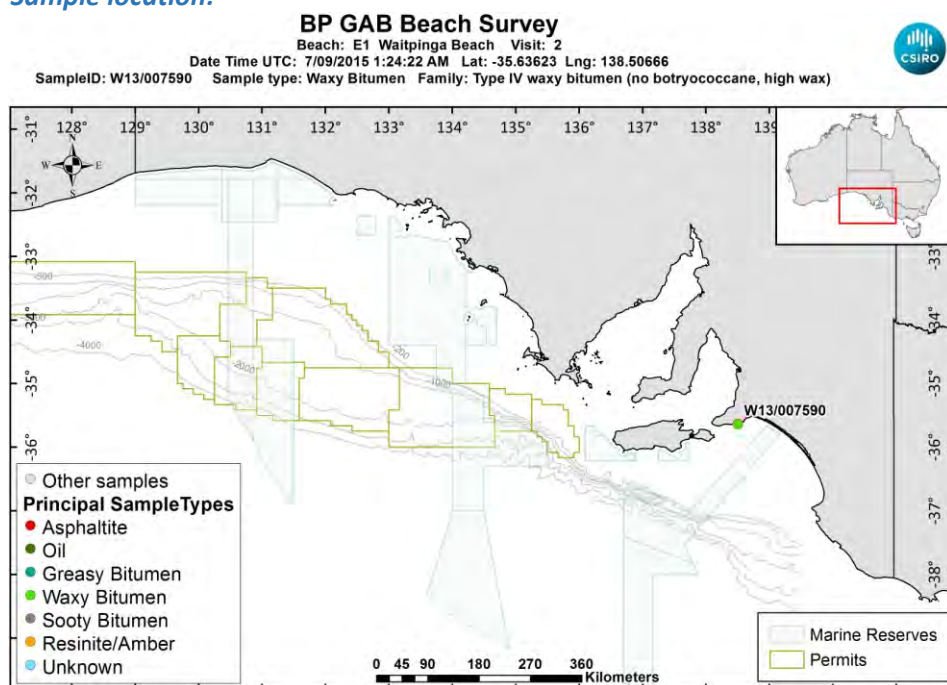
Size (cm): 1.9

Latitude (Y): -35.636230

Weight (gm): 1.1

Longitude (X): 138.506665

Sample location:



[LinkedFiles\GAB_BCH1\SampleLocations\W13_007590_Location.jpg](#)

Sample - field image:



[LinkedFiles\GAB_BCH1\Samples\W13_007590_146A1479.JPG](#)

Sample - laboratory image:



[LinkedFiles\GAB_BCH1\Samples\W13_007590_Photo02.JPG](#)

Analyses Requested

Split:	Analysis:	Sent:
1	Bitumen Determination	YES
2	Whole Oils	YES
4	Biomarkers	YES

Analyses Completed:

Analysis:	Instrument/Type:
Biomarkers	Gas Chromatography Mass Spectrometry Run: 1
Elemental CHNS	Elemental Analyser Run: 1
Whole Oils	GCMS with Full Scan Run: 3

Sample Analyses Completed:

Results for: Gas Chromatography Mass Spectrometry

Unique ID: W13/007590 DISS GC-MS/01

Instrument / Type: Gas Chromatography Mass Spectrometry Run: 1

for Analysis: Biomarkers

Preparation: Dissolved in solvent

Analysis Date: 18/07/2017

Method ID/s:

Linked Image: [None available](#)

Sample Volume:

Volume Units:

Extract Volume:

Dilution Factor:

Comment: External Ratios only

Results for: Gas Chromatography Mass Spectrometry

Data Sheet:

(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Respnse:	Value:	units:	Qualifier:
BiomRatio	% C27 aaa 20R			31.2611840423452	ratio	Y
BiomRatio	% C27 abb 20(R+S)			36.9753956448584	ratio	Y
BiomRatio	% C28 aaa 20R			40.8433707763793	ratio	Y
BiomRatio	% C28 abb 20(R+S)			33.7389353556536	ratio	Y
BiomRatio	% C29 aaa 20R			27.8954451812755	ratio	Y
BiomRatio	% C29 abb 20(R+S)			29.2856689994879	ratio	Y
BiomRatio	(C21+C22)/(C27+C28+C29)			0.546907964038832	ratio	Y
BiomRatio	25-Nor/C30H			0.146217185275941	ratio	Y
BiomRatio	C19t/C23t			9.10058681322139E-02	ratio	Y
BiomRatio	C22t/C21t			0.108799840659272	ratio	Y
BiomRatio	C22t/C24t			7.46938322038099E-02	ratio	Y
BiomRatio	C23t/C30H			0.687162393470388	ratio	Y
BiomRatio	C24t/C23t			0.613615744843752	ratio	Y
BiomRatio	C24Tet/C23t			0.153924411744655	ratio	Y
BiomRatio	C24Tet/C26t			0.340632942241409	ratio	Y
BiomRatio	C24Tet/C30H			0.105771067187979	ratio	Y
BiomRatio	C26t/C25t			0.974894782097117	ratio	Y
BiomRatio	C27 Dia/(Dia+Reg)			0.740353333547688	ratio	Y
BiomRatio	C27 Dia/Ster			1.0820304456632	ratio	Y
BiomRatio	C28BNH/C30H			5.65719536584926E-02	ratio	Y
BiomRatio	C29/C27 abb Sterane Ratio			0.792031254533991	ratio	Y
BiomRatio	C29H/C30H			0.564130376029261	ratio	Y
BiomRatio	C29Ts/(C29Ts+C29H)			0.22502029662779	ratio	Y
BiomRatio	C30DiaH/C30H			0.260863768220392	ratio	Y
BiomRatio	C30Ts/C30H			2.82841750599088E-02	ratio	Y
BiomRatio	C35 Homohopane Index			0.059103288484208	ratio	Y
BiomRatio	C35HS/C34HS			0.612398993244138	ratio	Y
BiomRatio	Gam/C30H			0.018039314606944	ratio	Y
BiomRatio	Gam/C31HR			0.101859764782485	ratio	Y
BiomRatio	Ole/C30H			2.46229797661303E-02	ratio	Y
BiomRatio	Sterane/hopane			3.09607274103887	ratio	Y
BiomRatio	Steranes/Terpanes			1.68606550718882	ratio	Y
BiomRatio	Tricyclic/Pentacyclic Terpanes			0.836270730786106	ratio	Y

Results for: Elemental Analyser

Unique ID: W13/007590_SPE_ELEM-AN/01

Instrument / Type: Elemental Analyser Run: 1

for Analysis: Elemental CHNS

Analysis Date: 30/10/2017

Linked Image: [None available](#)

Preparation: Solid Phase Extract

Method ID/s:

Sample Volume:

Volume Units:

Extract Volume:

Dilution Factor:

Comment:

Results for: Elemental Analyser**Data Sheet:**

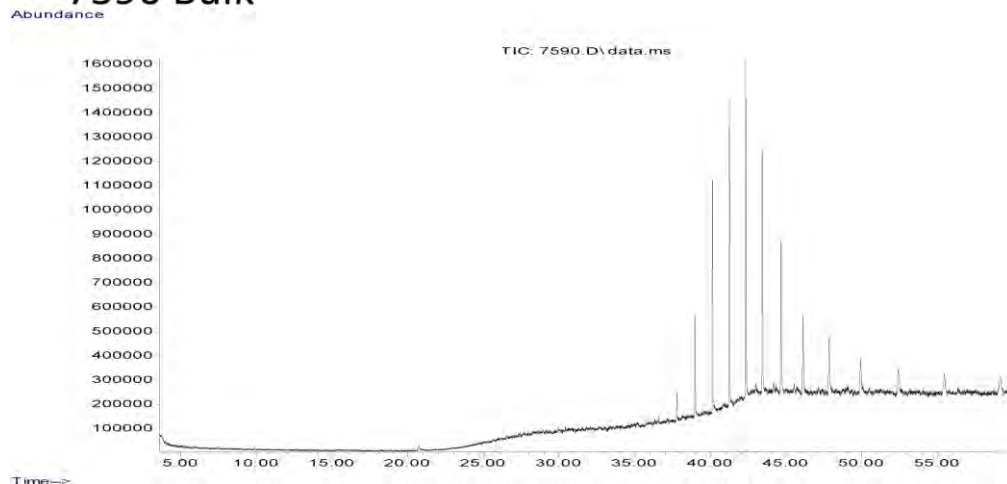
(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Respns:	Value:	units:	Qualifier:
Inorg	Carbon			92.57	percent	Y
Inorg	Hydrogen			12.8457542743539	percent	Y
Inorg	Nitrogen			0.813856555269923	percent	Y
Inorg	Sulphur			2.9619421035888	percent	Y

Results for: GCMS with Full Scan**Unique ID:** W13/007590_DISS_GCMS-Scan/03**Instrument / Type:** GCMS with Full Scan Run: 3**for Analysis:** Whole Oils**Preparation:** Dissolved in solvent**Analysis Date:** 18/11/2016**Method ID/s:****Linked Image:** [LinkedFiles\GAB_BCH1\GCMS\W13_007590_bulk_WholeOil.jpg](#)**Sample Volume:****Volume Units:****Extract Volume:****Dilution Factor:****Comment:** Bulk

Results for: GCMS with Full Scan

7590 Bulk



Data Sheet:

(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Respse:	Value:	units:	Qualifier:
Aliph	Botryococcane	39.4290			ug/L	U
Aliph	nC10	0.0000			ug/L	U
Aliph	nC11	0.0000			ug/L	U
Aliph	nC12	12.2580			ug/L	U
Aliph	nC13	14.5950			ug/L	U
Aliph	nC14	16.8180			ug/L	U
Aliph	nC15	18.9260			ug/L	U
Aliph	nC16	20.9240			ug/L	U
Aliph	nC17	22.8190			ug/L	U
Aliph	nC18	24.6230			ug/L	U
Aliph	nC19	26.3410			ug/L	U
Aliph	nC20	27.9810			ug/L	U
Aliph	nC21	29.5510			ug/L	U
Aliph	nC22	31.0540			ug/L	U
Aliph	nC23	32.4960			ug/L	U
Aliph	nC24	33.8800			ug/L	U
Aliph	nC25	35.2120			ug/L	U
Aliph	nC26	36.4960			ug/L	U
Aliph	nC27	37.7300	525134		ug/L	Z
Aliph	nC28	38.9260	2076590		ug/L	Z
Aliph	nC29	40.0740	4804570		ug/L	Z
Aliph	nC30	41.1930	6192747		ug/L	Z
Aliph	nC31	42.2750	6957440		ug/L	Z
Aliph	nC32	43.3560	5469522		ug/L	Z
Aliph	nC33	44.5840	4127720		ug/L	Z
Aliph	nC34	46.0130	2592855		ug/L	Z
Aliph	nC35	47.7140	2143157		ug/L	Z
Aliph	nC36	49.7870	1611508		ug/L	Z
Aliph	nC37	52.2630	1360817		ug/L	Z
Aliph	nC38	55.2360	1279286		ug/L	Z
Aliph	nC39	58.9110	1175114		ug/L	Z
Aliph	Norpristane	21.8010			ug/L	U
Aliph	Phytane	24.7190			ug/L	U
Aliph	Pristane	22.8660			ug/L	U

Results for: GCMS with Full Scan**Qualifier codes:**

A	TIC is a possible aldol-condensation product
B	Analyte was also detected in the blank
D	Compound quantitated on a diluted sample
E	Inorganics: Estimated due to interference Organics: Concentration exceeds the calibration range of the instrument
J	Estimated - Result is \geq the Method Detection Limit (MDL) and $<$ the Limit of Quantitation (LOQ)
M	Duplicate injection precision not met
N	Spike sample not within control limits
O	Presumptive evidence of a compound
P	Concentration difference between primary and confirmation columns $> 25\%$
R	Spike/Surrogate failed recovery limits
S	Method of standard additions (MSA) used for calculation
T	Detected but Quantitated amount exceeded maximum
U	Compound Not Detected
V	overloaded and possibly not a water extract
X	Duplicate analysis not within control limits
Y	Detected
Z	Detected but not Quantified (too small)

Sample ID : **W13/007591**

Beach E1: Waitpinga Beach Visit: 2

Comments:

Found to be seaweed - will NOT be analysed

Location: Upper Intertidal

Local Date Time: 7/09/2015 10:59:13 AM

Type: Seaweed

Family: Not bitumen (false sample)

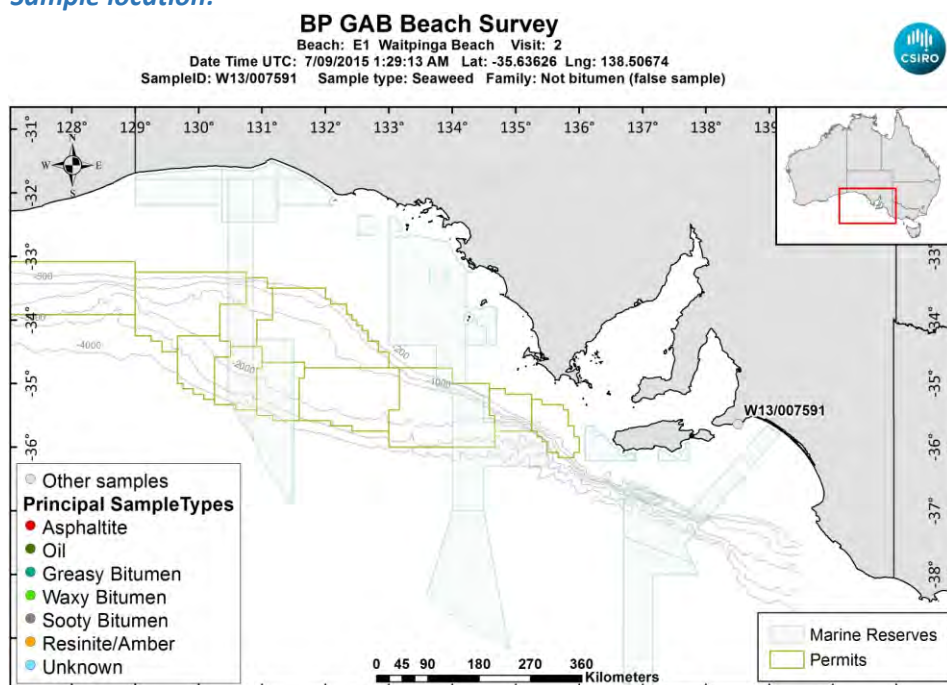
Size (cm): 2

Latitude (Y): -35.636257

Weight (gm):

Longitude (X): 138.506737

Sample location:



[LinkedFiles\GAB_BCH1\SampleLocations\W13_007591_Location.jpg](#)

Sample - field image:



[LinkedFiles\GAB_BCH1\Samples\W13_007591_146A1481.JPG](#)

Sample ID : W13/007591**Beach E1: Waitpinga Beach Visit: 2****Analyses Requested****Analyses Completed:**

Split:	Analysis:	Sent:
1	Bitumen Determination	YES

Sample Analyses Completed:**No results to date****Qualifier codes:**

A	TIC is a possible aldol-condensation product
B	Analyte was also detected in the blank
D	Compound quantitated on a diluted sample
E	Inorganics: Estimated due to interference Organics: Concentration exceeds the calibration range of the instrument
J	Estimated - Result is \geq the Method Detection Limit (MDL) and $<$ the Limit of Quantitation (LOQ)
M	Duplicate injection precision not met
N	Spike sample not within control limits
O	Presumptive evidence of a compound
P	Concentration difference between primary and confirmation columns $> 25\%$
R	Spike/Surrogate failed recovery limits
S	Method of standard additions (MSA) used for calculation
T	Detected but Quantitated amount exceeded maximum
U	Compound Not Detected
V	overloaded and possibly not a water extract
X	Duplicate analysis not within control limits
Y	Detected
Z	Detected but not Quantified (too small)

Sample ID : **W13/007592**

Beach E1: Waitpinga Beach Visit: 2

Comments:

probably wood. Found to be wood - will NOT be analysed

Location: Upper Intertidal

Local Date Time: 7/09/2015 11:19:43 AM

Type: Wood

Family: Not bitumen (false sample)

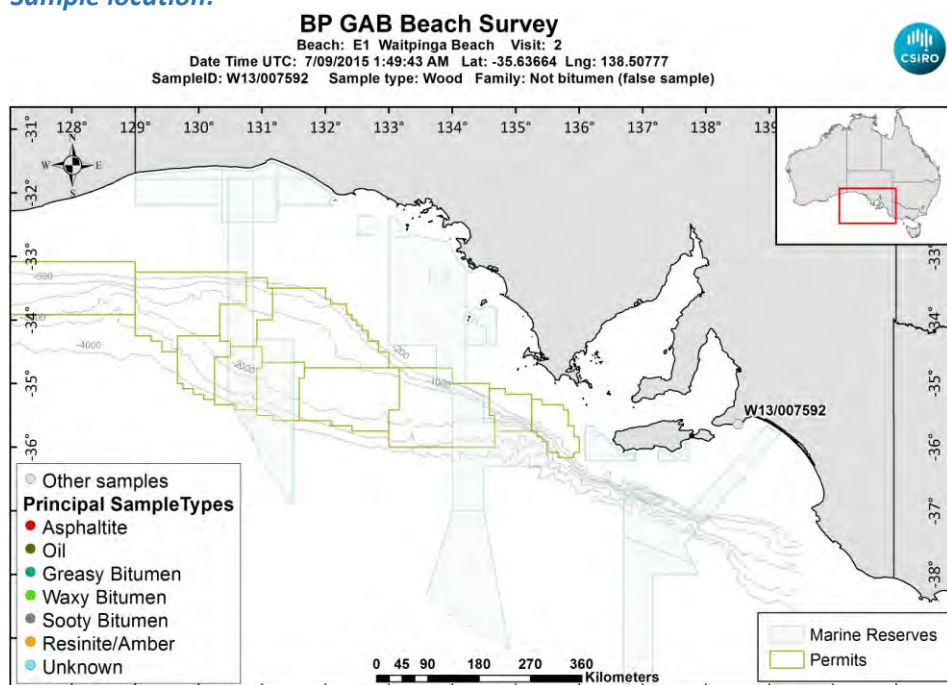
Size (cm): 2.6

Latitude (Y): -35.636645

Weight (gm):

Longitude (X): 138.507772

Sample location:



[LinkedFiles\GAB_BCH1\SampleLocations\W13_007592_Location.jpg](#)

Sample - field image:



[LinkedFiles\GAB_BCH1\Samples\W13_007592_146A1484.JPG](#)

Sample ID : W13/007592**Beach E1: Waitpinga Beach Visit: 2****Analyses Requested****Analyses Completed:**

Split:	Analysis:	Sent:
1	Bitumen Determination	YES

Sample Analyses Completed:**No results to date****Qualifier codes:**

A	TIC is a possible aldol-condensation product
B	Analyte was also detected in the blank
D	Compound quantitated on a diluted sample
E	Inorganics: Estimated due to interference Organics: Concentration exceeds the calibration range of the instrument
J	Estimated - Result is \geq the Method Detection Limit (MDL) and $<$ the Limit of Quantitation (LOQ)
M	Duplicate injection precision not met
N	Spike sample not within control limits
O	Presumptive evidence of a compound
P	Concentration difference between primary and confirmation columns $> 25\%$
R	Spike/Surrogate failed recovery limits
S	Method of standard additions (MSA) used for calculation
T	Detected but Quantitated amount exceeded maximum
U	Compound Not Detected
V	overloaded and possibly not a water extract
X	Duplicate analysis not within control limits
Y	Detected
Z	Detected but not Quantified (too small)

Sample ID : **W13/007593**

Beach E1: Waitpinga Beach Visit: 2

Comments:

found on walk back to start

Location: Upper Intertidal

Local Date Time: 7/09/2015 11:55:53 AM

Type: Waxy Bitumen

Family: Type IV waxy bitumen (no botryococcane, hig

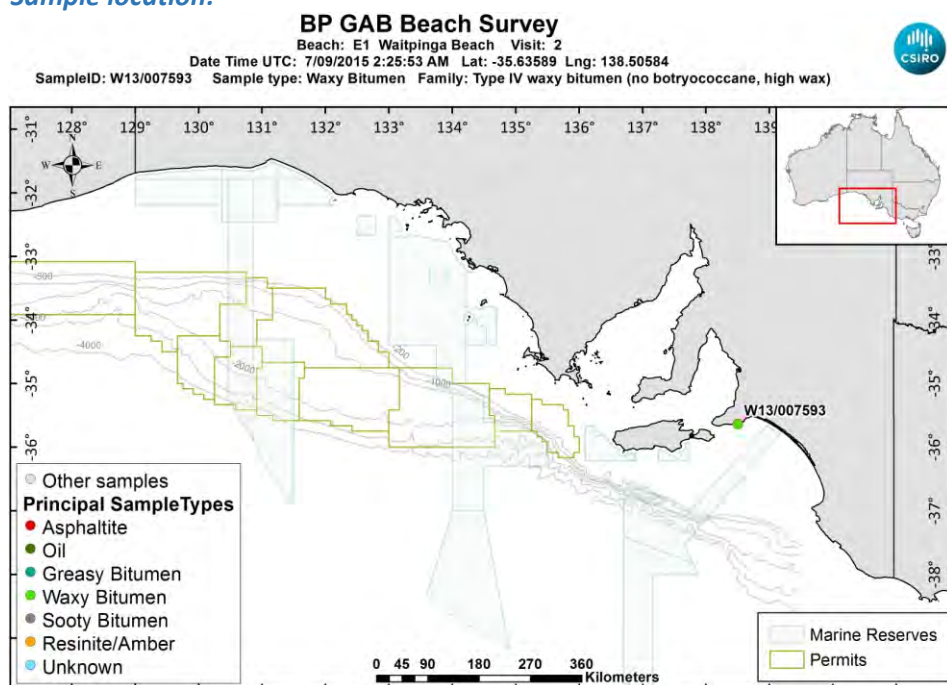
Size (cm): 2.5

Latitude (Y): -35.635890

Weight (gm): 3.2

Longitude (X): 138.505840

Sample location:



[LinkedFiles\GAB_BCH1\SampleLocations\W13_007593_Location.jpg](#)

Sample - field image:



[LinkedFiles\GAB_BCH1\Samples\W13_007593_146A1487.JPG](#)

Sample - laboratory image:



[LinkedFiles\GAB_BCH1\Samples\W13_007593_Photo02.JPG](#)

Analyses Requested

Split:	Analysis:	Sent:
1	Bitumen Determination	YES
2	Whole Oils	YES
4	Biomarkers	YES

Analyses Completed:

Analysis:	Instrument/Type:
Biomarkers	Gas Chromatography Mass Spectrometry Run: 1
Elemental CHNS	Elemental Analyser Run: 1
Whole Oils	GCMS with Full Scan Run: 2

Sample Analyses Completed:

Results for: Gas Chromatography Mass Spectrometry

Unique ID: W13/007593 DISS GC-MS/01

Instrument / Type: Gas Chromatography Mass Spectrometry Run: 1

for Analysis: Biomarkers

Analysis Date: 18/07/2017

Linked Image: [None available](#)

Preparation: Dissolved in solvent

Method ID/s:

Sample Volume:

Volume Units:

Extract Volume:

Dilution Factor:

Comment: Internal Ratios only

Results for: Gas Chromatography Mass Spectrometry

Data Sheet:

(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Respnse:	Value:	units:	Qualifier:
BiomRatio	% C27 aaa 20R			27.7699451717579	ratio	Y
BiomRatio	% C27 abb 20(R+S)			36.4584797074703	ratio	Y
BiomRatio	% C28 aaa 20R			40.3267315654023	ratio	Y
BiomRatio	% C28 abb 20(R+S)			32.9056866547381	ratio	Y
BiomRatio	% C29 aaa 20R			31.9033232628399	ratio	Y
BiomRatio	% C29 abb 20(R+S)			30.6358336377915	ratio	Y
BiomRatio	(C21+C22)/(C27+C28+C29)			0.429055368237496	ratio	Y
BiomRatio	25-Nor/C30H			0.134548071044844	ratio	Y
BiomRatio	C19t/C23t			0.166786456985692	ratio	Y
BiomRatio	C22t/C21t			7.22780074817878E-02	ratio	Y
BiomRatio	C22t/C24t			6.23810494834149E-02	ratio	Y
BiomRatio	C23t/C30H			0.564533842599856	ratio	Y
BiomRatio	C24t/C23t			0.563953655521375	ratio	Y
BiomRatio	C24Tet/C23t			0.205339773260884	ratio	Y
BiomRatio	C24Tet/C26t			0.489212082467636	ratio	Y
BiomRatio	C24Tet/C30H			0.11592125123755	ratio	Y
BiomRatio	C26t/C25t			1.08553088133241	ratio	Y
BiomRatio	C27 Dia/(Dia+Reg)			0.741365139335405	ratio	Y
BiomRatio	C27 Dia/Ster			0.977987913259865	ratio	Y
BiomRatio	C28BNH/C30H			4.85822950535866E-03	ratio	Y
BiomRatio	C29/C27 abb Sterane Ratio			0.840293777568413	ratio	Y
BiomRatio	C29H/C30H			0.535600867772843	ratio	Y
BiomRatio	C29Ts/(C29Ts+C29H)			0.25251800733884	ratio	Y
BiomRatio	C30DiaH/C30H			0.26560665653183	ratio	Y
BiomRatio	C30Ts/C30H			0	ratio	U
BiomRatio	C35 Homohopane Index			9.09133378232654E-02	ratio	Y
BiomRatio	C35HS/C34HS			0.755233011455647	ratio	Y
BiomRatio	Gam/C30H			7.05471188751413E-02	ratio	Y
BiomRatio	Gam/C31HR			0.355963202576912	ratio	Y
BiomRatio	Ole/C30H			2.29278136344209E-02	ratio	Y
BiomRatio	Sterane/hopane			2.4667928476125	ratio	Y
BiomRatio	Steranes/Terpanes			1.51957770957882	ratio	Y
BiomRatio	Tricyclic/Pentacyclic Terpanes			0.623341032224154	ratio	Y

Results for: Elemental Analyser

Unique ID: W13/007593_SPE_ELEM-AN/01

Instrument / Type: Elemental Analyser Run: 1

for Analysis: Elemental CHNS

Analysis Date: 30/10/2017

Linked Image: [None available](#)

Preparation: Solid Phase Extract

Method ID/s:

Sample Volume:

Volume Units:

Extract Volume:

Dilution Factor:

Comment:

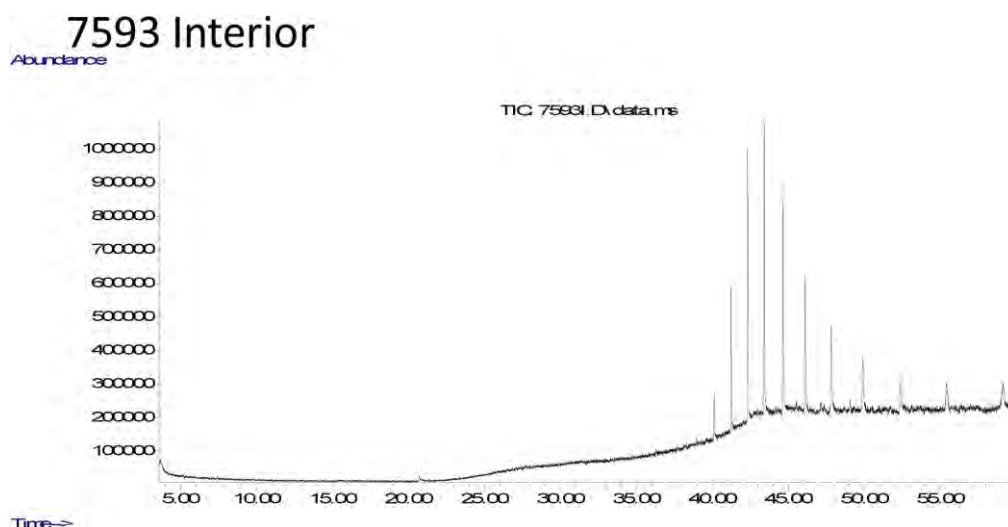
Results for: Elemental Analyser**Data Sheet:**

(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Respns:	Value:	units:	Qualifier:
Inorg	Carbon			80.42	percent	Y
Inorg	Hydrogen			11.3939946322068	percent	Y
Inorg	Nitrogen			0.919357326478149	percent	Y
Inorg	Sulphur			2.58243638390474	percent	Y

Results for: GCMS with Full Scan**Unique ID:** W13/007593_DISS_GCMS-Scan/02**Instrument / Type:** GCMS with Full Scan Run: 2**for Analysis:** Whole Oils**Preparation:** Dissolved in solvent**Analysis Date:** 18/11/2016**Method ID/s:****Linked Image:** [LinkedFiles\GAB_BCH1\GCMS\W13_007593_int_WholeOil.jpg](#)**Sample Volume:****Volume Units:****Extract Volume:****Dilution Factor:****Comment:** Interior

Results for: GCMS with Full Scan



Data Sheet:

(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Respse:	Value:	units:	Qualifier:
Aliph	Botryococcane	39.4290			ug/L	U
Aliph	nC10	0.0000			ug/L	U
Aliph	nC11	0.0000			ug/L	U
Aliph	nC12	12.2580			ug/L	U
Aliph	nC13	14.5950			ug/L	U
Aliph	nC14	16.8180			ug/L	U
Aliph	nC15	18.9260			ug/L	U
Aliph	nC16	20.9240			ug/L	U
Aliph	nC17	22.8190			ug/L	U
Aliph	nC18	24.6230			ug/L	U
Aliph	nC19	26.3410			ug/L	U
Aliph	nC20	27.9810			ug/L	U
Aliph	nC21	29.5510			ug/L	U
Aliph	nC22	31.0540			ug/L	U
Aliph	nC23	32.4960			ug/L	U
Aliph	nC24	33.8800			ug/L	U
Aliph	nC25	35.2120			ug/L	U
Aliph	nC26	36.4960			ug/L	U
Aliph	nC27	37.7300			ug/L	U
Aliph	nC28	38.9260			ug/L	U
Aliph	nC29	40.0740	653408		ug/L	Z
Aliph	nC30	41.1930	2227540		ug/L	Z
Aliph	nC31	42.2750	4329756		ug/L	Z
Aliph	nC32	43.3560	4868228		ug/L	Z
Aliph	nC33	44.5840	4371383		ug/L	Z
Aliph	nC34	46.0130	2986739		ug/L	Z
Aliph	nC35	47.7140	2427879		ug/L	Z
Aliph	nC36	49.7870	1796815		ug/L	Z
Aliph	nC37	52.2630	1356619		ug/L	Z
Aliph	nC38	55.2360	1299166		ug/L	Z
Aliph	nC39	58.9110	1269478		ug/L	Z
Aliph	Norpristane	21.8010			ug/L	U
Aliph	Phytane	24.7190			ug/L	U
Aliph	Pristane	22.8660			ug/L	U

Results for: GCMS with Full Scan**Qualifier codes:**

A	TIC is a possible aldol-condensation product
B	Analyte was also detected in the blank
D	Compound quantitated on a diluted sample
E	Inorganics: Estimated due to interference Organics: Concentration exceeds the calibration range of the instrument
J	Estimated - Result is \geq the Method Detection Limit (MDL) and $<$ the Limit of Quantitation (LOQ)
M	Duplicate injection precision not met
N	Spike sample not within control limits
O	Presumptive evidence of a compound
P	Concentration difference between primary and confirmation columns $> 25\%$
R	Spike/Surrogate failed recovery limits
S	Method of standard additions (MSA) used for calculation
T	Detected but Quantitated amount exceeded maximum
U	Compound Not Detected
V	overloaded and possibly not a water extract
X	Duplicate analysis not within control limits
Y	Detected
Z	Detected but not Quantified (too small)

Sample ID : **W13/007969**

Beach E1: Waitpinga Beach Visit: 3

Comments:

Location: Upper Intertidal

Local Date Time: 19/10/2016 9:52:14 AM

Type: Waxy Bitumen

Family: Type IV waxy bitumen (no botryococcane, hig

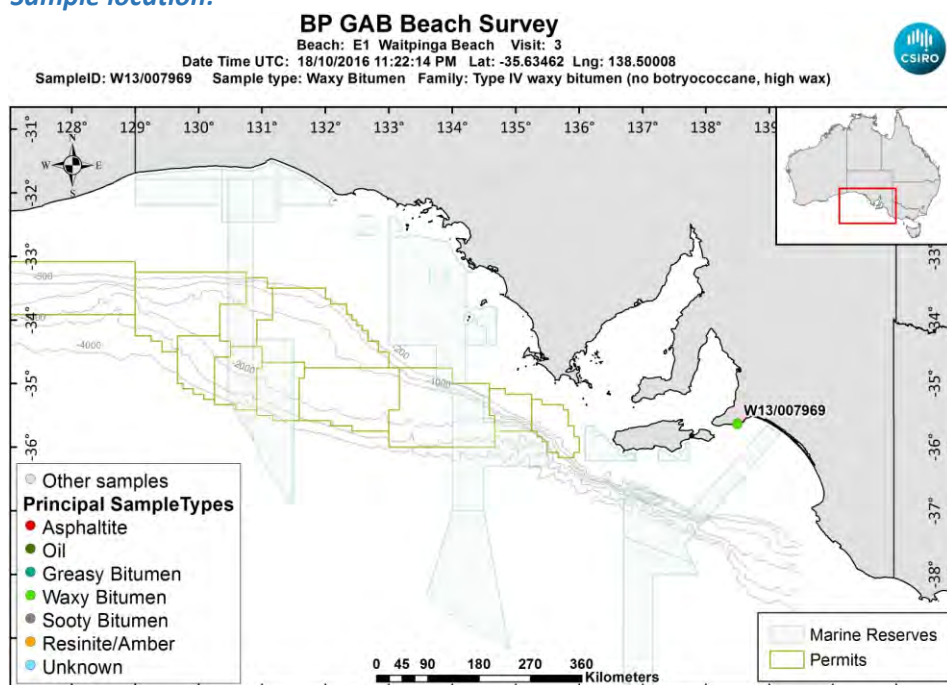
Size (cm): 5.1

Latitude (Y): -35.634618

Weight (gm): 21.0471

Longitude (X): 138.500082

Sample location:



[LinkedFiles\GAB_BCH1\SampleLocations\W13_007969_Location.jpg](#)

Sample - field image:



[LinkedFiles\GAB_BCH1\Samples\W13_007969_146A6851.JPG](#)

Sample - laboratory image:



[LinkedFiles\GAB BCH1\Samples\W13_007969_Photo02.JPG](#)

Analyses Requested

Split:	Analysis:	Sent:
1	Bitumen Determination	YES
4	Biomarkers	YES

Analyses Completed:

Analysis:	Instrument/Type:
Biomarkers	Gas Chromatography Mass Spectrometry Run: 1
Elemental CHNS	Elemental Analyser Run: 1
Whole Oils	GCMS with Full Scan Run: 2
Whole Oils	GCMS with Full Scan Run: 1

Sample Analyses Completed:

Results for: Gas Chromatography Mass Spectrometry

Unique ID: W13/007969_DISS_GC-MS/01

Instrument / Type: Gas Chromatography Mass Spectrometry Run: 1

for Analysis: Biomarkers

Analysis Date: 18/07/2017

Linked Image: [None available](#)

Preparation: Dissolved in solvent

Method ID/s:

Sample Volume:

Volume Units:

Extract Volume:

Dilution Factor:

Comment: Internal Ratios only

Results for: Gas Chromatography Mass Spectrometry

Data Sheet:

(default units ppb)

Type:	Compound / Variable:	Retention Time:	Target Response:	Value:	units:	Qualifier:
BiomRatio	% C27 aaa 20R			36.7135563318573	ratio	Y
BiomRatio	% C27 abb 20(R+S)			34.4301704937224	ratio	Y
BiomRatio	% C28 aaa 20R			31.309074552231	ratio	Y
BiomRatio	% C28 abb 20(R+S)			35.0868838390603	ratio	Y
BiomRatio	% C29 aaa 20R			31.9773691159117	ratio	Y
BiomRatio	% C29 abb 20(R+S)			30.4829456672173	ratio	Y
BiomRatio	(C21+C22)/(C27+C28+C29)			0.514090625950732	ratio	Y
BiomRatio	25-Nor/C30H			0	ratio	U
BiomRatio	C19t/C23t			0	ratio	U
BiomRatio	C22t/C21t			0	ratio	U
BiomRatio	C22t/C24t			0	ratio	U
BiomRatio	C23t/C30H			0.314610386923236	ratio	Y
BiomRatio	C24t/C23t			0.433922257765805	ratio	Y
BiomRatio	C24Tet/C23t			0.136164660324943	ratio	Y
BiomRatio	C24Tet/C26t			0.128318913156655	ratio	Y
BiomRatio	C24Tet/C30H			4.28388164701014E-02	ratio	Y
BiomRatio	C26t/C25t			2.52887038732085	ratio	Y
BiomRatio	C27 Dia/(Dia+Reg)			0.71329130659235	ratio	Y
BiomRatio	C27 Dia/Ster			0.962067429265617	ratio	Y
BiomRatio	C28BNH/C30H			5.54868611628388E-02	ratio	Y
BiomRatio	C29/C27 abb Sterane Ratio			0.885355641000243	ratio	Y
BiomRatio	C29H/C30H			0.59255617628802	ratio	Y
BiomRatio	C29Ts/(C29Ts+C29H)			0.14652533401997	ratio	Y
BiomRatio	C30DiaH/C30H			0.210189944134078	ratio	Y
BiomRatio	C30Ts/C30H			1.26314918270226E-02	ratio	Y
BiomRatio	C35 Homohopane Index			6.43942801960185E-02	ratio	Y
BiomRatio	C35HS/C34HS			0.748775862556961	ratio	Y
BiomRatio	Gam/C30H			1.89116490792468E-02	ratio	Y
BiomRatio	Gam/C31HR			0.103017023732237	ratio	Y
BiomRatio	Ole/C30H			2.45959031657356E-02	ratio	Y
BiomRatio	Sterane/hopane			2.33498069555848	ratio	Y
BiomRatio	Steranes/Terpanes			1.6499131433005	ratio	Y
BiomRatio	Tricyclic/Pentacyclic Terpanes			0.415214312971388	ratio	Y

Results for: Elemental Analyser

Unique ID: W13/007969_SPE_ELEM-AN/01

Instrument / Type: Elemental Analyser Run: 1

for Analysis: Elemental CHNS

Analysis Date: 30/10/2017

Linked Image: [None available](#)

Preparation: Solid Phase Extract

Method ID/s:

Sample Volume:

Volume Units:

Extract Volume:

Dilution Factor:

Comment:

Results for: Elemental Analyser**Data Sheet:**

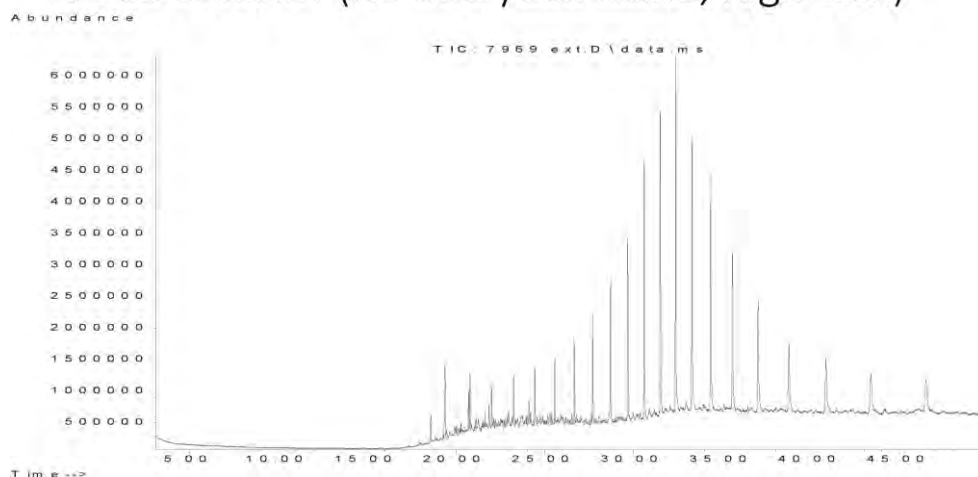
(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Respns:	Value:	units:	Qualifier:
Inorg	Carbon			84.37	percent	Y
Inorg	Hydrogen			6.84570775347913	percent	Y
Inorg	Nitrogen			0.107824507283633	percent	Y
Inorg	Sulphur			1.20884375632689	percent	Y

Results for: GCMS with Full Scan**Unique ID:** W13/007969_DISS_GCMS-Scan/01**Instrument / Type:** GCMS with Full Scan Run: 1**for Analysis:** Whole Oils**Preparation:** Dissolved in solvent**Analysis Date:** 30/10/2017**Method ID/s:****Linked Image:** [LinkedFiles\GAB_BCH1\GCMS\W13_007969_bulk_WholeOil.jpg](#)**Sample Volume:****Volume Units:****Extract Volume:****Dilution Factor:****Comment:** Bulk bulk

Results for: GCMS with Full Scan

7969 exterior (no botryococcane, high wax)



Data Sheet:

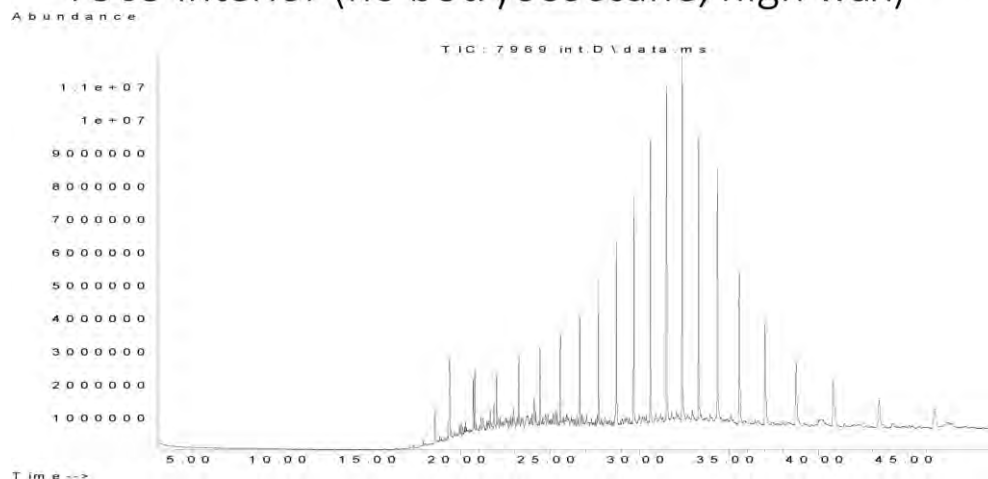
(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Respnse:	Value:	units:	Qualifier:
Aliph	Botryococcane	31.9240				U
Aliph	nC10	7.5110				U
Aliph	nC11	9.4450				U
Aliph	nC12	11.3220				U
Aliph	nC13	13.1110				U
Aliph	nC14	14.8030				U
Aliph	nC15	16.4030				U
Aliph	nC16	17.9160	325879			Z
Aliph	nC17	19.3500	856580			Z
Aliph	nC18	20.7170	3190259			Z
Aliph	nC19	22.0170	3403737			Z
Aliph	nC20	23.2570	4052605			Z
Aliph	nC21	24.4410	4589895			Z
Aliph	nC22	25.5760	5345563			Z
Aliph	nC23	26.6620	6224352			Z
Aliph	nC24	27.7060	8313854			Z
Aliph	nC25	28.7100	10427253			Z
Aliph	nC26	29.6680	15519868			Z
Aliph	nC27	30.6080	21837558			Z
Aliph	nC28	31.5080	26119795			Z
Aliph	nC29	32.3700	30318828			Z
Aliph	nC30	33.2910	25816339			Z
Aliph	nC31	34.3470	25404669			Z
Aliph	nC32	35.5720	20208950			Z
Aliph	nC33	37.0130	17998026			Z
Aliph	nC34	38.7280	13074979			Z
Aliph	nC35	40.8080	12178609			Z
Aliph	nC36	43.3510	10088869			Z
Aliph	nC37	46.4710	10389185			Z
Aliph	nC8	4.0300				U
Aliph	nC9	5.6200				U
Aliph	Norpristane	18.5830	3327302			Z
Aliph	Phytane	20.7870	5411224			Z
Aliph	Pristane	19.3870	6839790			Z

Results for: GCMS with Full Scan**Results for: GCMS with Full Scan****Unique ID:** W13/007969 DISS GCMS-Scan/02**Instrument / Type:** GCMS with Full Scan Run: 2**for Analysis:** Whole Oils**Preparation:** Dissolved in solvent**Analysis Date:** 30/10/2017**Method ID/s:****Linked Image:** [LinkedFiles\GAB_BCH1\GCMS\W13_007969_int_WholeOil.jpg](#)**Sample Volume:****Volume Units:****Extract Volume:****Dilution Factor:****Comment:** Interior

Results for: GCMS with Full Scan

7969 interior (no botryococcane, high wax)



Data Sheet:

(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Respnse:	Value:	units:	Qualifier:
Aliph	Botryococcane	31.9240				U
Aliph	nC10	7.5110				U
Aliph	nC11	9.4450				U
Aliph	nC12	11.3220				U
Aliph	nC13	13.1110				U
Aliph	nC14	14.8030				U
Aliph	nC15	16.4030	168439			Z
Aliph	nC16	17.9160	662453			Z
Aliph	nC17	19.3500	1950459			Z
Aliph	nC18	20.7170	7222785			Z
Aliph	nC19	22.0170	9772711			Z
Aliph	nC20	23.2570	10145864			Z
Aliph	nC21	24.4410	11237213			Z
Aliph	nC22	25.5760	13391001			Z
Aliph	nC23	26.6620	15767783			Z
Aliph	nC24	27.7060	20276612			Z
Aliph	nC25	28.7100	26351199			Z
Aliph	nC26	29.6680	35010175			Z
Aliph	nC27	30.6080	44660782			Z
Aliph	nC28	31.5080	51337358			Z
Aliph	nC29	32.3700	57609915			Z
Aliph	nC30	33.2910	49341462			Z
Aliph	nC31	34.3470	50628730			Z
Aliph	nC32	35.5720	37385497			Z
Aliph	nC33	37.0130	29319020			Z
Aliph	nC34	38.7280	23233567			Z
Aliph	nC35	40.8080	19841822			Z
Aliph	nC36	43.3510	13901563			Z
Aliph	nC37	46.4710	11692989			Z
Aliph	nC8	4.0300				U
Aliph	nC9	5.6200				U
Aliph	Norpristane	18.5830	7168085			Z
Aliph	Phytane	20.7870	10894796			Z
Aliph	Pristane	19.3870	12947684			Z

Results for: GCMS with Full Scan**Qualifier codes:**

A	TIC is a possible aldol-condensation product
B	Analyte was also detected in the blank
D	Compound quantitated on a diluted sample
E	Inorganics: Estimated due to interference Organics: Concentration exceeds the calibration range of the instrument
J	Estimated - Result is \geq the Method Detection Limit (MDL) and $<$ the Limit of Quantitation (LOQ)
M	Duplicate injection precision not met
N	Spike sample not within control limits
O	Presumptive evidence of a compound
P	Concentration difference between primary and confirmation columns $> 25\%$
R	Spike/Surrogate failed recovery limits
S	Method of standard additions (MSA) used for calculation
T	Detected but Quantitated amount exceeded maximum
U	Compound Not Detected
V	overloaded and possibly not a water extract
X	Duplicate analysis not within control limits
Y	Detected
Z	Detected but not Quantified (too small)

Sample ID : **W13/007970**

Beach E1: Waitpinga Beach Visit: 3

Comments:

Location: Mid Intertidal

Local Date Time: 19/10/2016 10:22:53 AM

Type: Unknown

Family: Not bitumen (false sample)

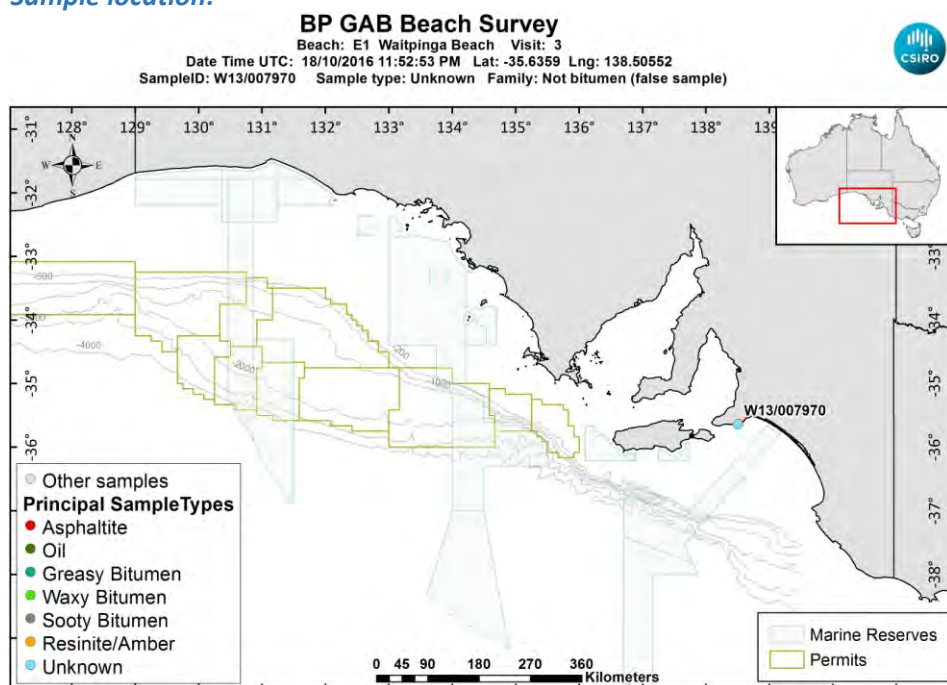
Size (cm): 1.5

Latitude (Y): -35.635895

Weight (gm): 0.813

Longitude (X): 138.505523

Sample location:



[LinkedFiles\GAB_BCH1\SampleLocations\W13_007970_Location.jpg](#)

Sample - field image:



[LinkedFiles\GAB_BCH1\Samples\W13_007970_146A6853.JPG](#)

Sample - laboratory image:



[LinkedFiles\GAB_BCH1\Samples\W13_007970_Photo02.JPG](#)

Analyses Requested

Split:	Analysis:	Sent:
1	Bitumen Determination	YES

Analyses Completed:

Analysis:	Instrument/Type:
Whole Oils	GCMS with Full Scan Run: 1

Sample Analyses Completed:**Results for: GCMS with Full Scan**

Unique ID: W13/007970 DISS GCMS-Scan/01

Instrument / Type: GCMS with Full Scan Run: 1

for Analysis: Whole Oils

Analysis Date: 30/10/2017

Linked Image: [None available](#)

Preparation: Dissolved in solvent

Method ID/s:

Sample Volume:

Volume Units:

Extract Volume:

Dilution Factor:

Comment:

Results for: GCMS with Full Scan

Data Sheet:

(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Respns:	Value:	units:	Qualifier:
Aliph	Botryococcane	31.9240				U
Aliph	nC10	7.5110				U
Aliph	nC11	9.4450				U
Aliph	nC12	11.3220				U
Aliph	nC13	13.1110				U
Aliph	nC14	14.8030				U
Aliph	nC15	16.4030				U
Aliph	nC16	17.9160				U
Aliph	nC17	19.3500				U
Aliph	nC18	20.7170				U
Aliph	nC19	22.0170				U
Aliph	nC20	23.2570				U
Aliph	nC21	24.4410				U
Aliph	nC22	25.5760				U
Aliph	nC23	26.6620				U
Aliph	nC24	27.7060				U
Aliph	nC25	28.7100				U
Aliph	nC26	29.6680				U
Aliph	nC27	30.6080				U
Aliph	nC28	31.5080				U
Aliph	nC29	32.3700				U
Aliph	nC30	33.2910				U
Aliph	nC31	34.3470				U
Aliph	nC32	35.5720				U
Aliph	nC33	37.0130				U
Aliph	nC34	38.7280				U
Aliph	nC35	40.8080				U
Aliph	nC36	43.3510				U
Aliph	nC37	46.4710				U
Aliph	nC8	4.0300				U
Aliph	nC9	5.6200				U
Aliph	Norpristane	18.5830				U
Aliph	Phytane	20.7870				U
Aliph	Pristane	19.3870				U

Qualifier codes:

A	TIC is a possible aldol-condensation product
B	Analyte was also detected in the blank
D	Compound quantitated on a diluted sample
E	Inorganics: Estimated due to interference Organics: Concentration exceeds the calibration range of the instrument
J	Estimated - Result is \geq the Method Detection Limit (MDL) and $<$ the Limit of Quantitation (LOQ)
M	Duplicate injection precision not met
N	Spike sample not within control limits
O	Presumptive evidence of a compound
P	Concentration difference between primary and confirmation columns $> 25\%$
R	Spike/Surrogate failed recovery limits
S	Method of standard additions (MSA) used for calculation
T	Detected but Quantitated amount exceeded maximum
U	Compound Not Detected
V	overloaded and possibly not a water extract
X	Duplicate analysis not within control limits
Y	Detected
Z	Detected but not Quantified (too small)

Sample ID : **W13/007971**

Beach E1: Waitpinga Beach Visit: 3

Comments:

Location: Mid Intertidal

Local Date Time: 19/10/2016 10:24:09 AM

Type: Waxy Bitumen

Family: Type I waxy bitumen (high botryococcane)

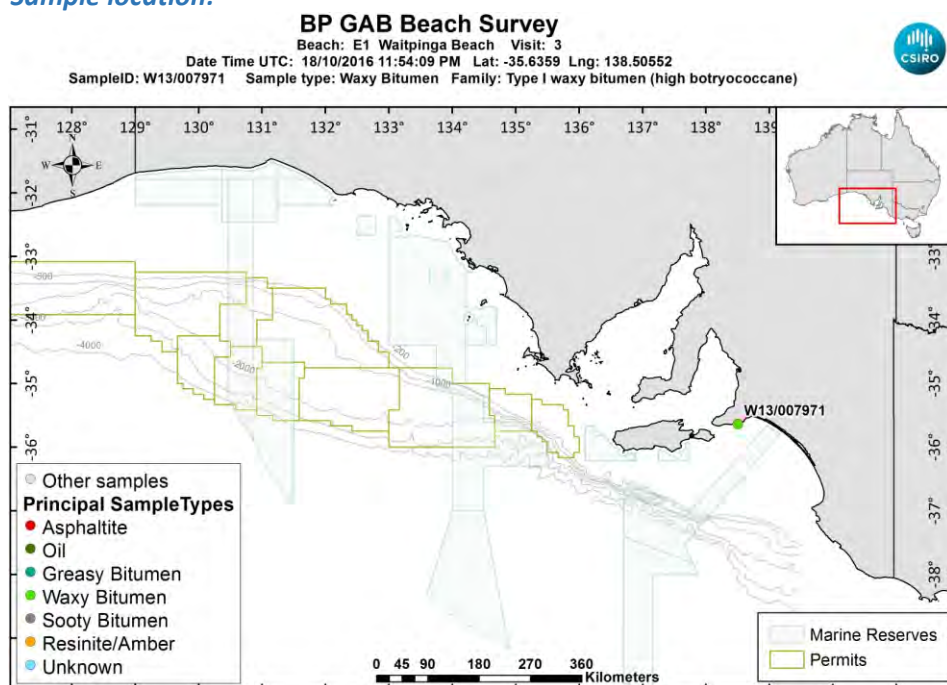
Size (cm): 1.9

Latitude (Y): -35.635897

Weight (gm): 1.80168

Longitude (X): 138.505523

Sample location:



[LinkedFiles\GAB_BCH1\SampleLocations\W13_007971_Location.jpg](#)

Sample - field image:



[LinkedFiles\GAB_BCH1\Samples\W13_007971_146A6855.JPG](#)

Sample - laboratory image:



[LinkedFiles\GAB_BCH1\Samples\W13_007971_Photo02.JPG](#)

Analyses Requested

Split: Analysis: Sent:
1 Bitumen Determination YES

Analyses Completed:

Analysis: Instrument/Type:
Elemental CHNS Elemental Analyser Run: 1
Whole Oils GCMS with Full Scan Run: 3

Sample Analyses Completed:

Results for: Elemental Analyser

Unique ID: **W13/007971_SPE_ELEM-AN/01**

Instrument / Type: Elemental Analyser Run: 1

for Analysis: Elemental CHNS

Analysis Date: 30/10/2017

Linked Image: [None available](#)

Preparation: Solid Phase Extract

Method ID/s:

Sample Volume: Volume Units: Extract Volume: Dilution Factor:
Comment:

Data Sheet:

Type:	Compound / Variable:	Retentn Time:	Target Respnse:	Value:	units:	Qualifier:
Inorg	Carbon			86.52	percent	Y
Inorg	Hydrogen			9.52675944333997	percent	Y
Inorg	Nitrogen			0.35158766066838	percent	Y
Inorg	Sulphur			2.17689959939225	percent	Y

Results for: GCMS with Full Scan

Unique ID: **W13/007971 DISS GCMS-Scan/03**

Instrument / Type: GCMS with Full Scan Run: 3

for Analysis: Whole Oils

Analysis Date: 30/10/2017

Linked Image: [LinkedFiles\GAB_BCH1\GCMS\W13_007971_bulk_WholeOil.jpg](#)

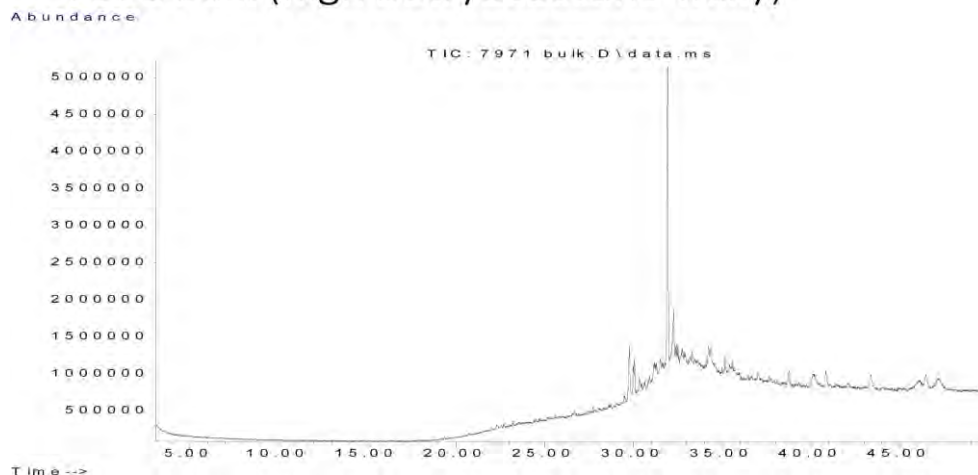
Preparation: Dissolved in solvent

Method ID/s:

Sample Volume: Volume Units: Extract Volume: Dilution Factor:
Comment: Bulk

Results for: GCMS with Full Scan

7971 bulk (high botryococcane waxy)



Data Sheet:

(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Respse:	Value:	units:	Qualifier:
Aliph	Botryococcane	31.9240	32425252			Z
Aliph	nC10	7.5110				U
Aliph	nC11	9.4450				U
Aliph	nC12	11.3220				U
Aliph	nC13	13.1110				U
Aliph	nC14	14.8030				U
Aliph	nC15	16.4030				U
Aliph	nC16	17.9160				U
Aliph	nC17	19.3500				U
Aliph	nC18	20.7170				U
Aliph	nC19	22.0170				U
Aliph	nC20	23.2570				U
Aliph	nC21	24.4410				U
Aliph	nC22	25.5760				U
Aliph	nC23	26.6620				U
Aliph	nC24	27.7060				U
Aliph	nC25	28.7100				U
Aliph	nC26	29.6680				U
Aliph	nC27	30.6080				U
Aliph	nC28	31.5080				U
Aliph	nC29	32.3700				U
Aliph	nC30	33.2910				U
Aliph	nC31	34.3470	4525226			Z
Aliph	nC32	35.5720	1077851			Z
Aliph	nC33	37.0130	1983842			Z
Aliph	nC34	38.7280	2703220			Z
Aliph	nC35	40.8080	3283346			Z
Aliph	nC36	43.3510	3083993			Z
Aliph	nC37	46.4710	3857150			Z
Aliph	nC8	4.0300				U
Aliph	nC9	5.6200				U
Aliph	Norpristane	18.5830				U
Aliph	Phytane	20.7870				U
Aliph	Pristane	19.3870				U

Results for: GCMS with Full Scan

Qualifier codes:

A	TIC is a possible aldol-condensation product
B	Analyte was also detected in the blank
D	Compound quantitated on a diluted sample
E	Inorganics: Estimated due to interference Organics: Concentration exceeds the calibration range of the instrument
J	Estimated - Result is \geq the Method Detection Limit (MDL) and < the Limit of Quantitation (LOQ)
M	Duplicate injection precision not met
N	Spike sample not within control limits
O	Presumptive evidence of a compound
P	Concentration difference between primary and confirmation columns > 25%
R	Spike/Surrogate failed recovery limits
S	Method of standard additions (MSA) used for calculation
T	Detected but Quantitated amount exceeded maximum
U	Compound Not Detected
V	overloaded and possibly not a water extract
X	Duplicate analysis not within control limits
Y	Detected
Z	Detected but not Quantified (too small)

Sample ID : **W13/007972**

Beach E1: Waitpinga Beach Visit: 3

Comments:

Location: Upper Intertidal

Local Date Time: 19/10/2016 10:28:36 AM

Type: Waxy Bitumen

Family: Unclassified high wax bitumen

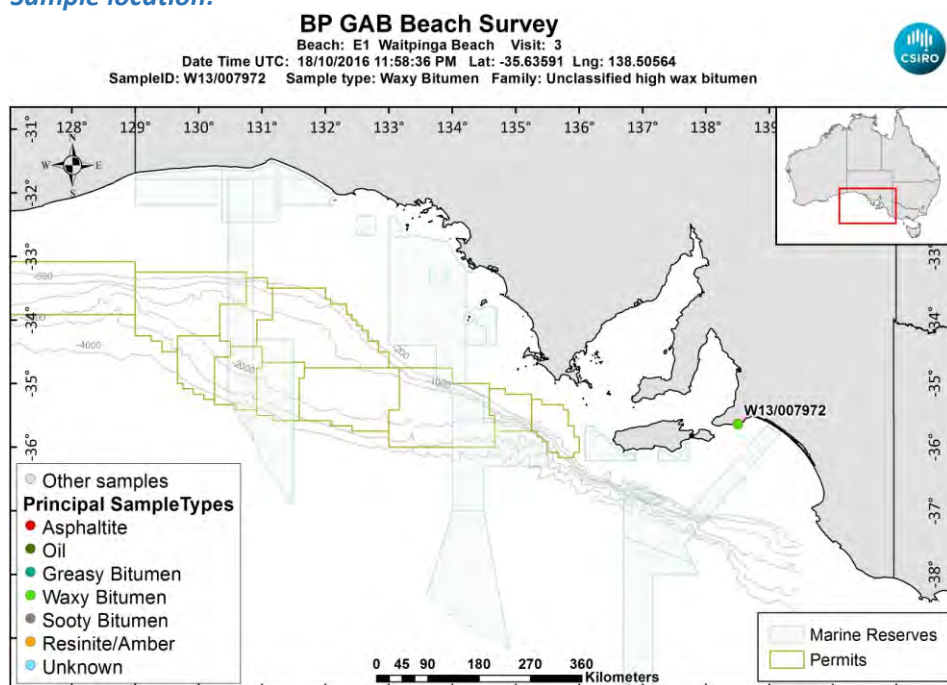
Size (cm): 3.1

Latitude (Y): -35.635915

Weight (gm): 5.80714

Longitude (X): 138.505642

Sample location:



[LinkedFiles\GAB_BCH1\SampleLocations\W13_007972_Location.jpg](#)

Sample - field image:



[LinkedFiles\GAB_BCH1\Samples\W13_007972_146A6857.JPG](#)

Sample - laboratory image:



[LinkedFiles\GAB_BCH1\Samples\W13_007972_Photo02.JPG](#)

Analyses Requested

Split:	Analysis:	Sent:
1	Bitumen Determination	YES
4	Biomarkers	YES

Analyses Completed:

Analysis:	Instrument/Type:
Biomarkers	Gas Chromatography Mass Spectrometry Run: 1
Elemental CHNS	Elemental Analyser Run: 1
Whole Oils	GCMS with Full Scan Run: 2
Whole Oils	GCMS with Full Scan Run: 1

Sample Analyses Completed:

Results for: Gas Chromatography Mass Spectrometry

Unique ID: W13/007972_DISS_GC-MS/01

Instrument / Type: Gas Chromatography Mass Spectrometry Run: 1

for Analysis: Biomarkers

Analysis Date: 18/07/2017

Linked Image: [None available](#)

Preparation: Dissolved in solvent

Method ID/s:

Sample Volume:

Volume Units:

Extract Volume:

Dilution Factor:

Comment: Internal Ratios only

Results for: Gas Chromatography Mass Spectrometry

Data Sheet:

(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Respns:	Value:	units:	Qualifier:
BiomRatio	% C27 aaa 20R			22.6864497398762	ratio	Y
BiomRatio	% C27 abb 20(R+S)			29.9779835463828	ratio	Y
BiomRatio	% C28 aaa 20R			41.8414214559175	ratio	Y
BiomRatio	% C28 abb 20(R+S)			37.0757265336483	ratio	Y
BiomRatio	% C29 aaa 20R			35.4721288042063	ratio	Y
BiomRatio	% C29 abb 20(R+S)			32.946289919969	ratio	Y
BiomRatio	(C21+C22)/(C27+C28+C29)			0.492843360775154	ratio	Y
BiomRatio	25-Nor/C30H			7.54119904165931E-02	ratio	Y
BiomRatio	C19t/C23t			0.283063922553531	ratio	Y
BiomRatio	C22t/C21t			0.117180402773905	ratio	Y
BiomRatio	C22t/C24t			0.123733272549411	ratio	Y
BiomRatio	C23t/C30H			0.551637888551052	ratio	Y
BiomRatio	C24t/C23t			0.591585618689635	ratio	Y
BiomRatio	C24Tet/C23t			0.151072305470809	ratio	Y
BiomRatio	C24Tet/C26t			0.329906014576329	ratio	Y
BiomRatio	C24Tet/C30H			8.33372076084565E-02	ratio	Y
BiomRatio	C26t/C25t			1.04011026174402	ratio	Y
BiomRatio	C27 Dia/(Dia+Reg)			0.740713011274723	ratio	Y
BiomRatio	C27 Dia/Ster			0.841614123943954	ratio	Y
BiomRatio	C28BNH/C30H			5.81575187282459E-02	ratio	Y
BiomRatio	C29/C27 abb Sterane Ratio			1.09901621198082	ratio	Y
BiomRatio	C29H/C30H			0.600655217408823	ratio	Y
BiomRatio	C29Ts/(C29Ts+C29H)			0.226316945126455	ratio	Y
BiomRatio	C30DiaH/C30H			0.245523662522742	ratio	Y
BiomRatio	C30Ts/C30H			4.99347572069266E-02	ratio	Y
BiomRatio	C35 Homohopane Index			4.54124766674042E-02	ratio	Y
BiomRatio	C35HS/C34HS			0.523547025997006	ratio	Y
BiomRatio	Gam/C30H			2.99310998912104E-02	ratio	Y
BiomRatio	Gam/C31HR			0.171460530520933	ratio	Y
BiomRatio	Ole/C30H			0.02513939641893	ratio	Y
BiomRatio	Sterane/hopane			2.65004178511186	ratio	Y
BiomRatio	Steranes/Terpanes			1.54569128138696	ratio	Y
BiomRatio	Tricyclic/Pentacyclic Terpanes			0.71447029366301	ratio	Y

Results for: Elemental Analyser

Unique ID: W13/007972_SPE_ELEM-AN/01

Instrument / Type: Elemental Analyser Run: 1

for Analysis: Elemental CHNS

Analysis Date: 30/10/2017

Linked Image: [None available](#)

Preparation: Solid Phase Extract

Method ID/s:

Sample Volume:

Volume Units:

Extract Volume:

Dilution Factor:

Comment:

Results for: Elemental Analyser**Data Sheet:**

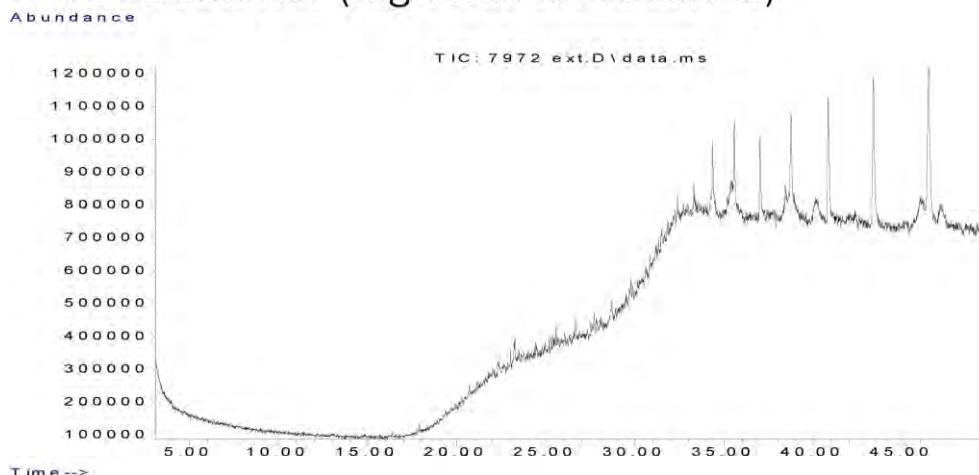
(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Respns:	Value:	units:	Qualifier:
Inorg	Carbon			84.78	percent	Y
Inorg	Hydrogen			10.3314536779324	percent	Y
Inorg	Nitrogen			0.194587832047986	percent	Y
Inorg	Sulphur			2.53902278672791	percent	Y

Results for: GCMS with Full Scan**Unique ID:** W13/007972_DISS_GCMS-Scan/01**Instrument / Type:** GCMS with Full Scan Run: 1**for Analysis:** Whole Oils**Preparation:** Dissolved in solvent**Analysis Date:** 30/10/2017**Method ID/s:****Linked Image:** [LinkedFiles\GAB_BCH1\GCMS\W13_007972_ext_WholeOil.jpg](#)**Sample Volume:****Volume Units:****Extract Volume:****Dilution Factor:****Comment:** Exterior

Results for: GCMS with Full Scan

7972 exterior (high wax unclassified)



Data Sheet:

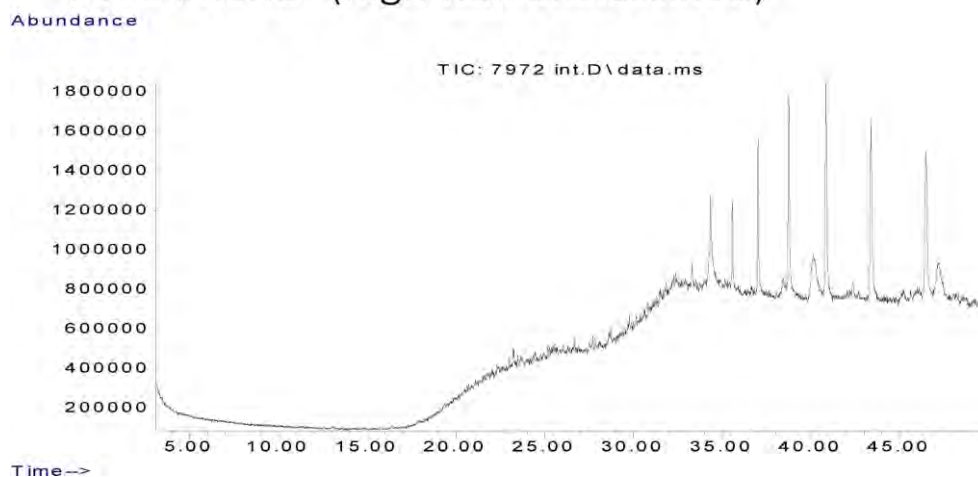
(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Respse:	Value:	units:	Qualifier:
Aliph	Botryococcane	31.9240				U
Aliph	nC10	7.5110				U
Aliph	nC11	9.4450				U
Aliph	nC12	11.3220				U
Aliph	nC13	13.1110				U
Aliph	nC14	14.8030				U
Aliph	nC15	16.4030				U
Aliph	nC16	17.9160				U
Aliph	nC17	19.3500				U
Aliph	nC18	20.7170				U
Aliph	nC19	22.0170				U
Aliph	nC20	23.2570				U
Aliph	nC21	24.4410				U
Aliph	nC22	25.5760				U
Aliph	nC23	26.6620				U
Aliph	nC24	27.7060				U
Aliph	nC25	28.7100				U
Aliph	nC26	29.6680				U
Aliph	nC27	30.6080				U
Aliph	nC28	31.5080				U
Aliph	nC29	32.3700				U
Aliph	nC30	33.2910				U
Aliph	nC31	34.3470	1404458			Z
Aliph	nC32	35.5720	1844888			Z
Aliph	nC33	37.0130	2461195			Z
Aliph	nC34	38.7280	3400694			Z
Aliph	nC35	40.8080	5456343			Z
Aliph	nC36	43.3510	6280360			Z
Aliph	nC37	46.4710	7364630			Z
Aliph	nC8	4.0300				U
Aliph	nC9	5.6200				U
Aliph	Norpristane	18.5830				U
Aliph	Phytane	20.7870				U
Aliph	Pristane	19.3870				U

Results for: GCMS with Full Scan**Results for: GCMS with Full Scan****Unique ID:** W13/007972 DISS GCMS-Scan/02**Instrument / Type:** GCMS with Full Scan Run: 2**for Analysis:** Whole Oils**Preparation:** Dissolved in solvent**Analysis Date:** 30/10/2017**Method ID/s:****Linked Image:** [LinkedFiles\GAB_BCH1\GCMS\W13_007972_int_WholeOil.jpg](#)**Sample Volume:****Volume Units:****Extract Volume:****Dilution Factor:****Comment:** Interior

Results for: GCMS with Full Scan

7972 interior (high wax unclassified)



Data Sheet:

(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Respse:	Value:	units:	Qualifier:
Aliph	Botryococcane	31.9240				U
Aliph	nC10	7.5110				U
Aliph	nC11	9.4450				U
Aliph	nC12	11.3220				U
Aliph	nC13	13.1110				U
Aliph	nC14	14.8030				U
Aliph	nC15	16.4030				U
Aliph	nC16	17.9160				U
Aliph	nC17	19.3500				U
Aliph	nC18	20.7170				U
Aliph	nC19	22.0170				U
Aliph	nC20	23.2570				U
Aliph	nC21	24.4410				U
Aliph	nC22	25.5760				U
Aliph	nC23	26.6620				U
Aliph	nC24	27.7060				U
Aliph	nC25	28.7100				U
Aliph	nC26	29.6680				U
Aliph	nC27	30.6080				U
Aliph	nC28	31.5080				U
Aliph	nC29	32.3700				U
Aliph	nC30	33.2910	603933			Z
Aliph	nC31	34.3470	4086194			Z
Aliph	nC32	35.5720	3891796			Z
Aliph	nC33	37.0130	7444807			Z
Aliph	nC34	38.7280	10573551			Z
Aliph	nC35	40.8080	13697240			Z
Aliph	nC36	43.3510	14177678			Z
Aliph	nC37	46.4710	14444739			Z
Aliph	nC8	4.0300				U
Aliph	nC9	5.6200				U
Aliph	Norpristane	18.5830				U
Aliph	Phytane	20.7870				U
Aliph	Pristane	19.3870				U

Results for: GCMS with Full Scan**Qualifier codes:**

A	TIC is a possible aldol-condensation product
B	Analyte was also detected in the blank
D	Compound quantitated on a diluted sample
E	Inorganics: Estimated due to interference Organics: Concentration exceeds the calibration range of the instrument
J	Estimated - Result is \geq the Method Detection Limit (MDL) and $<$ the Limit of Quantitation (LOQ)
M	Duplicate injection precision not met
N	Spike sample not within control limits
O	Presumptive evidence of a compound
P	Concentration difference between primary and confirmation columns $> 25\%$
R	Spike/Surrogate failed recovery limits
S	Method of standard additions (MSA) used for calculation
T	Detected but Quantitated amount exceeded maximum
U	Compound Not Detected
V	overloaded and possibly not a water extract
X	Duplicate analysis not within control limits
Y	Detected
Z	Detected but not Quantified (too small)

Sample ID : **W13/007973**

Beach E1: Waitpinga Beach Visit: 3

Comments:

On recent strandline

Location: Mid Intertidal

Local Date Time: 19/10/2016 10:37:32 AM

Type: Waxy Bitumen

Family: Type IV waxy bitumen (no botryococcane, hig

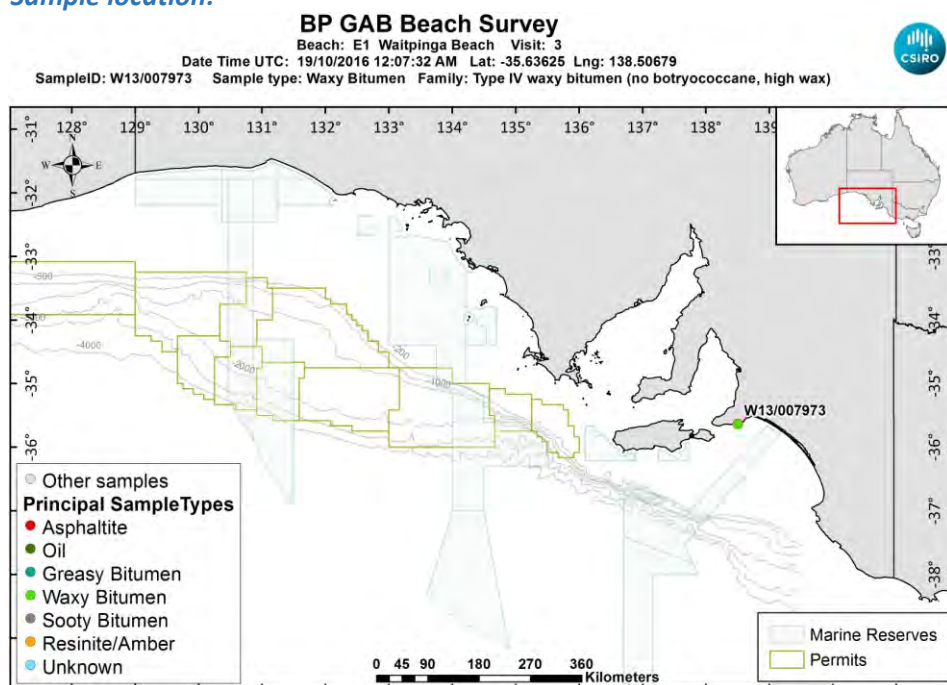
Size (cm): 3.5

Latitude (Y): -35.636247

Weight (gm): 5.5936

Longitude (X): 138.506790

Sample location:



[LinkedFiles\GAB_BCH1\SampleLocations\W13_007973_Location.jpg](#)

Sample - field image:



[LinkedFiles\GAB_BCH1\Samples\W13_007973_146A6859.JPG](#)

Sample - laboratory image:



[LinkedFiles\GAB_BCH1\Samples\W13_007973_Photo02.JPG](#)

Analyses Requested

Split:	Analysis:	Sent:
1	Bitumen Determination	YES
4	Biomarkers	YES

Analyses Completed:

Analysis:	Instrument/Type:
Biomarkers	Gas Chromatography Mass Spectrometry Run: 1
Elemental CHNS	Elemental Analyser Run: 1
Whole Oils	GCMS with Full Scan Run: 2
Whole Oils	GCMS with Full Scan Run: 1

Sample Analyses Completed:

Results for: Gas Chromatography Mass Spectrometry

Unique ID: W13/007973_DISS_GC-MS/01

Instrument / Type: Gas Chromatography Mass Spectrometry Run: 1

for Analysis: Biomarkers

Analysis Date: 18/07/2017

Linked Image: [None available](#)

Preparation: Dissolved in solvent

Method ID/s:

Sample Volume:

Volume Units:

Extract Volume:

Dilution Factor:

Comment: Internal Ratios only

Results for: Gas Chromatography Mass Spectrometry

Data Sheet:

(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Rspnse:	Value:	units:	Qualifier:
BiomRatio	% C27 aaa 20R			40.6656488800919	ratio	Y
BiomRatio	% C27 abb 20(R+S)			38.5015801141456	ratio	Y
BiomRatio	% C28 aaa 20R			29.1176119599524	ratio	Y
BiomRatio	% C28 abb 20(R+S)			32.817885948776	ratio	Y
BiomRatio	% C29 aaa 20R			30.2167391599557	ratio	Y
BiomRatio	% C29 abb 20(R+S)			28.6805339370784	ratio	Y
BiomRatio	(C21+C22)/(C27+C28+C29)			0.508946155667615	ratio	Y
BiomRatio	25-Nor/C30H			8.24064974774918E-02	ratio	Y
BiomRatio	C19t/C23t			0	ratio	U
BiomRatio	C22t/C21t			0	ratio	U
BiomRatio	C22t/C24t			0	ratio	U
BiomRatio	C23t/C30H			0.362877110188305	ratio	Y
BiomRatio	C24t/C23t			0.792144112610608	ratio	Y
BiomRatio	C24Tet/C23t			0.146647254512949	ratio	Y
BiomRatio	C24Tet/C26t			0.178691252033716	ratio	Y
BiomRatio	C24Tet/C30H			5.32149319347077E-02	ratio	Y
BiomRatio	C26t/C25t			1.72785604243762	ratio	Y
BiomRatio	C27 Dia/(Dia+Reg)			0.719098536085472	ratio	Y
BiomRatio	C27 Dia/Ster			0.97857237991523	ratio	Y
BiomRatio	C28BNH/C30H			0.119982699672334	ratio	Y
BiomRatio	C29/C27 abb Sterane Ratio			0.744918360546485	ratio	Y
BiomRatio	C29H/C30H			0.590384631177271	ratio	Y
BiomRatio	C29Ts/(C29Ts+C29H)			0.191608506937937	ratio	Y
BiomRatio	C30DiaH/C30H			0.232667507958972	ratio	Y
BiomRatio	C30Ts/C30H			0	ratio	U
BiomRatio	C35 Homohopane Index			6.37420648520904E-02	ratio	Y
BiomRatio	C35HS/C34HS			0.75811924381968	ratio	Y
BiomRatio	Gam/C30H			3.12363985754604E-02	ratio	Y
BiomRatio	Gam/C31HR			0.169212290171422	ratio	Y
BiomRatio	Ole/C30H			1.85650035175508E-02	ratio	Y
BiomRatio	Sterane/hopane			2.42764966682226	ratio	Y
BiomRatio	Steranes/Terpanes			1.6137616119096	ratio	Y
BiomRatio	Tricyclic/Pentacyclic Terpanes			0.504342183446516	ratio	Y

Results for: Elemental Analyser

Unique ID: W13/007973_SPE_ELEM-AN/01

Instrument / Type: Elemental Analyser Run: 1

for Analysis: Elemental CHNS

Analysis Date: 30/10/2017

Linked Image: [None available](#)

Preparation: Solid Phase Extract

Method ID/s:

Sample Volume:

Volume Units:

Extract Volume:

Dilution Factor:

Comment:

Results for: Elemental Analyser**Data Sheet:**

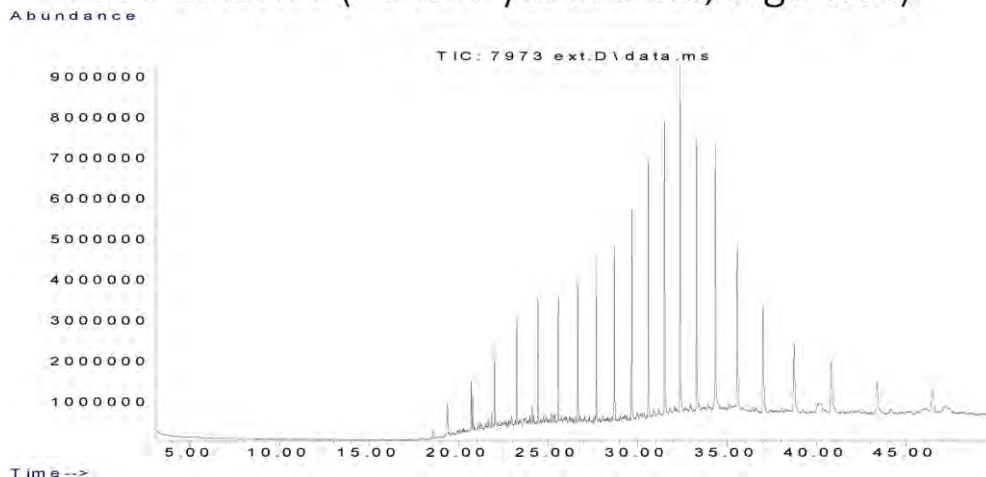
(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Respns:	Value:	units:	Qualifier:
Inorg	Carbon			84.3	percent	Y
Inorg	Hydrogen			6.33470278330019	percent	Y
Inorg	Nitrogen			9.69143101970865E-02	percent	Y
Inorg	Sulphur			1.12125265498458	percent	Y

Results for: GCMS with Full Scan**Unique ID:** W13/007973_DISS_GCMS-Scan/01**Instrument / Type:** GCMS with Full Scan Run: 1**for Analysis:** Whole Oils**Preparation:** Dissolved in solvent**Analysis Date:** 30/10/2017**Method ID/s:****Linked Image:** [LinkedFiles\GAB_BCH1\GCMS\W13_007973_ext_WholeOil.jpg](#)**Sample Volume:****Volume Units:****Extract Volume:****Dilution Factor:****Comment:** Exterior

Results for: GCMS with Full Scan

7973 exterior (no botryococcane, high wax)



Data Sheet:

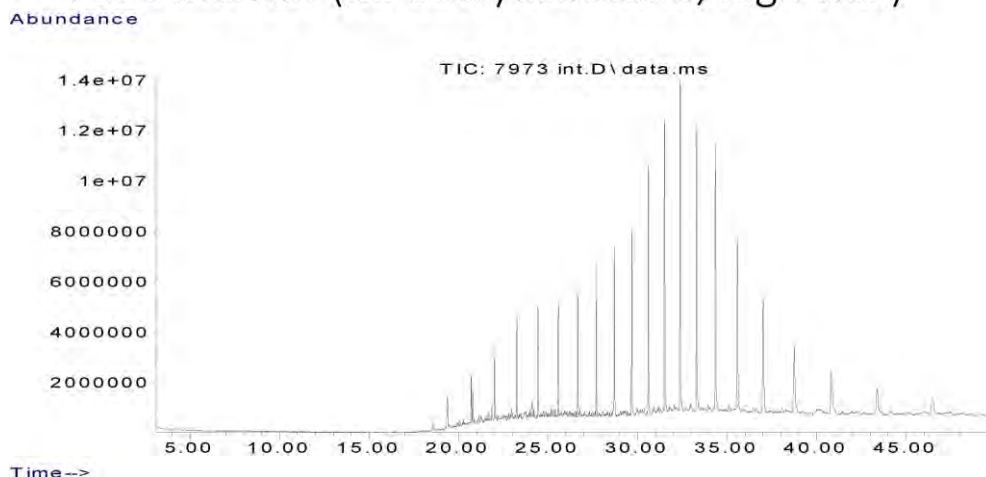
(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Respse:	Value:	units:	Qualifier:
Aliph	Botryococcane	31.9240				U
Aliph	nC10	7.5110				U
Aliph	nC11	9.4450				U
Aliph	nC12	11.3220				U
Aliph	nC13	13.1110				U
Aliph	nC14	14.8030				U
Aliph	nC15	16.4030				U
Aliph	nC16	17.9160	229862			Z
Aliph	nC17	19.3500	1274734			Z
Aliph	nC18	20.7170	5836806			Z
Aliph	nC19	22.0170	9519134			Z
Aliph	nC20	23.2570	12631456			Z
Aliph	nC21	24.4410	13715212			Z
Aliph	nC22	25.5760	15139711			Z
Aliph	nC23	26.6620	16226493			Z
Aliph	nC24	27.7060	18188666			Z
Aliph	nC25	28.7100	22107494			Z
Aliph	nC26	29.6680	26497993			Z
Aliph	nC27	30.6080	33446085			Z
Aliph	nC28	31.5080	39217257			Z
Aliph	nC29	32.3700	44855641			Z
Aliph	nC30	33.2910	39021016			Z
Aliph	nC31	34.3470	43639209			Z
Aliph	nC32	35.5720	31441580			Z
Aliph	nC33	37.0130	25306523			Z
Aliph	nC34	38.7280	18348859			Z
Aliph	nC35	40.8080	15982516			Z
Aliph	nC36	43.3510	12686826			Z
Aliph	nC37	46.4710	10118084			Z
Aliph	nC8	4.0300				U
Aliph	nC9	5.6200				U
Aliph	Norpristane	18.5830	1452078			Z
Aliph	Phytane	20.7870	4887452			Z
Aliph	Pristane	19.3870	4546564			Z

Results for: GCMS with Full Scan**Results for: GCMS with Full Scan****Unique ID:** W13/007973 DISS GCMS-Scan/02**Instrument / Type:** GCMS with Full Scan Run: 2**for Analysis:** Whole Oils**Preparation:** Dissolved in solvent**Analysis Date:** 30/10/2017**Method ID/s:****Linked Image:** [LinkedFiles\GAB_BCH1\GCMS\W13_007973_int_WholeOil.jpg](#)**Sample Volume:****Volume Units:****Extract Volume:****Dilution Factor:****Comment:** Interior

Results for: GCMS with Full Scan

7973 interior (no botryococcane, high wax)



Data Sheet:

(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Respse:	Value:	units:	Qualifier:
Aliph	Botryococcane	31.9240				U
Aliph	nC10	7.5110				U
Aliph	nC11	9.4450				U
Aliph	nC12	11.3220				U
Aliph	nC13	13.1110				U
Aliph	nC14	14.8030				U
Aliph	nC15	16.4030				U
Aliph	nC16	17.9160	339147			Z
Aliph	nC17	19.3500	5101205			Z
Aliph	nC18	20.7170	8829085			Z
Aliph	nC19	22.0170	13951018			Z
Aliph	nC20	23.2570	18393596			Z
Aliph	nC21	24.4410	20118706			Z
Aliph	nC22	25.5760	22331354			Z
Aliph	nC23	26.6620	23435356			Z
Aliph	nC24	27.7060	26627148			Z
Aliph	nC25	28.7100	30719294			Z
Aliph	nC26	29.6680	37537976			Z
Aliph	nC27	30.6080	49846299			Z
Aliph	nC28	31.5080	59456662			Z
Aliph	nC29	32.3700	71116419			Z
Aliph	nC30	33.2910	64846542			Z
Aliph	nC31	34.3470	68389767			Z
Aliph	nC32	35.5720	52607884			Z
Aliph	nC33	37.0130	42047796			Z
Aliph	nC34	38.7280	28357609			Z
Aliph	nC35	40.8080	23842088			Z
Aliph	nC36	43.3510	16467978			Z
Aliph	nC37	46.4710	13542812			Z
Aliph	nC8	4.0300				U
Aliph	nC9	5.6200				U
Aliph	Norpristane	18.5830	2450959			Z
Aliph	Phytane	20.7870	7257955			Z
Aliph	Pristane	19.3870	7881325			Z

Results for: GCMS with Full Scan

Qualifier codes:

A	TIC is a possible aldol-condensation product
B	Analyte was also detected in the blank
D	Compound quantitated on a diluted sample
E	Inorganics: Estimated due to interference Organics: Concentration exceeds the calibration range of the instrument
J	Estimated - Result is \geq the Method Detection Limit (MDL) and < the Limit of Quantitation (LOQ)
M	Duplicate injection precision not met
N	Spike sample not within control limits
O	Presumptive evidence of a compound
P	Concentration difference between primary and confirmation columns > 25%
R	Spike/Surrogate failed recovery limits
S	Method of standard additions (MSA) used for calculation
T	Detected but Quantitated amount exceeded maximum
U	Compound Not Detected
V	overloaded and possibly not a water extract
X	Duplicate analysis not within control limits
Y	Detected
Z	Detected but not Quantified (too small)

Sample ID : **W13/007974**

Beach E1: Waitpinga Beach Visit: 3

Comments:

Location: Mid Intertidal

Local Date Time: 19/10/2016 10:51:23 AM

Type: Waxy Bitumen

Family: Type IV waxy bitumen (no botryococcane, hig

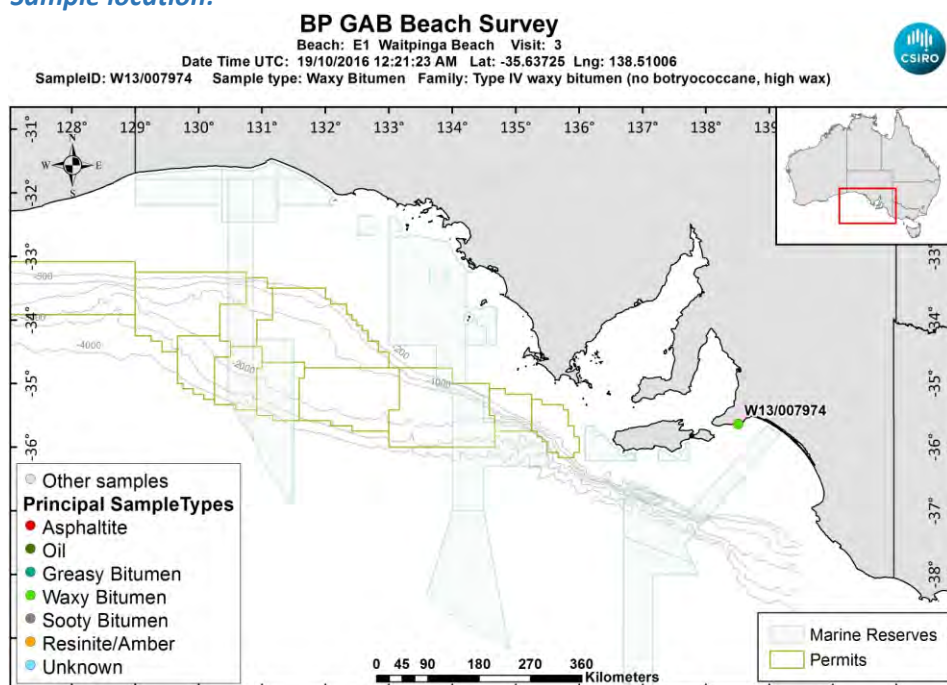
Size (cm): 1.7

Latitude (Y): -35.637250

Weight (gm): 0.91189

Longitude (X): 138.510058

Sample location:



[LinkedFiles\GAB_BCH1\SampleLocations\W13_007974_Location.jpg](#)

Sample - field image:



[LinkedFiles\GAB_BCH1\Samples\W13_007974_146A6861.JPG](#)

Sample - laboratory image:



[LinkedFiles\GAB_BCH1\Samples\W13_007974_Photo02.JPG](#)

Analyses Requested

Split:	Analysis:	Sent:
1	Bitumen Determination	YES
4	Biomarkers	YES

Analyses Completed:

Analysis:	Instrument/Type:
Biomarkers	Gas Chromatography Mass Spectrometry Run: 1
Elemental CHNS	Elemental Analyser Run: 1
Whole Oils	GCMS with Full Scan Run: 3

Sample Analyses Completed:

Results for: Gas Chromatography Mass Spectrometry

Unique ID: W13/007974 DISS GC-MS/01

Instrument / Type: Gas Chromatography Mass Spectrometry Run: 1

for Analysis: Biomarkers

Analysis Date: 18/07/2017

Linked Image: [None available](#)

Preparation: Dissolved in solvent

Method ID/s:

Sample Volume:

Volume Units:

Extract Volume:

Dilution Factor:

Comment: Bulk Ratios only

Results for: Gas Chromatography Mass Spectrometry

Data Sheet:

(default units ppb)

Type:	Compound / Variable:	Retention Time:	Target Response:	Value:	units:	Qualifier:
BiomRatio	% C27 aaa 20R			31.2474820272702	ratio	Y
BiomRatio	% C27 abb 20(R+S)			26.3037957475533	ratio	Y
BiomRatio	% C28 aaa 20R			34.1553488455375	ratio	Y
BiomRatio	% C28 abb 20(R+S)			39.5225812349041	ratio	Y
BiomRatio	% C29 aaa 20R			34.5971691271923	ratio	Y
BiomRatio	% C29 abb 20(R+S)			34.1736230175425	ratio	Y
BiomRatio	(C21+C22)/(C27+C28+C29)			0.700469941170328	ratio	Y
BiomRatio	25-Nor/C30H			0.122925394656179	ratio	Y
BiomRatio	C19t/C23t			0.127639721214449	ratio	Y
BiomRatio	C22t/C21t			2.92313911976922E-02	ratio	Y
BiomRatio	C22t/C24t			1.98766214402863E-02	ratio	Y
BiomRatio	C23t/C30H			0.604604508785186	ratio	Y
BiomRatio	C24t/C23t			0.722982964976639	ratio	Y
BiomRatio	C24Tet/C23t			0.158614022145194	ratio	Y
BiomRatio	C24Tet/C26t			0.278904190730046	ratio	Y
BiomRatio	C24Tet/C30H			9.58987529455373E-02	ratio	Y
BiomRatio	C26t/C25t			0.994462934055901	ratio	Y
BiomRatio	C27 Dia/(Dia+Reg)			0.753662514055089	ratio	Y
BiomRatio	C27 Dia/Ster			0.824096960016988	ratio	Y
BiomRatio	C28BNH/C30H			0.125118890746787	ratio	Y
BiomRatio	C29/C27 abb Sterane Ratio			1.29918979547738	ratio	Y
BiomRatio	C29H/C30H			0.577280512915557	ratio	Y
BiomRatio	C29Ts/(C29Ts+C29H)			0.222890278006251	ratio	Y
BiomRatio	C30DiaH/C30H			0.27821758585083	ratio	Y
BiomRatio	C30Ts/C30H			5.48048155080377E-02	ratio	Y
BiomRatio	C35 Homohopane Index			5.74893836623767E-02	ratio	Y
BiomRatio	C35HS/C34HS			0.58255829185224	ratio	Y
BiomRatio	Gam/C30H			3.23342097813225E-02	ratio	Y
BiomRatio	Gam/C31HR			0.168490315733616	ratio	Y
BiomRatio	Ole/C30H			3.17619048588892E-02	ratio	Y
BiomRatio	Sterane/hopane			2.5366223896499	ratio	Y
BiomRatio	Steranes/Terpanes			1.46952000470167	ratio	Y
BiomRatio	Tricyclic/Pentacyclic Terpanes			0.72615709996059	ratio	Y

Results for: Elemental Analyser

Unique ID: W13/007974_SPE_ELEM-AN/01

Instrument / Type: Elemental Analyser Run: 1

for Analysis: Elemental CHNS

Analysis Date: 30/10/2017

Linked Image: [None available](#)

Preparation: Solid Phase Extract

Method ID/s:

Sample Volume:

Volume Units:

Extract Volume:

Dilution Factor:

Comment:

Results for: Elemental Analyser**Data Sheet:**

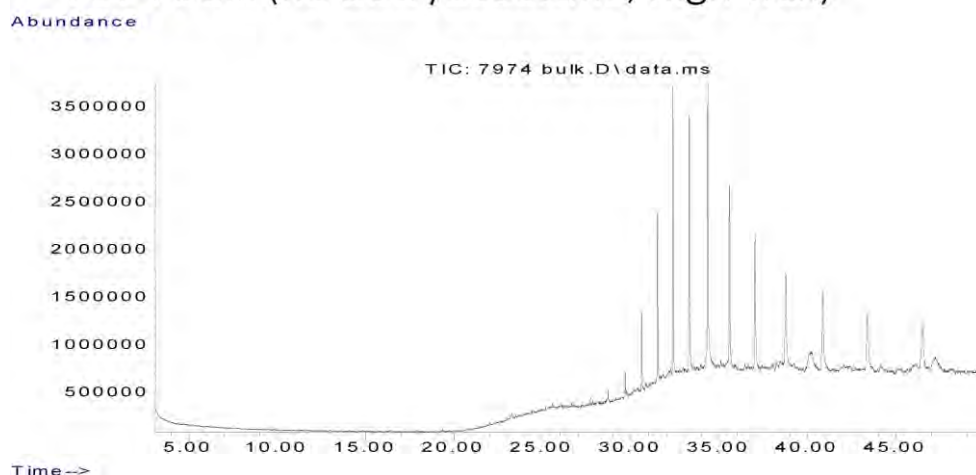
(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Respns:	Value:	units:	Qualifier:
Inorg	Carbon			86.94	percent	Y
Inorg	Hydrogen			6.57412842942344	percent	Y
Inorg	Nitrogen			0.115829305912596	percent	Y
Inorg	Sulphur			1.33475589989598	percent	Y

Results for: GCMS with Full Scan**Unique ID:** W13/007974_DISS_GCMS-Scan/03**Instrument / Type:** GCMS with Full Scan Run: 3**for Analysis:** Whole Oils**Preparation:** Dissolved in solvent**Analysis Date:** 30/10/2017**Method ID/s:****Linked Image:** [LinkedFiles\GAB_BCH1\GCMS\W13_007974_bulk_WholeOil.jpg](#)**Sample Volume:****Volume Units:****Extract Volume:****Dilution Factor:****Comment:** Bulk

Results for: GCMS with Full Scan

7974 bulk (no botryococcane, high wax)



Data Sheet:

(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Respse:	Value:	units:	Qualifier:
Aliph	Botryococcane	31.9240				U
Aliph	nC10	7.5110				U
Aliph	nC11	9.4450				U
Aliph	nC12	11.3220				U
Aliph	nC13	13.1110				U
Aliph	nC14	14.8030				U
Aliph	nC15	16.4030				U
Aliph	nC16	17.9160				U
Aliph	nC17	19.3500				U
Aliph	nC18	20.7170				U
Aliph	nC19	22.0170				U
Aliph	nC20	23.2570				U
Aliph	nC21	24.4410	271748			Z
Aliph	nC22	25.5760	374179			Z
Aliph	nC23	26.6620	297280			Z
Aliph	nC24	27.7060	282078			Z
Aliph	nC25	28.7100	672143			Z
Aliph	nC26	29.6680	1575846			Z
Aliph	nC27	30.6080	4614761			Z
Aliph	nC28	31.5080	9696857			Z
Aliph	nC29	32.3700	16391296			Z
Aliph	nC30	33.2910	17062500			Z
Aliph	nC31	34.3470	21170095			Z
Aliph	nC32	35.5720	15701273			Z
Aliph	nC33	37.0130	13396257			Z
Aliph	nC34	38.7280	10587471			Z
Aliph	nC35	40.8080	11198802			Z
Aliph	nC36	43.3510	9659255			Z
Aliph	nC37	46.4710	9390027			Z
Aliph	nC8	4.0300				U
Aliph	nC9	5.6200				U
Aliph	Norpristane	18.5830				U
Aliph	Phytane	20.7870				U
Aliph	Pristane	19.3870				U

Results for: GCMS with Full Scan**Qualifier codes:**

A	TIC is a possible aldol-condensation product
B	Analyte was also detected in the blank
D	Compound quantitated on a diluted sample
E	Inorganics: Estimated due to interference Organics: Concentration exceeds the calibration range of the instrument
J	Estimated - Result is \geq the Method Detection Limit (MDL) and $<$ the Limit of Quantitation (LOQ)
M	Duplicate injection precision not met
N	Spike sample not within control limits
O	Presumptive evidence of a compound
P	Concentration difference between primary and confirmation columns $> 25\%$
R	Spike/Surrogate failed recovery limits
S	Method of standard additions (MSA) used for calculation
T	Detected but Quantitated amount exceeded maximum
U	Compound Not Detected
V	overloaded and possibly not a water extract
X	Duplicate analysis not within control limits
Y	Detected
Z	Detected but not Quantified (too small)

Sample ID : **W13/007975**

Beach E1: Waitpinga Beach Visit: 3

Comments:

Location: Mid Intertidal

Local Date Time: 19/10/2016 10:55:53 AM

Type: Waxy Bitumen

Family: Type IV waxy bitumen (no botryococcane, hig

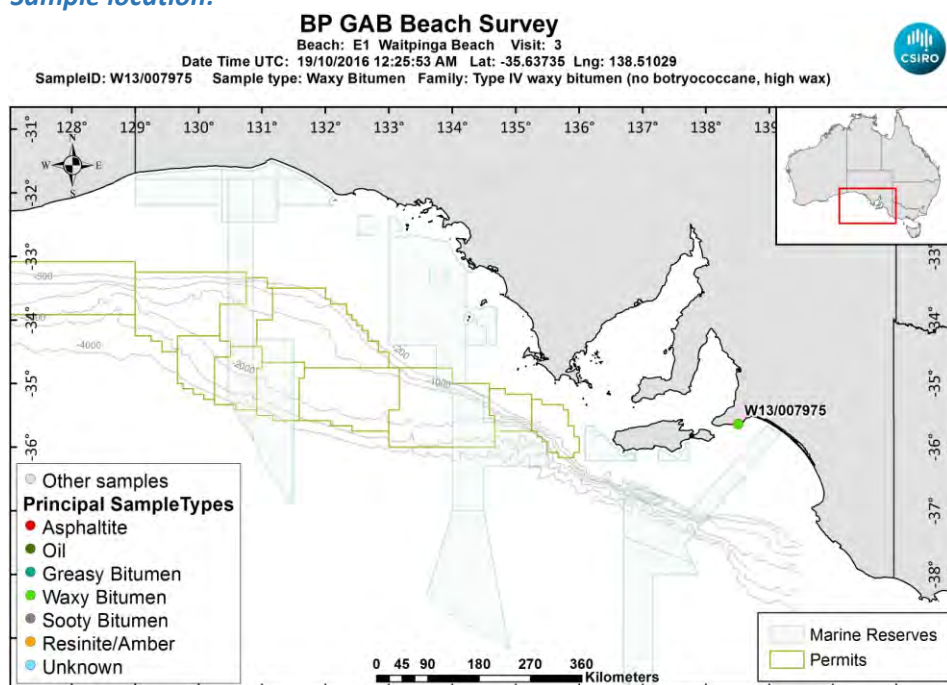
Size (cm): 4.5

Latitude (Y): -35.637353

Weight (gm): 12.11601

Longitude (X): 138.510285

Sample location:



[LinkedFiles\GAB_BCH1\SampleLocations\W13_007975_Location.jpg](#)

Sample - field image:



[LinkedFiles\GAB_BCH1\Samples\W13_007975_146A6863.JPG](#)

Sample - laboratory image:



[LinkedFiles\GAB_BCH1\Samples\W13_007975_Photo02.JPG](#)

Analyses Requested

Split:	Analysis:	Sent:
1	Bitumen Determination	YES
4	Biomarkers	YES

Analyses Completed:

Analysis:	Instrument/Type:
Biomarkers	Gas Chromatography Mass Spectrometry Run: 1
Elemental CHNS	Elemental Analyser Run: 1
Whole Oils	GCMS with Full Scan Run: 2
Whole Oils	GCMS with Full Scan Run: 1

Sample Analyses Completed:

Results for: Gas Chromatography Mass Spectrometry

Unique ID: W13/007975_DISS_GC-MS/01

Instrument / Type: Gas Chromatography Mass Spectrometry Run: 1

for Analysis: Biomarkers

Analysis Date: 18/07/2017

Linked Image: [None available](#)

Preparation: Dissolved in solvent

Method ID/s:

Sample Volume:

Volume Units:

Extract Volume:

Dilution Factor:

Comment: Internal Ratios only

Results for: Gas Chromatography Mass Spectrometry

Data Sheet:

(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Respnse:	Value:	units:	Qualifier:
BiomRatio	% C27 aaa 20R			31.1794114779896	ratio	Y
BiomRatio	% C27 abb 20(R+S)			35.7685596476084	ratio	Y
BiomRatio	% C28 aaa 20R			39.3144122439316	ratio	Y
BiomRatio	% C28 abb 20(R+S)			35.6490829001915	ratio	Y
BiomRatio	% C29 aaa 20R			29.5061762780787	ratio	Y
BiomRatio	% C29 abb 20(R+S)			28.5823574522	ratio	Y
BiomRatio	(C21+C22)/(C27+C28+C29)			0.47261028354316	ratio	Y
BiomRatio	25-Nor/C30H			0.125685532769824	ratio	Y
BiomRatio	C19t/C23t			0.468460870331441	ratio	Y
BiomRatio	C22t/C21t			0.192243683493873	ratio	Y
BiomRatio	C22t/C24t			0.142167191899603	ratio	Y
BiomRatio	C23t/C30H			0.479290726227322	ratio	Y
BiomRatio	C24t/C23t			0.675054442919903	ratio	Y
BiomRatio	C24Tet/C23t			0.136478644528644	ratio	Y
BiomRatio	C24Tet/C26t			0.208483962772094	ratio	Y
BiomRatio	C24Tet/C30H			6.54129486506543E-02	ratio	Y
BiomRatio	C26t/C25t			1.26299939283546	ratio	Y
BiomRatio	C27 Dia/(Dia+Reg)			0.717713951868944	ratio	Y
BiomRatio	C27 Dia/Ster			0.992423376962496	ratio	Y
BiomRatio	C28BNH/C30H			8.86954213349261E-02	ratio	Y
BiomRatio	C29/C27 abb Sterane Ratio			0.799091652943065	ratio	Y
BiomRatio	C29H/C30H			0.589374166651583	ratio	Y
BiomRatio	C29Ts/(C29Ts+C29H)			0.21722651367031	ratio	Y
BiomRatio	C30DiaH/C30H			0.254146379723313	ratio	Y
BiomRatio	C30Ts/C30H			5.08063494361889E-02	ratio	Y
BiomRatio	C35 Homohopane Index			0.081682910427263	ratio	Y
BiomRatio	C35HS/C34HS			0.919162715392622	ratio	Y
BiomRatio	Gam/C30H			3.11197186072749E-02	ratio	Y
BiomRatio	Gam/C31HR			0.152216254500384	ratio	Y
BiomRatio	Ole/C30H			2.28480756816111E-02	ratio	Y
BiomRatio	Sterane/hopane			2.46748020233538	ratio	Y
BiomRatio	Steranes/Terpanes			1.46981801743362	ratio	Y
BiomRatio	Tricyclic/Pentacyclic Terpanes			0.678765788055668	ratio	Y

Results for: Elemental Analyser

Unique ID: W13/007975_SPE_ELEM-AN/01

Instrument / Type: Elemental Analyser Run: 1

for Analysis: Elemental CHNS

Analysis Date: 30/10/2017

Linked Image: [None available](#)

Preparation: Solid Phase Extract

Method ID/s:

Sample Volume:

Volume Units:

Extract Volume:

Dilution Factor:

Comment:

Results for: Elemental Analyser**Data Sheet:**

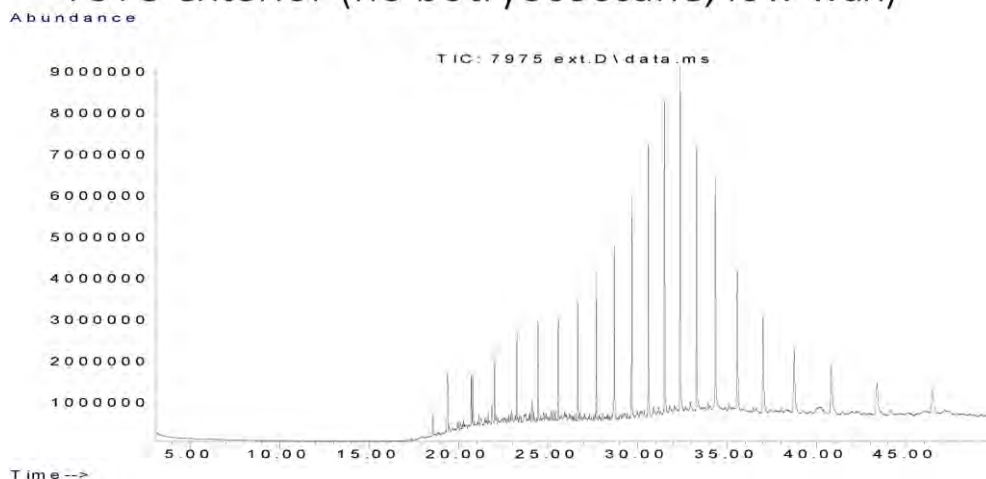
(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Respns:	Value:	units:	Qualifier:
Inorg	Carbon			87.29	percent	Y
Inorg	Hydrogen			9.3993041749503	percent	Y
Inorg	Nitrogen			0.153142073693231	percent	Y
Inorg	Sulphur			2.71642357288542	percent	Y

Results for: GCMS with Full Scan**Unique ID:** W13/007975_DISS_GCMS-Scan/01**Instrument / Type:** GCMS with Full Scan Run: 1**for Analysis:** Whole Oils**Preparation:** Dissolved in solvent**Analysis Date:** 30/10/2017**Method ID/s:****Linked Image:** [LinkedFiles\GAB_BCH1\GCMS\W13_007975_ext_WholeOil.jpg](#)**Sample Volume:****Volume Units:****Extract Volume:****Dilution Factor:****Comment:** Exterior

Results for: GCMS with Full Scan

7975 exterior (no botryococcane, low wax)



Data Sheet:

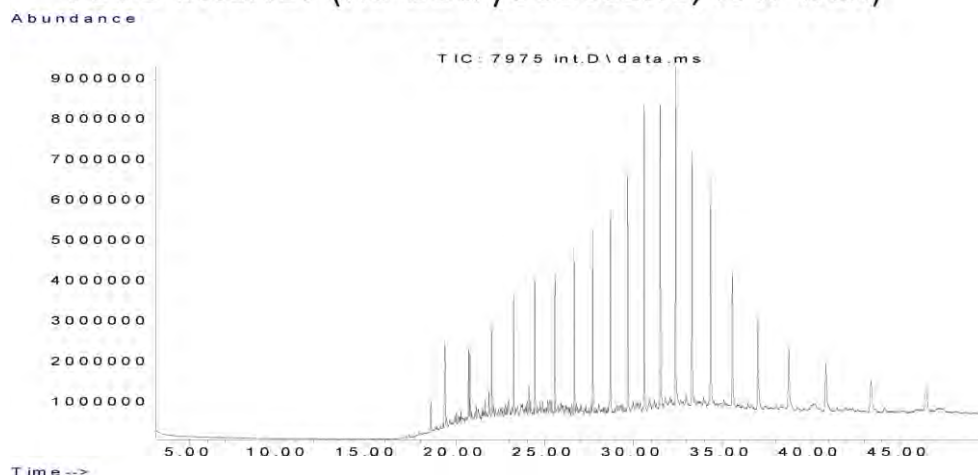
(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Respnse:	Value:	units:	Qualifier:
Aliph	Botryococcane	31.9240				U
Aliph	nC10	7.5110				U
Aliph	nC11	9.4450				U
Aliph	nC12	11.3220				U
Aliph	nC13	13.1110				U
Aliph	nC14	14.8030				U
Aliph	nC15	16.4030				U
Aliph	nC16	17.9160	362075			Z
Aliph	nC17	19.3500	4192841			Z
Aliph	nC18	20.7170	5678580			Z
Aliph	nC19	22.0170	8317953			Z
Aliph	nC20	23.2570	10297581			Z
Aliph	nC21	24.4410	10896343			Z
Aliph	nC22	25.5760	12446089			Z
Aliph	nC23	26.6620	13817787			Z
Aliph	nC24	27.7060	16709093			Z
Aliph	nC25	28.7100	19372166			Z
Aliph	nC26	29.6680	26394499			Z
Aliph	nC27	30.6080	34311145			Z
Aliph	nC28	31.5080	39941109			Z
Aliph	nC29	32.3700	44526236			Z
Aliph	nC30	33.2910	37027124			Z
Aliph	nC31	34.3470	38544325			Z
Aliph	nC32	35.5720	27289436			Z
Aliph	nC33	37.0130	22434472			Z
Aliph	nC34	38.7280	16348349			Z
Aliph	nC35	40.8080	14479115			Z
Aliph	nC36	43.3510	12420919			Z
Aliph	nC37	46.4710	11259864			Z
Aliph	nC8	4.0300				U
Aliph	nC9	5.6200				U
Aliph	Norpristane	18.5830	3855098			Z
Aliph	Phytane	20.7870	6785265			Z
Aliph	Pristane	19.3870	7877406			Z

Results for: GCMS with Full Scan**Results for: GCMS with Full Scan****Unique ID:** W13/007975 DISS GCMS-Scan/02**Instrument / Type:** GCMS with Full Scan Run: 2**for Analysis:** Whole Oils**Preparation:** Dissolved in solvent**Analysis Date:** 30/10/2017**Method ID/s:****Linked Image:** [LinkedFiles\GAB_BCH1\GCMS\W13_007975_int_WholeOil.jpg](#)**Sample Volume:****Volume Units:****Extract Volume:****Dilution Factor:****Comment:** Interior

Results for: GCMS with Full Scan

7975 interior (no botryococcane, low wax)



Data Sheet:

(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Respnse:	Value:	units:	Qualifier:
Aliph	Botryococcane	31.9240				U
Aliph	nC10	7.5110				U
Aliph	nC11	9.4450				U
Aliph	nC12	11.3220				U
Aliph	nC13	13.1110				U
Aliph	nC14	14.8030				U
Aliph	nC15	16.4030				U
Aliph	nC16	17.9160	442127			Z
Aliph	nC17	19.3500	2044941			Z
Aliph	nC18	20.7170	8341460			Z
Aliph	nC19	22.0170	11439337			Z
Aliph	nC20	23.2570	14539095			Z
Aliph	nC21	24.4410	15006512			Z
Aliph	nC22	25.5760	16457645			Z
Aliph	nC23	26.6620	17817564			Z
Aliph	nC24	27.7060	21219537			Z
Aliph	nC25	28.7100	23640229			Z
Aliph	nC26	29.6680	29912745			Z
Aliph	nC27	30.6080	37206958			Z
Aliph	nC28	31.5080	40780147			Z
Aliph	nC29	32.3700	44090155			Z
Aliph	nC30	33.2910	36675413			Z
Aliph	nC31	34.3470	36904877			Z
Aliph	nC32	35.5720	26396709			Z
Aliph	nC33	37.0130	21667815			Z
Aliph	nC34	38.7280	15975802			Z
Aliph	nC35	40.8080	15480258			Z
Aliph	nC36	43.3510	13338763			Z
Aliph	nC37	46.4710	11892738			Z
Aliph	nC8	4.0300				U
Aliph	nC9	5.6200				U
Aliph	Norpristane	18.5830	5293796			Z
Aliph	Phytane	20.7870	8817651			Z
Aliph	Pristane	19.3870	11692598			Z

Results for: GCMS with Full Scan**Qualifier codes:**

A	TIC is a possible aldol-condensation product
B	Analyte was also detected in the blank
D	Compound quantitated on a diluted sample
E	Inorganics: Estimated due to interference Organics: Concentration exceeds the calibration range of the instrument
J	Estimated - Result is \geq the Method Detection Limit (MDL) and $<$ the Limit of Quantitation (LOQ)
M	Duplicate injection precision not met
N	Spike sample not within control limits
O	Presumptive evidence of a compound
P	Concentration difference between primary and confirmation columns $> 25\%$
R	Spike/Surrogate failed recovery limits
S	Method of standard additions (MSA) used for calculation
T	Detected but Quantitated amount exceeded maximum
U	Compound Not Detected
V	overloaded and possibly not a water extract
X	Duplicate analysis not within control limits
Y	Detected
Z	Detected but not Quantified (too small)

Sample ID : **W13/007976**

Beach E1: Waitpinga Beach Visit: 3

Comments:

huge - on recent wave lines wet sand. Very plastic interior.

Location: Mid Intertidal

Local Date Time: 19/10/2016 10:59:06 AM

Type: Asphaltite

Family: Asphaltite

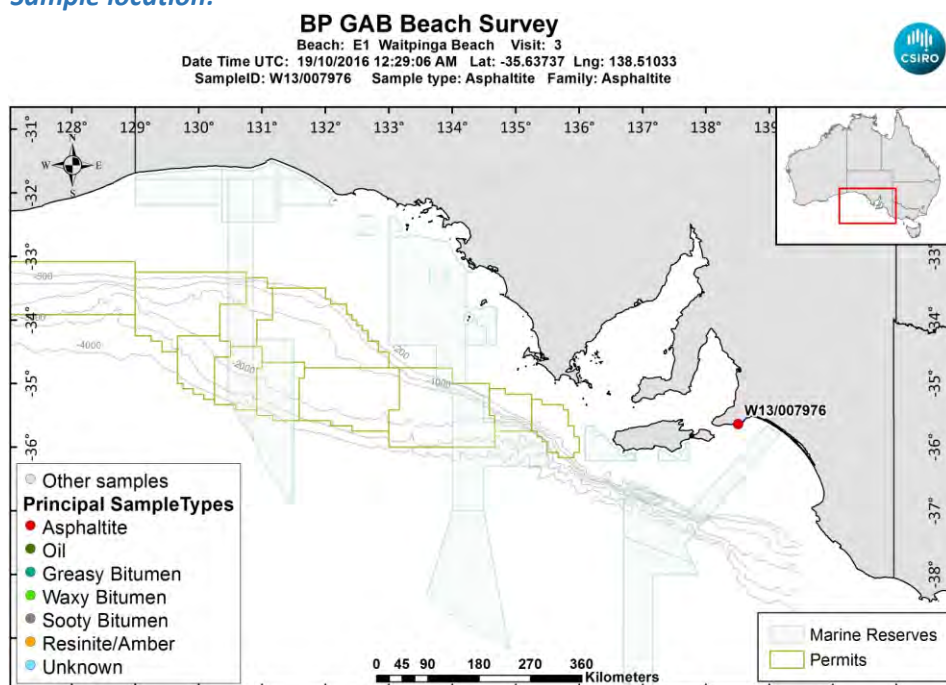
Size (cm): 25.5

Latitude (Y): -35.637367

Weight (gm): 3188

Longitude (X): 138.510328

Sample location:



[LinkedFiles\GAB_BCH1\SampleLocations\W13_007976_Location.jpg](#)

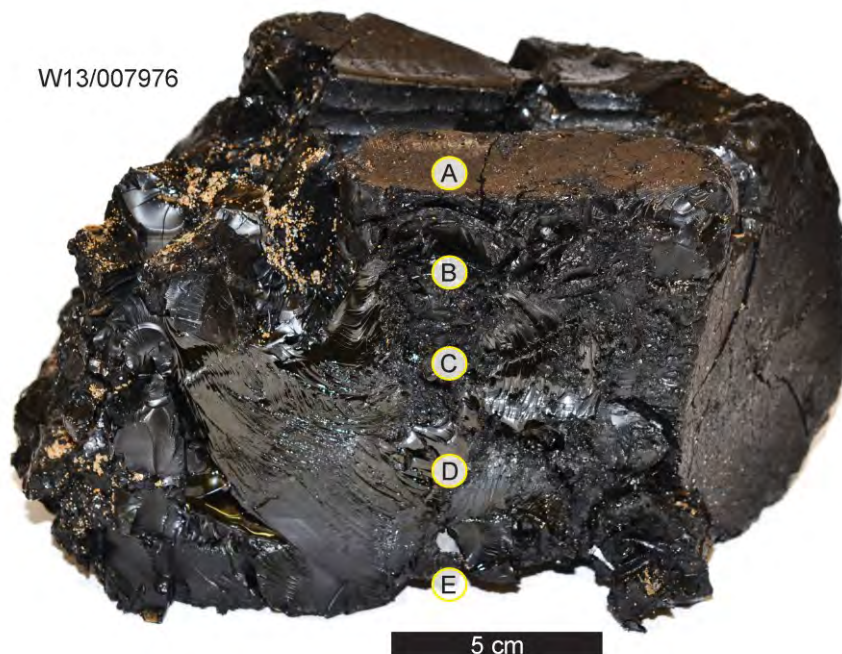
Sample - field image:



[LinkedFiles\GAB_BCH1\Samples\W13_007976_146A6865.JPG](#)

Sample - laboratory image:

W13/007976


[LinkedFiles\GAB_BCH1\Samples\W13_007976_CSIAsampling-01.jpg](#)
Analyses Requested

Split:	Analysis:	Sent:
1	Bitumen Determination	YES
4	Biomarkers	YES
5	CSIA	YES
6	CSIA	YES
7	CSIA	YES
8	CSIA	YES
9	CSIA	YES

Analyses Completed:

Analysis:	Instrument/Type:
Biomarkers	Gas Chromatography Mass Spectrometry Run: 2
Biomarkers	Gas Chromatography Mass Spectrometry Run: 1
CSIA	Compound Specific Isotope Analysis d13C Run: 15
CSIA	Compound Specific Isotope Analysis d13C Run: 14
CSIA	Compound Specific Isotope Analysis d13C Run: 13
CSIA	Compound Specific Isotope Analysis d13C Run: 12
CSIA	Compound Specific Isotope Analysis d13C Run: 11
CSIA	Compound Specific Isotope Analysis d2H Run: 5
CSIA	Compound Specific Isotope Analysis d2H Run: 4
CSIA	Compound Specific Isotope Analysis d2H Run: 3
CSIA	Compound Specific Isotope Analysis d2H Run: 2
CSIA	Compound Specific Isotope Analysis d2H Run: 1
Elemental CHNS	Elemental Analyser Run: 1
Whole Oils	GCMS with Full Scan Run: 2
Whole Oils	GCMS with Full Scan Run: 1

Sample Analyses Completed:**Results for: Gas Chromatography Mass Spectrometry****Unique ID:** W13/007976 DISS GC-MS/01**Instrument / Type:** Gas Chromatography Mass Spectrometry Run: 1**for Analysis:** Biomarkers**Analysis Date:** 18/07/2017**Linked Image:** [None available](#)**Preparation:** Dissolved in solvent**Method ID/s:****Sample Volume:****Volume Units:****Extract Volume:****Dilution Factor:****Comment:** Sample Part A Ratios only

Results for: Gas Chromatography Mass Spectrometry

Data Sheet:

(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Rspnse:	Value:	units:	Qualifier:
BiomRatio	% C27 aaa 20R			43.2508609730993	ratio	Y
BiomRatio	% C27 abb 20(R+S)			38.7398763644083	ratio	Y
BiomRatio	% C28 aaa 20R			22.5662818057955	ratio	Y
BiomRatio	% C28 abb 20(R+S)			25.0157741097343	ratio	Y
BiomRatio	% C29 aaa 20R			34.1828572211052	ratio	Y
BiomRatio	% C29 abb 20(R+S)			36.2443495258574	ratio	Y
BiomRatio	(C21+C22)/(C27+C28+C29)			0.132660629906436	ratio	Y
BiomRatio	25-Nor/C30H			2.27740513672532E-02	ratio	Y
BiomRatio	C19t/C23t			0.246707361314847	ratio	Y
BiomRatio	C22t/C21t			0.32002528178658	ratio	Y
BiomRatio	C22t/C24t			0.244090565795182	ratio	Y
BiomRatio	C23t/C30H			8.70524588588259E-02	ratio	Y
BiomRatio	C24t/C23t			0.490788498241297	ratio	Y
BiomRatio	C24Tet/C23t			0.881638511648449	ratio	Y
BiomRatio	C24Tet/C26t			2.39903000128761	ratio	Y
BiomRatio	C24Tet/C30H			7.67488002636331E-02	ratio	Y
BiomRatio	C26t/C25t			0.632343162665726	ratio	Y
BiomRatio	C27 Dia/(Dia+Reg)			0.441603535871025	ratio	Y
BiomRatio	C27 Dia/Ster			0.464005021633747	ratio	Y
BiomRatio	C28BNH/C30H			5.22020912142911E-02	ratio	Y
BiomRatio	C29/C27 abb Sterane Ratio			0.935582477985305	ratio	Y
BiomRatio	C29H/C30H			0.684850024372327	ratio	Y
BiomRatio	C29Ts/(C29Ts+C29H)			0.191918635500164	ratio	Y
BiomRatio	C30DiaH/C30H			8.41339585464482E-02	ratio	Y
BiomRatio	C30Ts/C30H			1.29235120866144E-02	ratio	Y
BiomRatio	C35 Homohopane Index			6.91619028658963E-02	ratio	Y
BiomRatio	C35HS/C34HS			0.824327361258505	ratio	Y
BiomRatio	Gam/C30H			7.42010339358905E-02	ratio	Y
BiomRatio	Gam/C31HR			0.227761539385535	ratio	Y
BiomRatio	Ole/C30H			0	ratio	U
BiomRatio	Sterane/hopane			0.341749661459485	ratio	Y
BiomRatio	Steranes/Terpanes			0.310430395523674	ratio	Y
BiomRatio	Tricyclic/Pentacyclic Terpanes			0.100889817451598	ratio	Y

Results for: Gas Chromatography Mass Spectrometry

Unique ID: W13/007976 DISS GC-MS/02

Instrument / Type: Gas Chromatography Mass Spectrometry Run: 2

for Analysis: Biomarkers

Preparation: Dissolved in solvent

Analysis Date: 18/07/2017

Method ID/s:

Linked Image: [None available](#)

Sample Volume:

Volume Units:

Extract Volume:

Dilution Factor:

Comment: Sample Part C Ratios only

Results for: Gas Chromatography Mass Spectrometry

Data Sheet:

(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Respns:	Value:	units:	Qualifier:
BiomRatio	% C27 aaa 20R			37.9739147410531	ratio	Y
BiomRatio	% C27 abb 20(R+S)			37.8285141892457	ratio	Y
BiomRatio	% C28 aaa 20R			26.1621078922008	ratio	Y
BiomRatio	% C28 abb 20(R+S)			25.0326923980576	ratio	Y
BiomRatio	% C29 aaa 20R			35.8639773667461	ratio	Y
BiomRatio	% C29 abb 20(R+S)			37.1387934126967	ratio	Y
BiomRatio	(C21+C22)/(C27+C28+C29)			0.146684379684272	ratio	Y
BiomRatio	25-Nor/C30H			0.024389622619029	ratio	Y
BiomRatio	C19t/C23t			0.24718322066216	ratio	Y
BiomRatio	C22t/C21t			0.386031668098687	ratio	Y
BiomRatio	C22t/C24t			0.300290264675553	ratio	Y
BiomRatio	C23t/C30H			8.05863304061732E-02	ratio	Y
BiomRatio	C24t/C23t			0.533949201105299	ratio	Y
BiomRatio	C24Tet/C23t			0.906365666391362	ratio	Y
BiomRatio	C24Tet/C26t			2.24299772899319	ratio	Y
BiomRatio	C24Tet/C30H			7.30406830606257E-02	ratio	Y
BiomRatio	C26t/C25t			0.764467592592593	ratio	Y
BiomRatio	C27 Dia/(Dia+Reg)			0.454742680042411	ratio	Y
BiomRatio	C27 Dia/Ster			0.469656872702208	ratio	Y
BiomRatio	C28BNH/C30H			0.055843377899462	ratio	Y
BiomRatio	C29/C27 abb Sterane Ratio			0.981767172427166	ratio	Y
BiomRatio	C29H/C30H			0.619678995688554	ratio	Y
BiomRatio	C29Ts/(C29Ts+C29H)			0.219928545125801	ratio	Y
BiomRatio	C30DiaH/C30H			8.90489920648681E-02	ratio	Y
BiomRatio	C30Ts/C30H			1.13476412764905E-02	ratio	Y
BiomRatio	C35 Homohopane Index			7.61193197328355E-02	ratio	Y
BiomRatio	C35HS/C34HS			0.815117597159351	ratio	Y
BiomRatio	Gam/C30H			0.077438407616149	ratio	Y
BiomRatio	Gam/C31HR			0.258782178897508	ratio	Y
BiomRatio	Ole/C30H			0	ratio	U
BiomRatio	Sterane/hopane			0.323421999561354	ratio	Y
BiomRatio	Steranes/Terpanes			0.29320998096814	ratio	Y
BiomRatio	Tricyclic/Pentacyclic Terpanes			0.103038847768612	ratio	Y

Results for: Compound Specific Isotope Analysis d13C

Unique ID: W13/007976_PTE_CSIA-C13/11

Instrument / Type: Compound Specific Isotope Analysis d13C Run: 11

for Analysis: CSIA

Preparation: Pentane Extraction

Analysis Date: 17/07/2017

Method ID/s: Final d13C

Linked Image: [None available](#)

Sample Volume:

Volume Units:

Extract Volume:

Dilution Factor:

Comment: Part A Final d13C

Results for: Compound Specific Isotope Analysis d13C

Data Sheet:

(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Respns:	Value:	units:	Qualifier:
Aliph	nC13			-31.401	value	Y
Aliph	nC14			-31.432	value	Y
Aliph	nC15			-31.953	value	Y
Aliph	nC16			-32.233	value	Y
Aliph	nC17			-32.313	value	Y
Aliph	nC18			-33.226	value	Y
Aliph	nC19			-32.419	value	Y
Aliph	nC20			-32.628	value	Y
Aliph	nC21			-32.831	value	Y
Aliph	nC22			-32.636	value	Y
Aliph	nC23			-32.864	value	Y
Aliph	nC24			-32.432	value	Y
Aliph	nC25			-32.883	value	Y
Aliph	nC26			-32.541	value	Y
Aliph	nC27			-32.576	value	Y
Aliph	nC28			-32.332	value	Y
Aliph	nC29			-32.355	value	Y
Aliph	nC30			-31.945	value	Y
Aliph	nC31			-32.037	value	Y
Aliph	nC32			-32.467	value	Y
Aliph	nC33			-31.93	value	Y
Aliph	nC34			-31.34	value	Y
Aliph	nC35			-31.406	value	Y
Aliph	nC36			-31.453	value	Y
Aliph	nC37			-33.584	value	Y
Aliph	nC38			-34.782	value	Y
Aliph	nC39			-30.951	value	Y

Results for: Compound Specific Isotope Analysis d13C

Unique ID: W13/007976_PTE_CSIA-C13/12

Instrument / Type: Compound Specific Isotope Analysis d13C Run: 12

for Analysis: CSIA

Preparation: Pentane Extraction

Analysis Date: 17/07/2017

Method ID/s: Final d13C

Linked Image: [None available](#)

Sample Volume:

Volume Units:

Extract Volume:

Dilution Factor:

Comment: Part B Final d13C

Results for: Compound Specific Isotope Analysis d13C

Data Sheet:

(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Respse:	Value:	units:	Qualifier:
Aliph	nC13			-31.373	value	Y
Aliph	nC14			-31.522	value	Y
Aliph	nC15			-31.832	value	Y
Aliph	nC16			-31.916	value	Y
Aliph	nC17			-31.927	value	Y
Aliph	nC18			-32.281	value	Y
Aliph	nC19			-31.952	value	Y
Aliph	nC20			-31.891	value	Y
Aliph	nC21			-32.223	value	Y
Aliph	nC22			-33.085	value	Y
Aliph	nC23			-33.494	value	Y
Aliph	nC24			-32.902	value	Y
Aliph	nC25			-33.02	value	Y
Aliph	nC26			-33.021	value	Y
Aliph	nC27			-32.849	value	Y
Aliph	nC28			-32.609	value	Y
Aliph	nC29			-32.367	value	Y
Aliph	nC30			-32.121	value	Y
Aliph	nC31			-32.412	value	Y
Aliph	nC32			-32.093	value	Y
Aliph	nC33			-32.329	value	Y
Aliph	nC34			-31.15	value	Y
Aliph	nC35			-31.569	value	Y
Aliph	nC36			-32.409	value	Y
Aliph	nC37			-33.882	value	Y
Aliph	nC38			-33.874	value	Y
Aliph	nC39			-32.988	value	Y

Results for: Compound Specific Isotope Analysis d13C

Unique ID: W13/007976_PTE_CSIA-C13/13

Instrument / Type: Compound Specific Isotope Analysis d13C Run: 13

for Analysis: CSIA

Preparation: Pentane Extraction

Analysis Date: 17/07/2017

Method ID/s: Final d13C

Linked Image: [None available](#)

Sample Volume:

Volume Units:

Extract Volume:

Dilution Factor:

Comment: Part C Final d13C

Results for: Compound Specific Isotope Analysis d13C

Data Sheet:

(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Respse:	Value:	units:	Qualifier:
Aliph	nC13			-31.279	value	Y
Aliph	nC14			-31.594	value	Y
Aliph	nC15			-32.093	value	Y
Aliph	nC16			-32.298	value	Y
Aliph	nC17			-32.43	value	Y
Aliph	nC18			-32.806	value	Y
Aliph	nC19			-32.668	value	Y
Aliph	nC20			-32.626	value	Y
Aliph	nC21			-32.77	value	Y
Aliph	nC22			-32.745	value	Y
Aliph	nC23			-33.017	value	Y
Aliph	nC24			-32.864	value	Y
Aliph	nC25			-32.992	value	Y
Aliph	nC26			-32.738	value	Y
Aliph	nC27			-32.733	value	Y
Aliph	nC28			-32.254	value	Y
Aliph	nC29			-32.473	value	Y
Aliph	nC30			-32.089	value	Y
Aliph	nC31			-32.27	value	Y
Aliph	nC32			-32.16	value	Y
Aliph	nC33			-32.161	value	Y
Aliph	nC34			-31.692	value	Y
Aliph	nC35			-31.894	value	Y
Aliph	nC36			-30.802	value	Y
Aliph	nC37			-31.6	value	Y
Aliph	nC38			-32.108	value	Y
Aliph	nC39			-30.664	value	Y

Results for: Compound Specific Isotope Analysis d13C

Unique ID: W13/007976_PTE_CSIA-C13/14

Instrument / Type: Compound Specific Isotope Analysis d13C Run: 14

for Analysis: CSIA

Preparation: Pentane Extraction

Analysis Date: 17/07/2017

Method ID/s: Final d13C

Linked Image: [None available](#)

Sample Volume:

Volume Units:

Extract Volume:

Dilution Factor:

Comment: Part D Final d13C

Results for: Compound Specific Isotope Analysis d13C

Data Sheet:

(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Respns:	Value:	units:	Qualifier:
Aliph	nC13			-31.188	value	Y
Aliph	nC14			-31.44	value	Y
Aliph	nC15			-31.879	value	Y
Aliph	nC16			-31.738	value	Y
Aliph	nC17			-32.037	value	Y
Aliph	nC18			-32.149	value	Y
Aliph	nC19			-32.008	value	Y
Aliph	nC20			-31.896	value	Y
Aliph	nC21			-32.119	value	Y
Aliph	nC22			-32.085	value	Y
Aliph	nC23			-32.769	value	Y
Aliph	nC24			-31.918	value	Y
Aliph	nC25			-32.905	value	Y
Aliph	nC26			-32.456	value	Y
Aliph	nC27			-32.504	value	Y
Aliph	nC28			-32.181	value	Y
Aliph	nC29			-32.125	value	Y
Aliph	nC30			-32.067	value	Y
Aliph	nC31			-32.078	value	Y
Aliph	nC32			-32.238	value	Y
Aliph	nC33			-31.826	value	Y
Aliph	nC34			-31.854	value	Y
Aliph	nC35			-31.744	value	Y
Aliph	nC36			-32.178	value	Y
Aliph	nC37			-30.557	value	Y
Aliph	nC38			-32.129	value	Y
Aliph	nC39				value	U

Results for: Compound Specific Isotope Analysis d13C

Unique ID: W13/007976_PTE_CSIA-C13/15

Instrument / Type: Compound Specific Isotope Analysis d13C Run: 15

for Analysis: CSIA

Preparation: Pentane Extraction

Analysis Date: 17/07/2017

Method ID/s: Final d13C

Linked Image: [None available](#)

Sample Volume:

Volume Units:

Extract Volume:

Dilution Factor:

Comment: Part E Final d13C

Results for: Compound Specific Isotope Analysis d13C

Data Sheet:

(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Respns:	Value:	units:	Qualifier:
Aliph	nC13			-31.074	value	Y
Aliph	nC14			-31.581	value	Y
Aliph	nC15			-31.674	value	Y
Aliph	nC16			-31.78	value	Y
Aliph	nC17			-32.226	value	Y
Aliph	nC18			-32.471	value	Y
Aliph	nC19			-32.244	value	Y
Aliph	nC20			-32.237	value	Y
Aliph	nC21			-32.792	value	Y
Aliph	nC22			-32.697	value	Y
Aliph	nC23			-32.947	value	Y
Aliph	nC24			-32.518	value	Y
Aliph	nC25			-32.508	value	Y
Aliph	nC26			-32.111	value	Y
Aliph	nC27			-32.978	value	Y
Aliph	nC28			-31.672	value	Y
Aliph	nC29			-32.18	value	Y
Aliph	nC30			-31.704	value	Y
Aliph	nC31			-31.819	value	Y
Aliph	nC32			-32.102	value	Y
Aliph	nC33			-31.927	value	Y
Aliph	nC34			-31.155	value	Y
Aliph	nC35			-31.234	value	Y
Aliph	nC36			-32.425	value	Y
Aliph	nC37			-33.08	value	Y
Aliph	nC38			-33.726	value	Y
Aliph	nC39			-30.053	value	Y

Results for: Compound Specific Isotope Analysis d2H

Unique ID: W13/007976_PTE_CSIA/01

Instrument / Type: Compound Specific Isotope Analysis d2H Run: 1

for Analysis: CSIA

Preparation: Pentane Extraction

Analysis Date: 17/07/2017

Method ID/s: Final d 2H/1H

Linked Image: [None available](#)

Sample Volume:

Volume Units:

Extract Volume:

Dilution Factor:

Comment: Part A 2H analysis

Results for: Compound Specific Isotope Analysis d2H

Data Sheet:

(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Respns:	Value:	units:	Qualifier:
Aliph	nC13			-123.01	value	Y
Aliph	nC14			-121.946	value	Y
Aliph	nC15			-124.464	value	Y
Aliph	nC16			-126.722	value	Y
Aliph	nC17			-124.881	value	Y
Aliph	nC18			-119.012	value	Y
Aliph	nC19			-117.604	value	Y
Aliph	nC20			-112.76	value	Y
Aliph	nC21			-114.8595	value	Y
Aliph	nC22			-113.787	value	Y
Aliph	nC23			-109.0505	value	Y
Aliph	nC24			-112.962	value	Y
Aliph	nC25			-117.381	value	Y
Aliph	nC26			-119.196	value	Y
Aliph	nC27			-120.35	value	Y
Aliph	nC28			-118.1675	value	Y
Aliph	nC29			-118.0615	value	Y
Aliph	nC30			-122.6645	value	Y
Aliph	nC31			-110.7995	value	Y
Aliph	nC32			-113.2785	value	Y
Aliph	nC33			-94.918	value	Y
Aliph	nC34				value	U
Aliph	nC35				value	U
Aliph	nC36				value	U
Aliph	nC37				value	U
Aliph	nC38				value	U
Aliph	nC39				value	U

Results for: Compound Specific Isotope Analysis d2H

Unique ID: W13/007976_PTE_CSIA/02

Instrument / Type: Compound Specific Isotope Analysis d2H Run: 2

for Analysis: CSIA

Preparation: Pentane Extraction

Analysis Date: 17/07/2017

Method ID/s: Final d 2H/1H

Linked Image: [None available](#)

Sample Volume:

Volume Units:

Extract Volume:

Dilution Factor:

Comment: Part B 2H analysis

Results for: Compound Specific Isotope Analysis d2H

Data Sheet:

(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Respns:	Value:	units:	Qualifier:
Aliph	nC13			-122.08	value	Y
Aliph	nC14			-117.98	value	Y
Aliph	nC15			-120.41	value	Y
Aliph	nC16			-116.409	value	Y
Aliph	nC17			-114.591	value	Y
Aliph	nC18			-112.9895	value	Y
Aliph	nC19				value	U
Aliph	nC20				value	U
Aliph	nC21				value	U
Aliph	nC22			-118.978	value	Y
Aliph	nC23			-119.6275	value	Y
Aliph	nC24			-117.007	value	Y
Aliph	nC25			-121.355	value	Y
Aliph	nC26			-122.603	value	Y
Aliph	nC27			-119.004	value	Y
Aliph	nC28			-121.0455	value	Y
Aliph	nC29			-118.923	value	Y
Aliph	nC30			-138.6535	value	Y
Aliph	nC31			-123.8595	value	Y
Aliph	nC32			-101.338	value	Y
Aliph	nC33			-107.56	value	Y
Aliph	nC34			-89.919	value	Y
Aliph	nC35				value	U
Aliph	nC36				value	U
Aliph	nC37				value	U
Aliph	nC38				value	U
Aliph	nC39				value	U

Results for: Compound Specific Isotope Analysis d2H

Unique ID: W13/007976_PTE_CSIA/03

Instrument / Type: Compound Specific Isotope Analysis d2H Run: 3

for Analysis: CSIA

Preparation: Pentane Extraction

Analysis Date: 17/07/2017

Method ID/s: Final d 2H/1H

Linked Image: [None available](#)

Sample Volume:

Volume Units:

Extract Volume:

Dilution Factor:

Comment: Part C 2H analysis

Results for: Compound Specific Isotope Analysis d2H

Data Sheet:

(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Respns:	Value:	units:	Qualifier:
Aliph	nC13			-116.8055	value	Y
Aliph	nC14			-119.6235	value	Y
Aliph	nC15			-121.472	value	Y
Aliph	nC16			-122.7345	value	Y
Aliph	nC17			-122.2045	value	Y
Aliph	nC18			-116.52	value	Y
Aliph	nC19			-116.444	value	Y
Aliph	nC20			-120.671	value	Y
Aliph	nC21			-120.952	value	Y
Aliph	nC22			-118.275	value	Y
Aliph	nC23			-120.3675	value	Y
Aliph	nC24			-112.1435	value	Y
Aliph	nC25			-116.746	value	Y
Aliph	nC26			-122.773	value	Y
Aliph	nC27			-115.2595	value	Y
Aliph	nC28			-111.438	value	Y
Aliph	nC29			-113.0425	value	Y
Aliph	nC30			-119.3665	value	Y
Aliph	nC31			-99.003	value	Y
Aliph	nC32			-90.523	value	Y
Aliph	nC33			-91.59	value	Y
Aliph	nC34				value	U
Aliph	nC35				value	U
Aliph	nC36				value	U
Aliph	nC37				value	U
Aliph	nC38				value	U
Aliph	nC39				value	U

Results for: Compound Specific Isotope Analysis d2H

Unique ID: W13/007976_PTE_CSIA/04

Instrument / Type: Compound Specific Isotope Analysis d2H Run: 4

for Analysis: CSIA

Preparation: Pentane Extraction

Analysis Date: 17/07/2017

Method ID/s: Final d 2H/1H

Linked Image: [None available](#)

Sample Volume:

Volume Units:

Extract Volume:

Dilution Factor:

Comment: Part D 2H analysis

Results for: Compound Specific Isotope Analysis d2H

Data Sheet:

(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Respns:	Value:	units:	Qualifier:
Aliph	nC13			-123.633	value	Y
Aliph	nC14			-122.6685	value	Y
Aliph	nC15			-124.3755	value	Y
Aliph	nC16			-127.283	value	Y
Aliph	nC17			-123.0095	value	Y
Aliph	nC18			-113.8765	value	Y
Aliph	nC19			-113.889	value	Y
Aliph	nC20			-115.5285	value	Y
Aliph	nC21			-118.562	value	Y
Aliph	nC22			-115.496	value	Y
Aliph	nC23			-116.066	value	Y
Aliph	nC24			-111.573	value	Y
Aliph	nC25			-117.1845	value	Y
Aliph	nC26			-115.5915	value	Y
Aliph	nC27			-115.0725	value	Y
Aliph	nC28			-112.759	value	Y
Aliph	nC29			-111.729	value	Y
Aliph	nC30			-113.005	value	Y
Aliph	nC31			-110.483	value	Y
Aliph	nC32			-89.344	value	Y
Aliph	nC33			-104.4955	value	Y
Aliph	nC34			-75.884	value	Y
Aliph	nC35				value	U
Aliph	nC36				value	U
Aliph	nC37				value	U
Aliph	nC38				value	U
Aliph	nC39				value	U

Results for: Compound Specific Isotope Analysis d2H

Unique ID: W13/007976_PTE_CSIA/05

Instrument / Type: Compound Specific Isotope Analysis d2H Run: 5

for Analysis: CSIA

Preparation: Pentane Extraction

Analysis Date: 17/07/2017

Method ID/s: Final d 2H/1H

Linked Image: [None available](#)

Sample Volume:

Volume Units:

Extract Volume:

Dilution Factor:

Comment: Part E 2H analysis

Results for: Compound Specific Isotope Analysis d2H

Data Sheet:

(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Rspnse:	Value:	units:	Qualifier:
Aliph	nC13			-120.054	value	Y
Aliph	nC14			-114.54	value	Y
Aliph	nC15			-121.332	value	Y
Aliph	nC16			-121.989	value	Y
Aliph	nC17			-123.3705	value	Y
Aliph	nC18			-116.63	value	Y
Aliph	nC19			-118.6545	value	Y
Aliph	nC20			-116.2145	value	Y
Aliph	nC21			-115.3945	value	Y
Aliph	nC22			-113.4575	value	Y
Aliph	nC23			-116.297	value	Y
Aliph	nC24			-109.96	value	Y
Aliph	nC25			-114.707	value	Y
Aliph	nC26			-115.411	value	Y
Aliph	nC27			-116.076	value	Y
Aliph	nC28			-115.9365	value	Y
Aliph	nC29			-114.319	value	Y
Aliph	nC30			-135.7685	value	Y
Aliph	nC31			-103.035	value	Y
Aliph	nC32			-87.088	value	Y
Aliph	nC33			-96.6115	value	Y
Aliph	nC34			-78.05	value	Y
Aliph	nC35				value	U
Aliph	nC36				value	U
Aliph	nC37				value	U
Aliph	nC38				value	U
Aliph	nC39				value	U

Results for: Elemental Analyser

Unique ID: W13/007976_SPE_ELEM-AN/01

Instrument / Type: Elemental Analyser Run: 1

for Analysis: Elemental CHNS

Analysis Date: 30/10/2017

Linked Image: [None available](#)

Preparation: Solid Phase Extract

Method ID/s:

Sample Volume:

Volume Units:

Extract Volume:

Dilution Factor:

Comment:

Data Sheet:

(default units ppb)

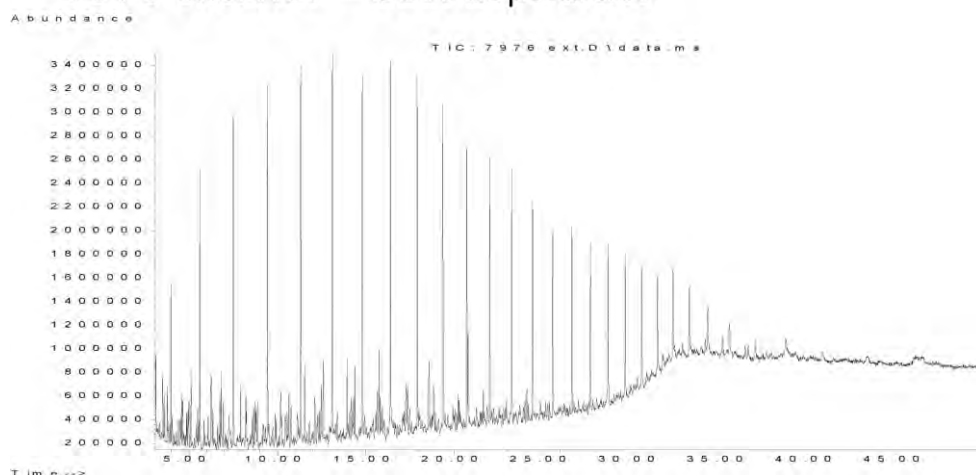
Type:	Compound / Variable:	Retentn Time:	Target Rspnse:	Value:	units:	Qualifier:
Inorg	Carbon			82.8725980993665	percent	Y
Inorg	Hydrogen			7.71173996023857	percent	Y
Inorg	Nitrogen			0.6	percent	Y
Inorg	Sulphur			4.43516108811748	percent	Y

Results for: GCMS with Full Scan

Results for: GCMS with Full Scan**Unique ID:** W13/007976 DISS GCMS-Scan/01**Instrument / Type:** GCMS with Full Scan Run: 1**for Analysis:** Whole Oils**Preparation:** Dissolved in solvent**Analysis Date:** 30/10/2017**Method ID/s:****Linked Image:** [LinkedFiles\GAB BCH1\GCMS\W13 007976 ext WholeOil.jpg](#)**Sample Volume:****Volume Units:****Extract Volume:****Dilution Factor:****Comment:** Exterior

Results for: GCMS with Full Scan

7976 exterior – best asphaltite



Data Sheet:

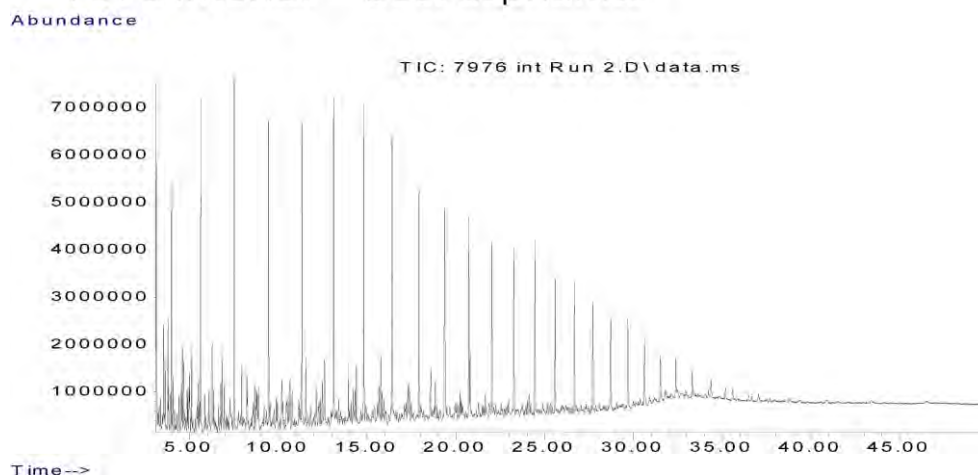
(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Respnse:	Value:	units:	Qualifier:
Aliph	Botryococcane	31.9240				U
Aliph	nC10	7.5110	15851476			Z
Aliph	nC11	9.4450	17098394			Z
Aliph	nC12	11.3220	17692200			Z
Aliph	nC13	13.1110	17007004			Z
Aliph	nC14	14.8030	16825559			Z
Aliph	nC15	16.4030	14949726			Z
Aliph	nC16	17.9160	13390348			Z
Aliph	nC17	19.3500	15500831			Z
Aliph	nC18	20.7170	11152981			Z
Aliph	nC19	22.0170	10024573			Z
Aliph	nC20	23.2570	9237157			Z
Aliph	nC21	24.4410	8627635			Z
Aliph	nC22	25.5760	7382662			Z
Aliph	nC23	26.6620	7057639			Z
Aliph	nC24	27.7060	6879835			Z
Aliph	nC25	28.7100	6775937			Z
Aliph	nC26	29.6680	6222764			Z
Aliph	nC27	30.6080	5395845			Z
Aliph	nC28	31.5080	4226773			Z
Aliph	nC29	32.3700	4078826			Z
Aliph	nC30	33.2910	3502027			Z
Aliph	nC31	34.3470	2559419			Z
Aliph	nC32	35.5720	2104844			Z
Aliph	nC33	37.0130	1500261			Z
Aliph	nC34	38.7280	1792546			Z
Aliph	nC35	40.8080	1442465			Z
Aliph	nC36	43.3510	1161383			Z
Aliph	nC37	46.4710	1267567			Z
Aliph	nC8	4.0300	3980079			Z
Aliph	nC9	5.6200	12171397			Z
Aliph	Norpristane	18.5830	4986873			Z
Aliph	Phytane	20.7870	4808845			Z
Aliph	Pristane	19.3870	4377093			Z

Results for: GCMS with Full Scan**Results for: GCMS with Full Scan****Unique ID:** W13/007976 DISS GCMS-Scan/02**Instrument / Type:** GCMS with Full Scan Run: 2**for Analysis:** Whole Oils**Preparation:** Dissolved in solvent**Analysis Date:** 30/10/2017**Method ID/s:****Linked Image:** [LinkedFiles\GAB_BCH1\GCMS\W13_007976_int_WholeOil.jpg](#)**Sample Volume:****Volume Units:****Extract Volume:****Dilution Factor:****Comment:** Interior

Results for: GCMS with Full Scan

7976 interior – best asphaltite



Data Sheet:

(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Respnse:	Value:	units:	Qualifier:
Aliph	Botryococcane	31.9240				U
Aliph	nC10	7.5110	40061081			Z
Aliph	nC11	9.4450	39547315			Z
Aliph	nC12	11.3220	38673187			Z
Aliph	nC13	13.1110	35008612			Z
Aliph	nC14	14.8030	33209098			Z
Aliph	nC15	16.4030	28982749			Z
Aliph	nC16	17.9160	24937102			Z
Aliph	nC17	19.3500	31685917			Z
Aliph	nC18	20.7170	20035238			Z
Aliph	nC19	22.0170	17859220			Z
Aliph	nC20	23.2570	16975143			Z
Aliph	nC21	24.4410	15269827			Z
Aliph	nC22	25.5760	13245552			Z
Aliph	nC23	26.6620	12360111			Z
Aliph	nC24	27.7060	11181097			Z
Aliph	nC25	28.7100	10020993			Z
Aliph	nC26	29.6680	9116496			Z
Aliph	nC27	30.6080	7012911			Z
Aliph	nC28	31.5080	5392261			Z
Aliph	nC29	32.3700	4477945			Z
Aliph	nC30	33.2910	3177347			Z
Aliph	nC31	34.3470	2868819			Z
Aliph	nC32	35.5720	1925472			Z
Aliph	nC33	37.0130	1429680			Z
Aliph	nC34	38.7280	1000251			Z
Aliph	nC35	40.8080	1017321			Z
Aliph	nC36	43.3510	863504			Z
Aliph	nC37	46.4710	1127161			Z
Aliph	nC8	4.0300	14435235			Z
Aliph	nC9	5.6200	34635276			Z
Aliph	Norpristane	18.5830	8913520			Z
Aliph	Phytane	20.7870	7544533			Z
Aliph	Pristane	19.3870	8469318			Z

Results for: GCMS with Full Scan

Qualifier codes:

A	TIC is a possible aldol-condensation product
B	Analyte was also detected in the blank
D	Compound quantitated on a diluted sample
E	Inorganics: Estimated due to interference Organics: Concentration exceeds the calibration range of the instrument
J	Estimated - Result is \geq the Method Detection Limit (MDL) and $<$ the Limit of Quantitation (LOQ)
M	Duplicate injection precision not met
N	Spike sample not within control limits
O	Presumptive evidence of a compound
P	Concentration difference between primary and confirmation columns $> 25\%$
R	Spike/Surrogate failed recovery limits
S	Method of standard additions (MSA) used for calculation
T	Detected but Quantitated amount exceeded maximum
U	Compound Not Detected
V	overloaded and possibly not a water extract
X	Duplicate analysis not within control limits
Y	Detected
Z	Detected but not Quantified (too small)

Sample ID : **W13/007977**

Beach E1: Waitpinga Beach Visit: 3

Comments:

Location: Upper Intertidal

Local Date Time: 19/10/2016 11:06:30 AM

Type: Waxy Bitumen

Family: Type I waxy bitumen (high botryococcane)

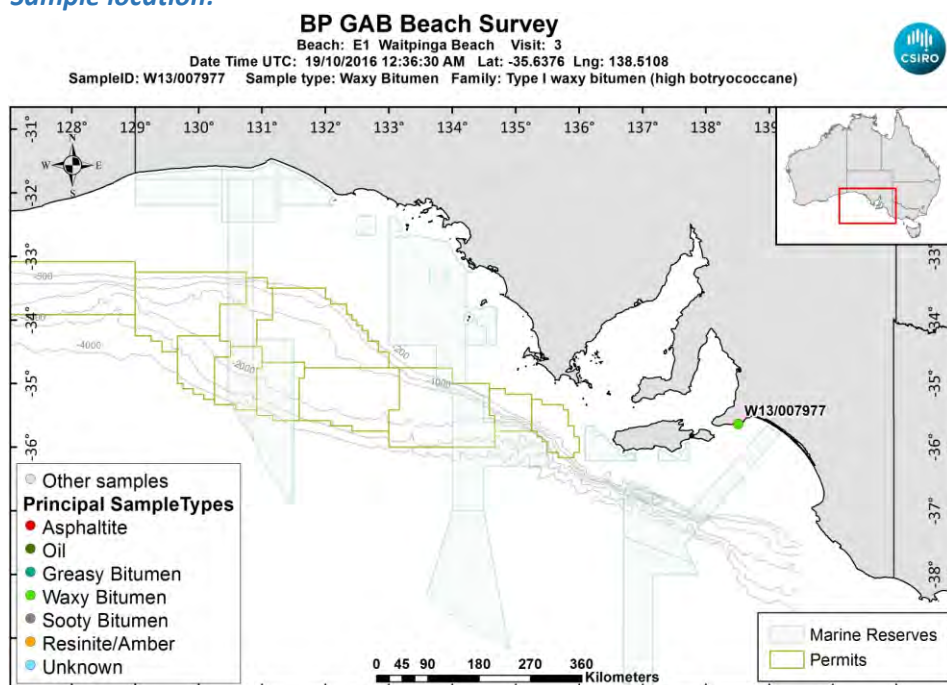
Size (cm): 3.2

Latitude (Y): -35.637602

Weight (gm): 3.02762

Longitude (X): 138.510798

Sample location:



[LinkedFiles\GAB_BCH1\SampleLocations\W13_007977_Location.jpg](#)

Sample - field image:



[LinkedFiles\GAB_BCH1\Samples\W13_007977_146A6868.JPG](#)

Sample - laboratory image:



[LinkedFiles\GAB_BCH1\Samples\W13_007977_Photo02.JPG](#)

Analyses Requested

Split:	Analysis:	Sent:
1	Bitumen Determination	YES

Analyses Completed:

Analysis:	Instrument/Type:
Elemental CHNS	Elemental Analyser Run: 1
Whole Oils	GCMS with Full Scan Run: 2
Whole Oils	GCMS with Full Scan Run: 1

Sample Analyses Completed:

Results for: Elemental Analyser

Unique ID: W13/007977_SPE_ELEM-AN/01

Instrument / Type: Elemental Analyser Run: 1

for Analysis: Elemental CHNS

Analysis Date: 30/10/2017

Linked Image: [None available](#)

Preparation: Solid Phase Extract

Method ID/s:

Sample Volume:

Volume Units:

Extract Volume:

Dilution Factor:

Comment:

Data Sheet:

Type:	Compound / Variable:	Retentn Time:	Target Respse:	Value:	units:	Qualifier:
Inorg	Carbon			80.77	percent	Y
Inorg	Hydrogen			6.15678727634194	percent	Y
Inorg	Nitrogen			0.352584318766067	percent	Y
Inorg	Sulphur			1.51055316546351	percent	Y

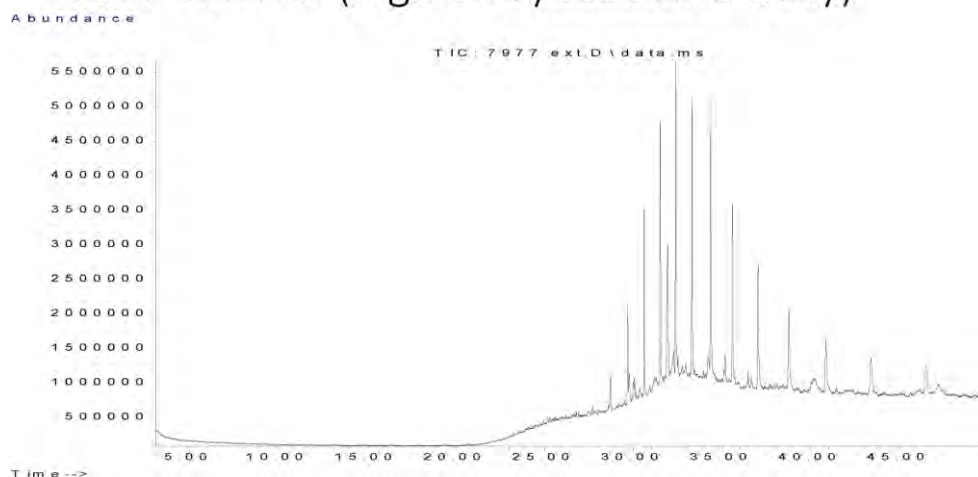
Results for: GCMS with Full Scan

Unique ID: W13/007977_DISS_GCMS-Scan/01

Results for: GCMS with Full Scan**Instrument / Type:** GCMS with Full Scan Run: 1**for Analysis:** Whole Oils**Preparation:** Dissolved in solvent**Analysis Date:** 30/10/2017**Method ID/s:****Linked Image:** [LinkedFiles\GAB_BCH1\GCMS\W13_007977_ext_WholeOil.jpg](#)**Sample Volume:****Volume Units:****Extract Volume:****Dilution Factor:****Comment:** Exterior

Results for: GCMS with Full Scan

7977 exterior (high botryococcane waxy)



Data Sheet:

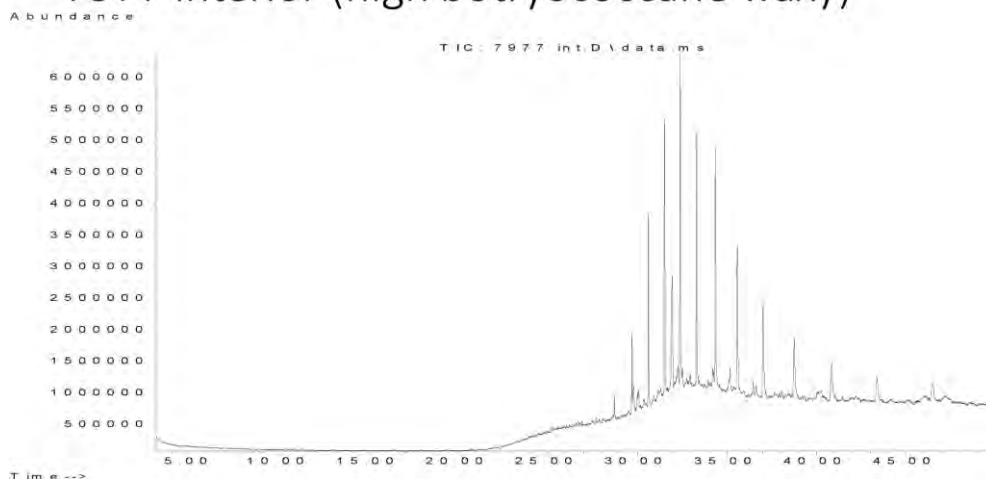
(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Respse:	Value:	units:	Qualifier:
Aliph	Botryococcane	31.9240	15558406			Z
Aliph	nC10	7.5110				U
Aliph	nC11	9.4450				U
Aliph	nC12	11.3220				U
Aliph	nC13	13.1110				U
Aliph	nC14	14.8030				U
Aliph	nC15	16.4030				U
Aliph	nC16	17.9160				U
Aliph	nC17	19.3500				U
Aliph	nC18	20.7170				U
Aliph	nC19	22.0170				U
Aliph	nC20	23.2570				U
Aliph	nC21	24.4410				U
Aliph	nC22	25.5760				U
Aliph	nC23	26.6620				U
Aliph	nC24	27.7060	581463			Z
Aliph	nC25	28.7100	2244943			Z
Aliph	nC26	29.6680	6569206			Z
Aliph	nC27	30.6080	14822053			Z
Aliph	nC28	31.5080	19655824			Z
Aliph	nC29	32.3700	24442470			Z
Aliph	nC30	33.2910	24061997			Z
Aliph	nC31	34.3470	27378778			Z
Aliph	nC32	35.5720	21208610			Z
Aliph	nC33	37.0130	17170751			Z
Aliph	nC34	38.7280	13001878			Z
Aliph	nC35	40.8080	10755846			Z
Aliph	nC36	43.3510	7412619			Z
Aliph	nC37	46.4710	6935598			Z
Aliph	nC8	4.0300				U
Aliph	nC9	5.6200				U
Aliph	Norpristane	18.5830				U
Aliph	Phytane	20.7870				U
Aliph	Pristane	19.3870				U

Results for: GCMS with Full Scan**Results for: GCMS with Full Scan****Unique ID:** W13/007977 DISS GCMS-Scan/02**Instrument / Type:** GCMS with Full Scan Run: 2**for Analysis:** Whole Oils**Preparation:** Dissolved in solvent**Analysis Date:** 30/10/2017**Method ID/s:****Linked Image:** [LinkedFiles\GAB_BCH1\GCMS\W13_007977_int_WholeOil.jpg](#)**Sample Volume:****Volume Units:****Extract Volume:****Dilution Factor:****Comment:** Interior

Results for: GCMS with Full Scan

7977 interior (high botryococcane waxy)



Data Sheet:

(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Respse:	Value:	units:	Qualifier:
Aliph	Botryococcane	31.9240	15175646			Z
Aliph	nC10	7.5110				U
Aliph	nC11	9.4450				U
Aliph	nC12	11.3220				U
Aliph	nC13	13.1110				U
Aliph	nC14	14.8030				U
Aliph	nC15	16.4030				U
Aliph	nC16	17.9160				U
Aliph	nC17	19.3500				U
Aliph	nC18	20.7170				U
Aliph	nC19	22.0170				U
Aliph	nC20	23.2570				U
Aliph	nC21	24.4410				U
Aliph	nC22	25.5760				U
Aliph	nC23	26.6620				U
Aliph	nC24	27.7060	773310			Z
Aliph	nC25	28.7100	1642601			Z
Aliph	nC26	29.6680	5899615			Z
Aliph	nC27	30.6080	15733018			Z
Aliph	nC28	31.5080	22191223			Z
Aliph	nC29	32.3700	26897145			Z
Aliph	nC30	33.2910	24553492			Z
Aliph	nC31	34.3470	25459433			Z
Aliph	nC32	35.5720	19116614			Z
Aliph	nC33	37.0130	14770370			Z
Aliph	nC34	38.7280	10028651			Z
Aliph	nC35	40.8080	7946241			Z
Aliph	nC36	43.3510	6615806			Z
Aliph	nC37	46.4710	5801329			Z
Aliph	nC8	4.0300				U
Aliph	nC9	5.6200				U
Aliph	Norpristane	18.5830				U
Aliph	Phytane	20.7870				U
Aliph	Pristane	19.3870				U

Results for: GCMS with Full Scan

Qualifier codes:

A	TIC is a possible aldol-condensation product
B	Analyte was also detected in the blank
D	Compound quantitated on a diluted sample
E	Inorganics: Estimated due to interference Organics: Concentration exceeds the calibration range of the instrument
J	Estimated - Result is \geq the Method Detection Limit (MDL) and < the Limit of Quantitation (LOQ)
M	Duplicate injection precision not met
N	Spike sample not within control limits
O	Presumptive evidence of a compound
P	Concentration difference between primary and confirmation columns > 25%
R	Spike/Surrogate failed recovery limits
S	Method of standard additions (MSA) used for calculation
T	Detected but Quantitated amount exceeded maximum
U	Compound Not Detected
V	overloaded and possibly not a water extract
X	Duplicate analysis not within control limits
Y	Detected
Z	Detected but not Quantified (too small)

Sample ID : **W13/007978**

Beach E1: Waitpinga Beach Visit: 3

Comments:

in wet sand - recent

Location: Mid Intertidal

Local Date Time: 19/10/2016 11:09:23 AM

Type: Waxy Bitumen

Family: Type IV waxy bitumen (no botryococcane, hig

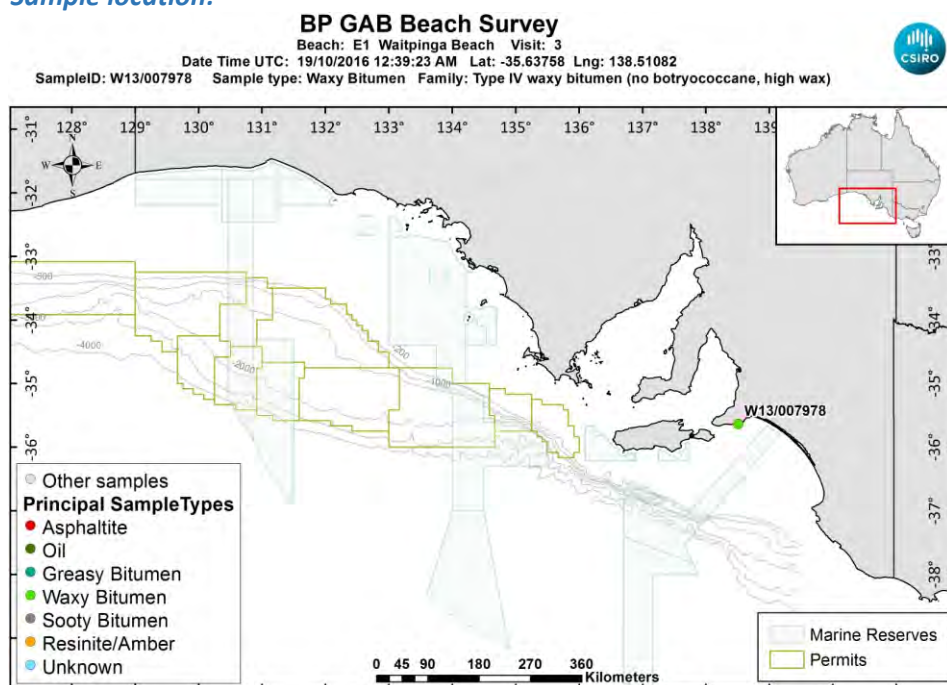
Size (cm): 1.6

Latitude (Y): -35.637582

Weight (gm): 0.55549

Longitude (X): 138.510820

Sample location:



[LinkedFiles\GAB_BCH1\SampleLocations\W13_007978_Location.jpg](#)

Sample - field image:



[LinkedFiles\GAB_BCH1\Samples\W13_007978_146A6870.JPG](#)

Sample - laboratory image:



[LinkedFiles\GAB BCH1\Samples\W13_007978_Photo02.JPG](#)

Analyses Requested

Split:	Analysis:	Sent:
1	Bitumen Determination	YES
4	Biomarkers	YES

Analyses Completed:

Analysis:	Instrument/Type:
Biomarkers	Gas Chromatography Mass Spectrometry Run: 1
Elemental CHNS	Elemental Analyser Run: 1
Whole Oils	GCMS with Full Scan Run: 3

Sample Analyses Completed:

Results for: Gas Chromatography Mass Spectrometry

Unique ID: W13/007978 DISS GC-MS/01

Instrument / Type: Gas Chromatography Mass Spectrometry Run: 1

for Analysis: Biomarkers

Analysis Date: 18/07/2017

Linked Image: [None available](#)

Preparation: Dissolved in solvent

Method ID/s:

Sample Volume:

Volume Units:

Extract Volume:

Dilution Factor:

Comment: Bulk Ratios only

Results for: Gas Chromatography Mass Spectrometry

Data Sheet:

(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Respse:	Value:	units:	Qualifier:
BiomRatio	% C27 aaa 20R			41.6567066353086	ratio	Y
BiomRatio	% C27 abb 20(R+S)			36.6802369650696	ratio	Y
BiomRatio	% C28 aaa 20R			24.9418462685224	ratio	Y
BiomRatio	% C28 abb 20(R+S)			33.0948517759155	ratio	Y
BiomRatio	% C29 aaa 20R			33.4014470961689	ratio	Y
BiomRatio	% C29 abb 20(R+S)			30.2249112590149	ratio	Y
BiomRatio	(C21+C22)/(C27+C28+C29)			0.684419355051568	ratio	Y
BiomRatio	25-Nor/C30H			0.14460217738737	ratio	Y
BiomRatio	C19t/C23t			5.28819934837023E-02	ratio	Y
BiomRatio	C22t/C21t			9.45092349148511E-02	ratio	Y
BiomRatio	C22t/C24t			5.79949790794979E-02	ratio	Y
BiomRatio	C23t/C30H			0.671314951408918	ratio	Y
BiomRatio	C24t/C23t			0.522195265196538	ratio	Y
BiomRatio	C24Tet/C23t			0.126246276900703	ratio	Y
BiomRatio	C24Tet/C26t			0.225399143666754	ratio	Y
BiomRatio	C24Tet/C30H			8.47510132431525E-02	ratio	Y
BiomRatio	C26t/C25t			1.52194315677483	ratio	Y
BiomRatio	C27 Dia/(Dia+Reg)			0.786113752906984	ratio	Y
BiomRatio	C27 Dia/Ster			1.23048327278361	ratio	Y
BiomRatio	C28BNH/C30H			0.114738786267299	ratio	Y
BiomRatio	C29/C27 abb Sterane Ratio			0.824010795998887	ratio	Y
BiomRatio	C29H/C30H			0.59489752573884	ratio	Y
BiomRatio	C29Ts/(C29Ts+C29H)			0.245475651863317	ratio	Y
BiomRatio	C30DiaH/C30H			0.256001426871654	ratio	Y
BiomRatio	C30Ts/C30H			1.69323667529517E-02	ratio	Y
BiomRatio	C35 Homohopane Index			5.44975351586675E-02	ratio	Y
BiomRatio	C35HS/C34HS			0.60687688163524	ratio	Y
BiomRatio	Gam/C30H			3.22125663272371E-02	ratio	Y
BiomRatio	Gam/C31HR			0.168785814416763	ratio	Y
BiomRatio	Ole/C30H			2.09759520496026E-02	ratio	Y
BiomRatio	Sterane/hopane			2.35262672336152	ratio	Y
BiomRatio	Steranes/Terpanes			1.36444818174737	ratio	Y
BiomRatio	Tricyclic/Pentacyclic Terpanes			0.724233103780199	ratio	Y

Results for: Elemental Analyser

Unique ID: W13/007978_SPE_ELEM-AN/01

Instrument / Type: Elemental Analyser Run: 1

for Analysis: Elemental CHNS

Analysis Date: 30/10/2017

Linked Image: [None available](#)

Preparation: Solid Phase Extract

Method ID/s:

Sample Volume:

Volume Units:

Extract Volume:

Dilution Factor:

Comment:

Results for: Elemental Analyser**Data Sheet:**

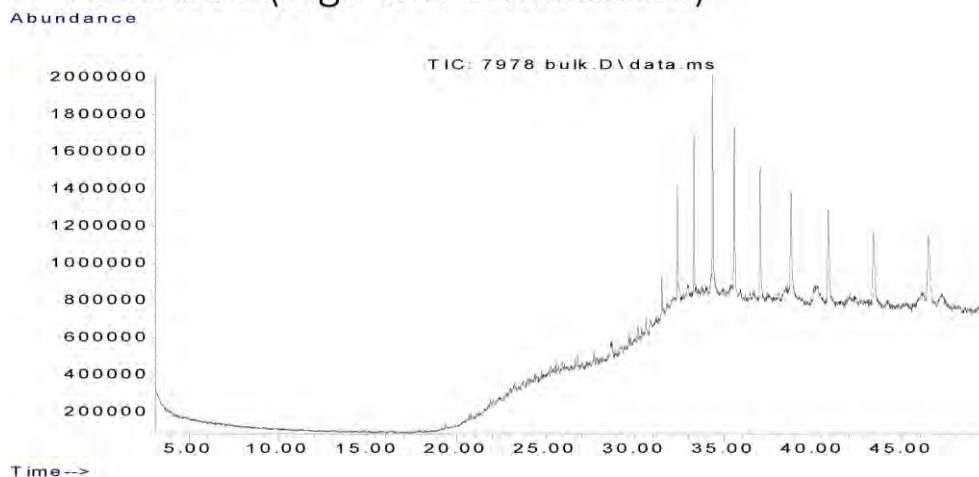
(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Respns:	Value:	units:	Qualifier:
Inorg	Carbon			84.76	percent	Y
Inorg	Hydrogen			9.37304970178924	percent	Y
Inorg	Nitrogen			0.701979091688089	percent	Y
Inorg	Sulphur			2.46082478040995	percent	Y

Results for: GCMS with Full Scan**Unique ID:** W13/007978_DISS_GCMS-Scan/03**Instrument / Type:** GCMS with Full Scan Run: 3**for Analysis:** Whole Oils**Preparation:** Dissolved in solvent**Analysis Date:** 30/10/2017**Method ID/s:****Linked Image:** [LinkedFiles\GAB_BCH1\GCMS\W13_007978_bulk_WholeOil.jpg](#)**Sample Volume:****Volume Units:****Extract Volume:****Dilution Factor:****Comment:** Bulk

Results for: GCMS with Full Scan

7978 bulk (high wax unclassified)



Data Sheet:

(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Respse:	Value:	units:	Qualifier:
Aliph	Botryococcane	31.9240				U
Aliph	nC10	7.5110				U
Aliph	nC11	9.4450				U
Aliph	nC12	11.3220				U
Aliph	nC13	13.1110				U
Aliph	nC14	14.8030				U
Aliph	nC15	16.4030				U
Aliph	nC16	17.9160				U
Aliph	nC17	19.3500				U
Aliph	nC18	20.7170				U
Aliph	nC19	22.0170				U
Aliph	nC20	23.2570				U
Aliph	nC21	24.4410				U
Aliph	nC22	25.5760				U
Aliph	nC23	26.6620				U
Aliph	nC24	27.7060				U
Aliph	nC25	28.7100				U
Aliph	nC26	29.6680				U
Aliph	nC27	30.6080	404742			Z
Aliph	nC28	31.5080	1298276			Z
Aliph	nC29	32.3700	3120368			Z
Aliph	nC30	33.2910	5446927			Z
Aliph	nC31	34.3470	7981818			Z
Aliph	nC32	35.5720	6966728			Z
Aliph	nC33	37.0130	7081761			Z
Aliph	nC34	38.7280	6355268			Z
Aliph	nC35	40.8080	7075421			Z
Aliph	nC36	43.3510	6459843			Z
Aliph	nC37	46.4710	6550388			Z
Aliph	nC8	4.0300				U
Aliph	nC9	5.6200				U
Aliph	Norpristane	18.5830				U
Aliph	Phytane	20.7870				U
Aliph	Pristane	19.3870				U

Results for: GCMS with Full Scan**Qualifier codes:**

A	TIC is a possible aldol-condensation product
B	Analyte was also detected in the blank
D	Compound quantitated on a diluted sample
E	Inorganics: Estimated due to interference Organics: Concentration exceeds the calibration range of the instrument
J	Estimated - Result is \geq the Method Detection Limit (MDL) and $<$ the Limit of Quantitation (LOQ)
M	Duplicate injection precision not met
N	Spike sample not within control limits
O	Presumptive evidence of a compound
P	Concentration difference between primary and confirmation columns $> 25\%$
R	Spike/Surrogate failed recovery limits
S	Method of standard additions (MSA) used for calculation
T	Detected but Quantitated amount exceeded maximum
U	Compound Not Detected
V	overloaded and possibly not a water extract
X	Duplicate analysis not within control limits
Y	Detected
Z	Detected but not Quantified (too small)

Sample ID : **W13/007979**

Beach E1: Waitpinga Beach Visit: 3

Comments:

unsure of exact location but close

Location: Upper Intertidal

Local Date Time: 19/10/2016 11:19:15 AM

Type: Waxy Bitumen

Family: Type IV waxy bitumen (no botryococcane, hig

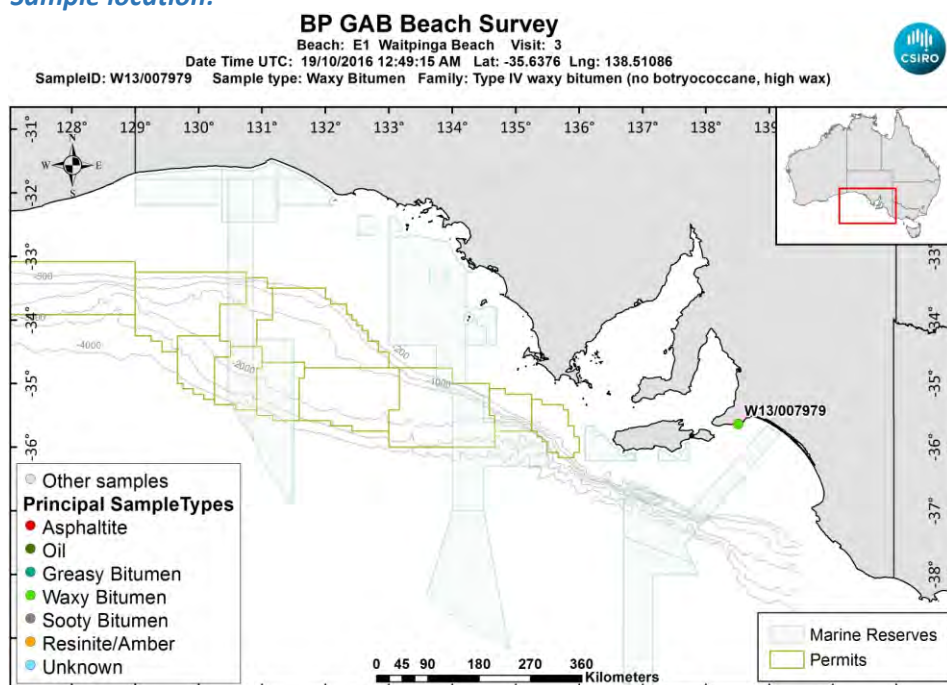
Size (cm): 2

Latitude (Y): -35.637600

Weight (gm): 3.9214

Longitude (X): 138.510857

Sample location:



[LinkedFiles\GAB_BCH1\SampleLocations\W13_007979_Location.jpg](#)

Sample - field image:



[LinkedFiles\GAB_BCH1\Samples\W13_007979_146A6872.JPG](#)

Sample - laboratory image:

[LinkedFiles\GAB_BCH1\Samples\W13_007979_Photo02.JPG](#)**Analyses Requested**

Split:	Analysis:	Sent:
1	Bitumen Determination	YES
4	Biomarkers	YES

Analyses Completed:

Analysis:	Instrument/Type:
Biomarkers	Gas Chromatography Mass Spectrometry Run: 1
Elemental CHNS	Elemental Analyser Run: 1
Whole Oils	GCMS with Full Scan Run: 2
Whole Oils	GCMS with Full Scan Run: 1

Sample Analyses Completed:**Results for: Gas Chromatography Mass Spectrometry****Unique ID:** W13/007979_DISS_GC-MS/01**Instrument / Type:** Gas Chromatography Mass Spectrometry Run: 1**for Analysis:** Biomarkers**Analysis Date:** 18/07/2017**Linked Image:** [None available](#)**Preparation:** Dissolved in solvent**Method ID/s:****Sample Volume:****Volume Units:****Extract Volume:****Dilution Factor:****Comment:** Internal Ratios only

Results for: Gas Chromatography Mass Spectrometry

Data Sheet:

(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Respnse:	Value:	units:	Qualifier:
BiomRatio	% C27 aaa 20R			29.0682367237114	ratio	Y
BiomRatio	% C27 abb 20(R+S)			33.3625116947676	ratio	Y
BiomRatio	% C28 aaa 20R			40.3474763840468	ratio	Y
BiomRatio	% C28 abb 20(R+S)			35.0999626570512	ratio	Y
BiomRatio	% C29 aaa 20R			30.5842868922418	ratio	Y
BiomRatio	% C29 abb 20(R+S)			31.5375256481812	ratio	Y
BiomRatio	(C21+C22)/(C27+C28+C29)			0.430374276082635	ratio	Y
BiomRatio	25-Nor/C30H			8.84937610190108E-02	ratio	Y
BiomRatio	C19t/C23t			0.146906647703587	ratio	Y
BiomRatio	C22t/C21t			0.104976029095718	ratio	Y
BiomRatio	C22t/C24t			0.081146703015846	ratio	Y
BiomRatio	C23t/C30H			0.557353524033402	ratio	Y
BiomRatio	C24t/C23t			0.575660233932469	ratio	Y
BiomRatio	C24Tet/C23t			0.156715136951031	ratio	Y
BiomRatio	C24Tet/C26t			0.332379862700229	ratio	Y
BiomRatio	C24Tet/C30H			8.73457338490344E-02	ratio	Y
BiomRatio	C26t/C25t			1.171581769437	ratio	Y
BiomRatio	C27 Dia/(Dia+Reg)			0.712991388505867	ratio	Y
BiomRatio	C27 Dia/Ster			0.943520136336641	ratio	Y
BiomRatio	C28BNH/C30H			0.12615998578633	ratio	Y
BiomRatio	C29/C27 abb Sterane Ratio			0.945298301780062	ratio	Y
BiomRatio	C29H/C30H			0.566742746244994	ratio	Y
BiomRatio	C29Ts/(C29Ts+C29H)			0.283713056846251	ratio	Y
BiomRatio	C30DiaH/C30H			0.219478194317266	ratio	Y
BiomRatio	C30Ts/C30H			2.66369637414752E-02	ratio	Y
BiomRatio	C35 Homohopane Index			5.52117293842442E-02	ratio	Y
BiomRatio	C35HS/C34HS			0.59270325522881	ratio	Y
BiomRatio	Gam/C30H			3.99486121171534E-02	ratio	Y
BiomRatio	Gam/C31HR			0.176339285714286	ratio	Y
BiomRatio	Ole/C30H			3.49328267435663E-02	ratio	Y
BiomRatio	Sterane/hopane			2.52433750730264	ratio	Y
BiomRatio	Steranes/Terpanes			1.55535452071283	ratio	Y
BiomRatio	Tricyclic/Pentacyclic Terpanes			0.622998148451531	ratio	Y

Results for: Elemental Analyser

Unique ID: W13/007979_SPE_ELEM-AN/01

Instrument / Type: Elemental Analyser Run: 1

for Analysis: Elemental CHNS

Analysis Date: 30/10/2017

Linked Image: [None available](#)

Preparation: Solid Phase Extract

Method ID/s:

Sample Volume:

Volume Units:

Extract Volume:

Dilution Factor:

Comment:

Results for: Elemental Analyser**Data Sheet:**

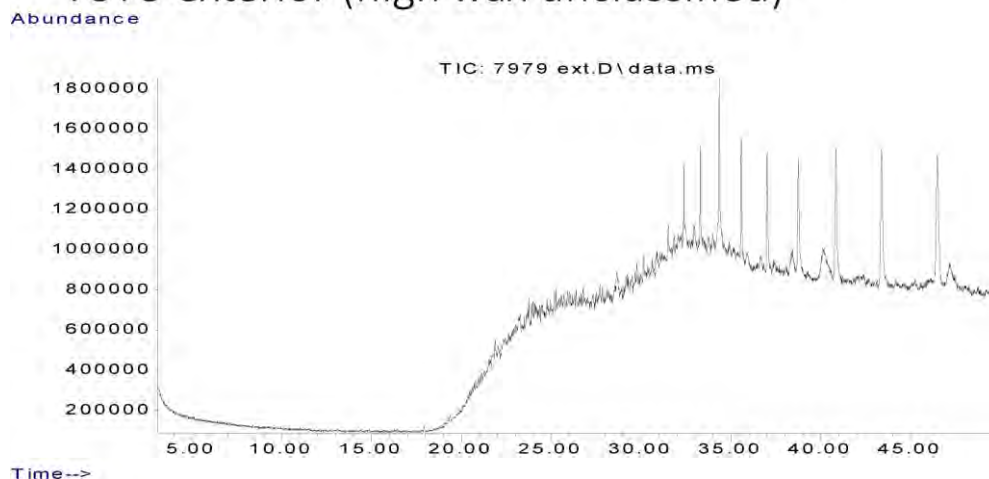
(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Respns:	Value:	units:	Qualifier:
Inorg	Carbon			86.42	percent	Y
Inorg	Hydrogen			8.54435009940359	percent	Y
Inorg	Nitrogen			0.141631105398458	percent	Y
Inorg	Sulphur			2.15536484642655	percent	Y

Results for: GCMS with Full Scan**Unique ID:** W13/007979_DISS_GCMS-Scan/01**Instrument / Type:** GCMS with Full Scan Run: 1**for Analysis:** Whole Oils**Preparation:** Dissolved in solvent**Analysis Date:** 30/10/2017**Method ID/s:****Linked Image:** [LinkedFiles\GAB_BCH1\GCMS\W13_007979_ext_WholeOil.jpg](#)**Sample Volume:****Volume Units:****Extract Volume:****Dilution Factor:****Comment:** Exterior

Results for: GCMS with Full Scan

7979 exterior (high wax unclassified)



Data Sheet:

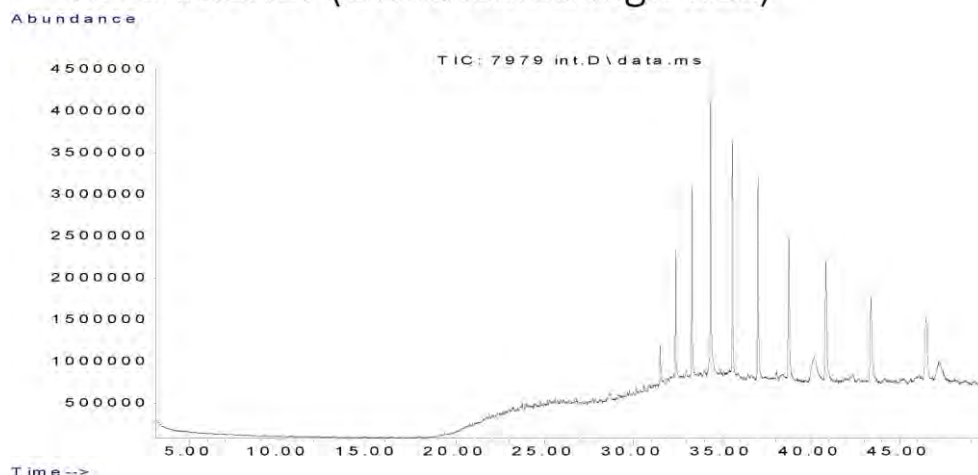
(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Respse:	Value:	units:	Qualifier:
Aliph	Botryococcane	31.9240				U
Aliph	nC10	7.5110				U
Aliph	nC11	9.4450				U
Aliph	nC12	11.3220				U
Aliph	nC13	13.1110				U
Aliph	nC14	14.8030				U
Aliph	nC15	16.4030				U
Aliph	nC16	17.9160				U
Aliph	nC17	19.3500				U
Aliph	nC18	20.7170				U
Aliph	nC19	22.0170				U
Aliph	nC20	23.2570				U
Aliph	nC21	24.4410				U
Aliph	nC22	25.5760				U
Aliph	nC23	26.6620				U
Aliph	nC24	27.7060				U
Aliph	nC25	28.7100				U
Aliph	nC26	29.6680	714456			Z
Aliph	nC27	30.6080	531667			Z
Aliph	nC28	31.5080	852037			Z
Aliph	nC29	32.3700	2022236			Z
Aliph	nC30	33.2910	2952596			Z
Aliph	nC31	34.3470	5499005			Z
Aliph	nC32	35.5720	5388685			Z
Aliph	nC33	37.0130	6157158			Z
Aliph	nC34	38.7280	6347382			Z
Aliph	nC35	40.8080	8263074			Z
Aliph	nC36	43.3510	11390035			Z
Aliph	nC37	46.4710	12968532			Z
Aliph	nC8	4.0300				U
Aliph	nC9	5.6200				U
Aliph	Norpristane	18.5830				U
Aliph	Phytane	20.7870				U
Aliph	Pristane	19.3870				U

Results for: GCMS with Full Scan**Results for: GCMS with Full Scan****Unique ID:** W13/007979 DISS GCMS-Scan/02**Instrument / Type:** GCMS with Full Scan Run: 2**for Analysis:** Whole Oils**Preparation:** Dissolved in solvent**Analysis Date:** 30/10/2017**Method ID/s:****Linked Image:** [LinkedFiles\GAB_BCH1\GCMS\W13_007979_int_WholeOil.jpg](#)**Sample Volume:****Volume Units:****Extract Volume:****Dilution Factor:****Comment:** Interior

Results for: GCMS with Full Scan

7979 interior (Unclassified high wax)



Data Sheet:

(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Respse:	Value:	units:	Qualifier:
Aliph	Botryococcane	31.9240				U
Aliph	nC10	7.5110				U
Aliph	nC11	9.4450				U
Aliph	nC12	11.3220				U
Aliph	nC13	13.1110				U
Aliph	nC14	14.8030				U
Aliph	nC15	16.4030				U
Aliph	nC16	17.9160				U
Aliph	nC17	19.3500				U
Aliph	nC18	20.7170				U
Aliph	nC19	22.0170				U
Aliph	nC20	23.2570				U
Aliph	nC21	24.4410				U
Aliph	nC22	25.5760				U
Aliph	nC23	26.6620				U
Aliph	nC24	27.7060				U
Aliph	nC25	28.7100				U
Aliph	nC26	29.6680	718254			Z
Aliph	nC27	30.6080	505284			Z
Aliph	nC28	31.5080	2439639			Z
Aliph	nC29	32.3700	8685898			Z
Aliph	nC30	33.2910	13981633			Z
Aliph	nC31	34.3470	25548955			Z
Aliph	nC32	35.5720	22089225			Z
Aliph	nC33	37.0130	22193131			Z
Aliph	nC34	38.7280	18392849			Z
Aliph	nC35	40.8080	17721897			Z
Aliph	nC36	43.3510	16094405			Z
Aliph	nC37	46.4710	15057940			Z
Aliph	nC8	4.0300				U
Aliph	nC9	5.6200				U
Aliph	Norpristane	18.5830				U
Aliph	Phytane	20.7870				U
Aliph	Pristane	19.3870				U

Results for: GCMS with Full Scan

Qualifier codes:

A	TIC is a possible aldol-condensation product
B	Analyte was also detected in the blank
D	Compound quantitated on a diluted sample
E	Inorganics: Estimated due to interference Organics: Concentration exceeds the calibration range of the instrument
J	Estimated - Result is \geq the Method Detection Limit (MDL) and < the Limit of Quantitation (LOQ)
M	Duplicate injection precision not met
N	Spike sample not within control limits
O	Presumptive evidence of a compound
P	Concentration difference between primary and confirmation columns > 25%
R	Spike/Surrogate failed recovery limits
S	Method of standard additions (MSA) used for calculation
T	Detected but Quantitated amount exceeded maximum
U	Compound Not Detected
V	overloaded and possibly not a water extract
X	Duplicate analysis not within control limits
Y	Detected
Z	Detected but not Quantified (too small)

Sample ID : **W13/007980**

Beach E1: Waitpinga Beach Visit: 3

Comments:

Location: Upper Intertidal

Local Date Time: 19/10/2016 11:12:05 AM

Type: Waxy Bitumen

Family: Unclassified high wax bitumen

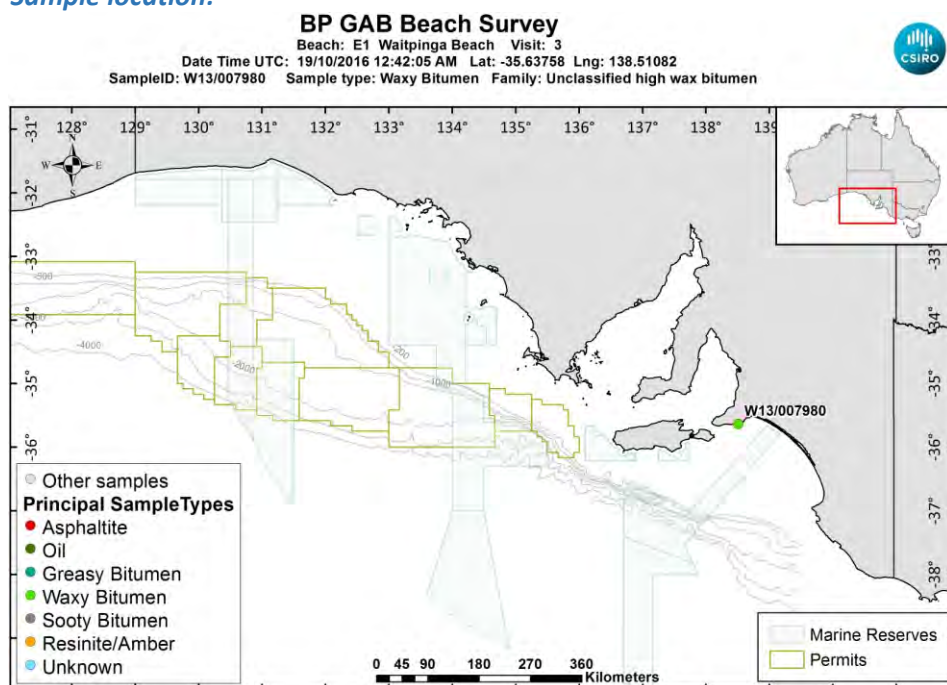
Size (cm): 1.2

Latitude (Y): -35.637577

Weight (gm): 0.32919

Longitude (X): 138.510822

Sample location:



[LinkedFiles\GAB_BCH1\SampleLocations\W13_007980_Location.jpg](#)

Sample - field image:



[LinkedFiles\GAB_BCH1\Samples\W13_007980_146A6874.JPG](#)

Sample - laboratory image:



[LinkedFiles\GAB_BCH1\Samples\W13_007980_Photo02.JPG](#)

Analyses Requested

Split:	Analysis:	Sent:
1	Bitumen Determination	YES

Analyses Completed:

Analysis:	Instrument/Type:
Whole Oils	GCMS with Full Scan Run: 3

Sample Analyses Completed:**Results for: GCMS with Full Scan**

Unique ID: W13/007980 DISS GCMS-Scan/03

Instrument / Type: GCMS with Full Scan Run: 3

for Analysis: Whole Oils

Analysis Date: 30/10/2017

Linked Image: [LinkedFiles\GAB_BCH1\GCMS\W13_007980_bulk_WholeOil.jpg](#)

Preparation: Dissolved in solvent

Method ID/s:

Sample Volume:

Volume Units:

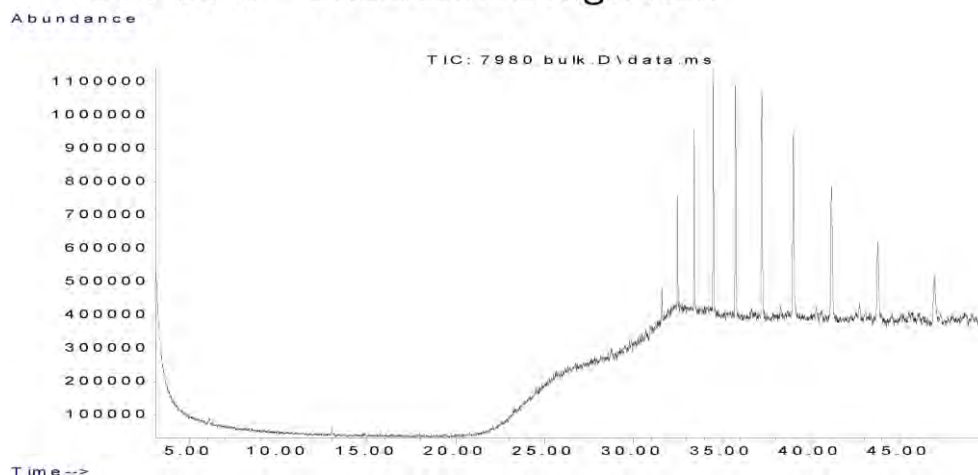
Extract Volume:

Dilution Factor:

Comment: Bulk

Results for: GCMS with Full Scan

7980 bulk – Unclassified high wax



Data Sheet:

(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Respse:	Value:	units:	Qualifier:
Aliph	Botryococcane	31.9240				U
Aliph	nC10	7.5110				U
Aliph	nC11	9.4450				U
Aliph	nC12	11.3220				U
Aliph	nC13	13.1110				U
Aliph	nC14	14.8030				U
Aliph	nC15	16.4030				U
Aliph	nC16	17.9160				U
Aliph	nC17	19.3500				U
Aliph	nC18	20.7170				U
Aliph	nC19	22.0170				U
Aliph	nC20	23.2570				U
Aliph	nC21	24.4410				U
Aliph	nC22	25.5760				U
Aliph	nC23	26.6620				U
Aliph	nC24	27.7060				U
Aliph	nC25	28.7100				U
Aliph	nC26	29.6680				U
Aliph	nC27	30.6080				U
Aliph	nC28	31.5080	398098			Z
Aliph	nC29	32.3700	1420555			Z
Aliph	nC30	33.2910	2840629			Z
Aliph	nC31	34.3470	4491206			Z
Aliph	nC32	35.5720	5217890			Z
Aliph	nC33	37.0130	6108125			Z
Aliph	nC34	38.7280	6037417			Z
Aliph	nC35	40.8080	4734173			Z
Aliph	nC36	43.3510	3625561			Z
Aliph	nC37	46.4710	2192221			Z
Aliph	nC8	4.0300				U
Aliph	nC9	5.6200				U
Aliph	Norpristane	18.5830				U
Aliph	Phytane	20.7870				U
Aliph	Pristane	19.3870				U

Results for: GCMS with Full Scan**Qualifier codes:**

A	TIC is a possible aldol-condensation product
B	Analyte was also detected in the blank
D	Compound quantitated on a diluted sample
E	Inorganics: Estimated due to interference Organics: Concentration exceeds the calibration range of the instrument
J	Estimated - Result is \geq the Method Detection Limit (MDL) and $<$ the Limit of Quantitation (LOQ)
M	Duplicate injection precision not met
N	Spike sample not within control limits
O	Presumptive evidence of a compound
P	Concentration difference between primary and confirmation columns $> 25\%$
R	Spike/Surrogate failed recovery limits
S	Method of standard additions (MSA) used for calculation
T	Detected but Quantitated amount exceeded maximum
U	Compound Not Detected
V	overloaded and possibly not a water extract
X	Duplicate analysis not within control limits
Y	Detected
Z	Detected but not Quantified (too small)

Sample ID : **W13/007981**

Beach E1: Waitpinga Beach Visit: 3

Comments:
very weathered

Location: Upper Intertidal

Local Date Time: 19/10/2016 11:15:25 AM

Type: Waxy Bitumen

Family: Type I waxy bitumen (high botryococcane)

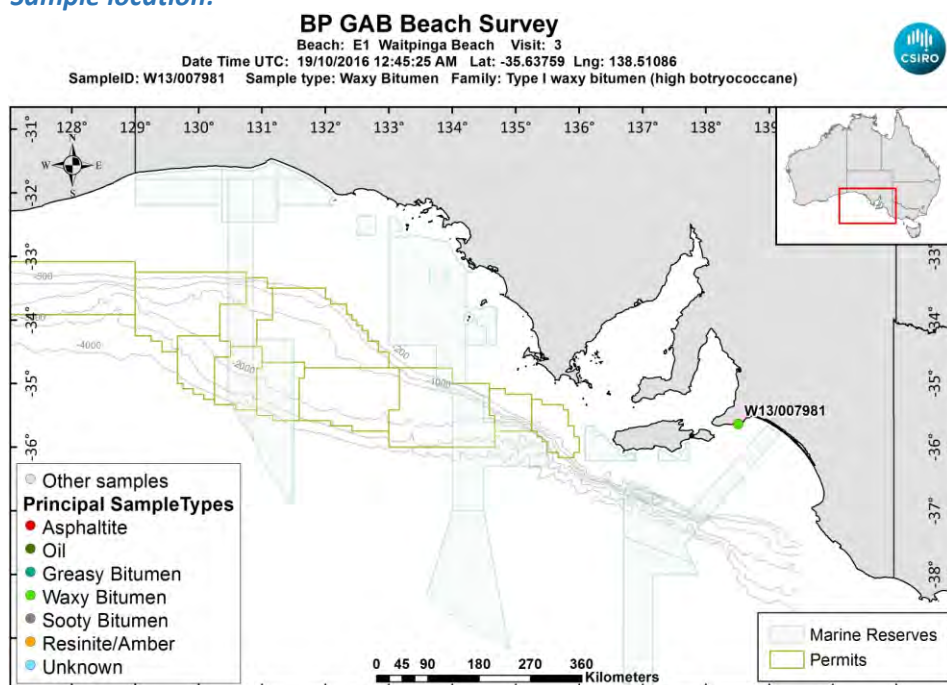
Size (cm): 1.7

Latitude (Y): -35.637592

Weight (gm): 0.64972

Longitude (X): 138.510858

Sample location:



[LinkedFiles\GAB_BCH1\SampleLocations\W13_007981_Location.jpg](#)

Sample - field image:



[LinkedFiles\GAB_BCH1\Samples\W13_007981_146A6876.JPG](#)

Sample - laboratory image:



[LinkedFiles\GAB_BCH1\Samples\W13_007981_Photo02.JPG](#)

Analyses Requested

Split: Analysis: Sent:
1 Bitumen Determination YES

Analyses Completed:

Analysis: Instrument/Type:
Elemental CHNS Elemental Analyser Run: 1
Whole Oils GCMS with Full Scan Run: 3

Sample Analyses Completed:

Results for: Elemental Analyser

Unique ID: W13/007981_SPE_ELEM-AN/01

Instrument / Type: Elemental Analyser Run: 1

for Analysis: Elemental CHNS

Analysis Date: 30/10/2017

Linked Image: [None available](#)

Preparation: Solid Phase Extract

Method ID/s:

Sample Volume: Volume Units: Extract Volume: Dilution Factor:
Comment:

Data Sheet:

Type:	Compound / Variable:	Retentn Time:	Target Respnse:	Value:	units:	Qualifier:
Inorg	Carbon			87.1	percent	Y
Inorg	Hydrogen			9.08375188866799	percent	Y
Inorg	Nitrogen			0.526227249357327	percent	Y
Inorg	Sulphur			2.31432042854653	percent	Y

Results for: GCMS with Full Scan

Unique ID: W13/007981 DISS GCMS-Scan/03

Instrument / Type: GCMS with Full Scan Run: 3

for Analysis: Whole Oils

Analysis Date: 30/10/2017

Linked Image: [LinkedFiles\GAB_BCH1\GCMS\W13_007981_bulk_WholeOil.jpg](#)

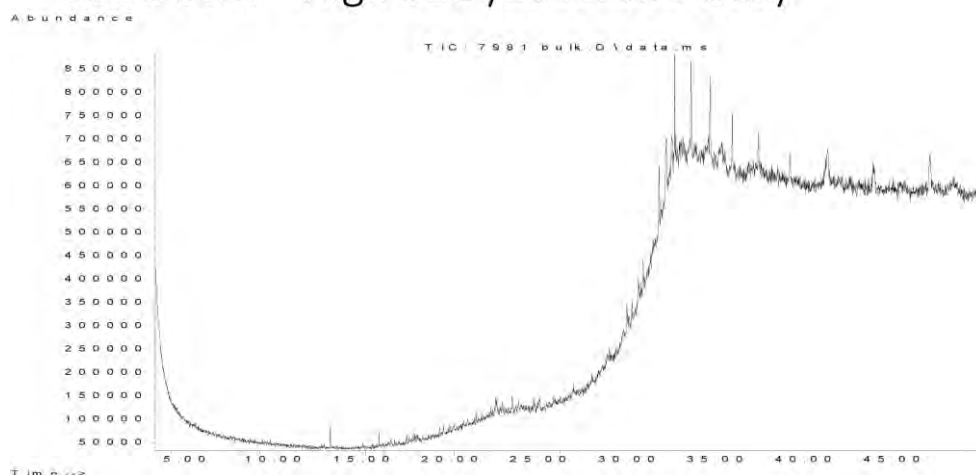
Preparation: Dissolved in solvent

Method ID/s:

Sample Volume: Volume Units: Extract Volume: Dilution Factor:
Comment: Bulk (splitless)

Results for: GCMS with Full Scan

7981 bulk – High botryococcane waxy



Data Sheet:

(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Respse:	Value:	units:	Qualifier:
Aliph	Botryococcane		898015			Z
Aliph	nC10					U
Aliph	nC11					U
Aliph	nC12					U
Aliph	nC13					U
Aliph	nC14					U
Aliph	nC15					U
Aliph	nC16	17.9470				U
Aliph	nC17	19.3870				U
Aliph	nC18	20.7560				U
Aliph	nC19	22.0580				U
Aliph	nC20	23.3040				U
Aliph	nC21	24.4890				U
Aliph	nC22	25.6290				U
Aliph	nC23	26.7230				U
Aliph	nC24	27.7690				U
Aliph	nC25	28.7780				U
Aliph	nC26	29.7510	120023			Z
Aliph	nC27	30.6850	291942			Z
Aliph	nC28	31.5900	524252			Z
Aliph	nC29	32.4650	895092			Z
Aliph	nC30	33.4020	950672			Z
Aliph	nC31	34.4700	1019849			Z
Aliph	nC32	35.7230	865824			Z
Aliph	nC33	37.1970	727235			Z
Aliph	nC34	38.9660	545717			Z
Aliph	nC35	41.0780	715893			Z
Aliph	nC36	43.6950	814620			Z
Aliph	nC37	46.8640	1351390			Z
Aliph	nC8					U
Aliph	nC9					U
Aliph	Norpristane	18.6080				U
Aliph	Phytane	20.7570				U
Aliph	Pristane	19.4110				U

Results for: GCMS with Full Scan**Qualifier codes:**

A	TIC is a possible aldol-condensation product
B	Analyte was also detected in the blank
D	Compound quantitated on a diluted sample
E	Inorganics: Estimated due to interference Organics: Concentration exceeds the calibration range of the instrument
J	Estimated - Result is \geq the Method Detection Limit (MDL) and $<$ the Limit of Quantitation (LOQ)
M	Duplicate injection precision not met
N	Spike sample not within control limits
O	Presumptive evidence of a compound
P	Concentration difference between primary and confirmation columns $> 25\%$
R	Spike/Surrogate failed recovery limits
S	Method of standard additions (MSA) used for calculation
T	Detected but Quantitated amount exceeded maximum
U	Compound Not Detected
V	overloaded and possibly not a water extract
X	Duplicate analysis not within control limits
Y	Detected
Z	Detected but not Quantified (too small)

Sample ID : **W13/007982**

Beach E1: Waitpinga Beach Visit: 3

Comments:

Location: Upper Intertidal

Local Date Time: 19/10/2016 11:22:33 AM

Type: Waxy Bitumen

Family: Unclassified high wax bitumen

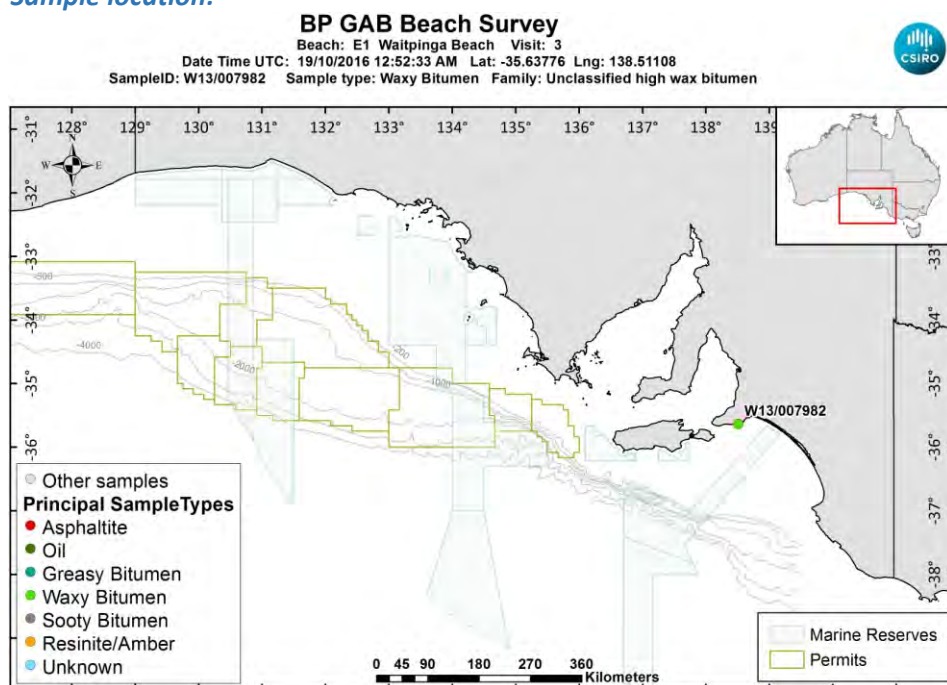
Size (cm): 1.7

Latitude (Y): -35.637757

Weight (gm): 0.37343

Longitude (X): 138.511080

Sample location:



[LinkedFiles\GAB_BCH1\SampleLocations\W13_007982_Location.jpg](#)

Sample - field image:



[LinkedFiles\GAB_BCH1\Samples\W13_007982_146A6878.JPG](#)

Sample - laboratory image:

[LinkedFiles\GAB_BCH1\Samples\W13_007982_Photo02.JPG](#)**Analyses Requested**

Split:	Analysis:	Sent:
1	Bitumen Determination	YES

Analyses Completed:

Analysis:	Instrument/Type:
Elemental CHNS	Elemental Analyser Run: 1
Whole Oils	GCMS with Full Scan Run: 3

Sample Analyses Completed:**Results for: Elemental Analyser****Unique ID:** W13/007982_SPE_ELEM-AN/01**Instrument / Type:** Elemental Analyser Run: 1**for Analysis:** Elemental CHNS**Analysis Date:** 30/10/2017**Linked Image:** [None available](#)**Preparation:** Solid Phase Extract**Method ID/s:**

Sample Volume:	Volume Units:	Extract Volume:	Dilution Factor:
Comment:			

Data Sheet:

(default units ppb)

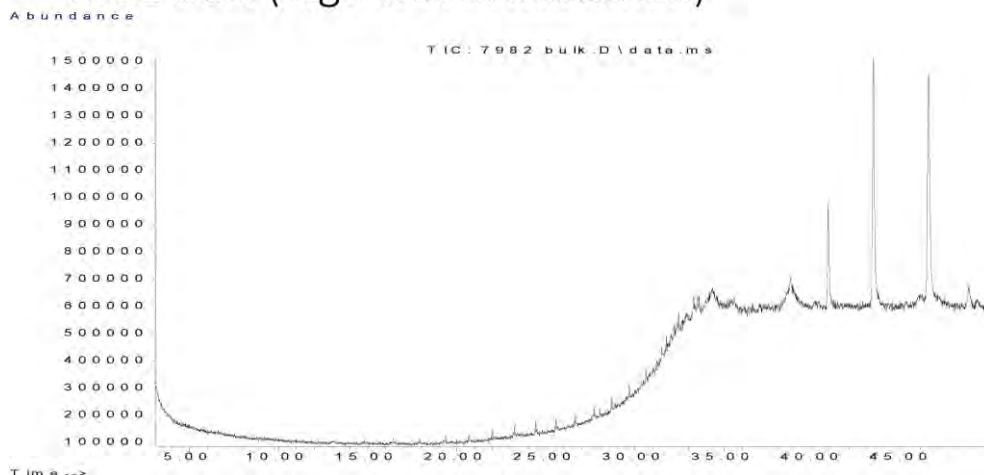
Type:	Compound / Variable:	Retentn Time:	Target Respnse:	Value:	units:	Qualifier:
Inorg	Carbon			77.75	percent	Y
Inorg	Hydrogen			11.3927996023857	percent	Y
Inorg	Nitrogen			0.29	percent	Y
Inorg	Sulphur			4.26989513371086	percent	Y

Results for: GCMS with Full Scan**Unique ID:** W13/007982 DISS GCMS-Scan/03**Instrument / Type:** GCMS with Full Scan Run: 3**for Analysis:** Whole Oils**Analysis Date:** 30/10/2017**Linked Image:** [LinkedFiles\GAB_BCH1\GCMS\W13_007982_bulk_WholeOil.jpg](#)**Preparation:** Dissolved in solvent**Method ID/s:**

Sample Volume:	Volume Units:	Extract Volume:	Dilution Factor:
Comment: Bulk			

Results for: GCMS with Full Scan

7982 bulk (high wax unclassified)



Data Sheet:

(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Respse:	Value:	units:	Qualifier:
Aliph	Botryococcane	31.9240				U
Aliph	nC10	7.5110				U
Aliph	nC11	9.4450				U
Aliph	nC12	11.3220				U
Aliph	nC13	13.1110				U
Aliph	nC14	14.8030				U
Aliph	nC15	16.4030				U
Aliph	nC16	17.9160				U
Aliph	nC17	19.3500				U
Aliph	nC18	20.7170				U
Aliph	nC19	22.0170				U
Aliph	nC20	23.2570				U
Aliph	nC21	24.4410				U
Aliph	nC22	25.5760				U
Aliph	nC23	26.6620				U
Aliph	nC24	27.7060				U
Aliph	nC25	28.7100				U
Aliph	nC26	29.6680				U
Aliph	nC27	30.6080				U
Aliph	nC28	31.5080				U
Aliph	nC29	32.3700				U
Aliph	nC30	33.2910				U
Aliph	nC31	34.3470				U
Aliph	nC32	35.5720				U
Aliph	nC33	37.0130				U
Aliph	nC34	38.7280	627597			Z
Aliph	nC35	40.8080	5229059			Z
Aliph	nC36	43.3510	12584851			Z
Aliph	nC37	46.4710	13679107			Z
Aliph	nC8	4.0300				U
Aliph	nC9	5.6200				U
Aliph	Norpristane	18.5830				U
Aliph	Phytane	20.7870				U
Aliph	Pristane	19.3870				U

Results for: GCMS with Full Scan

Qualifier codes:

A	TIC is a possible aldol-condensation product
B	Analyte was also detected in the blank
D	Compound quantitated on a diluted sample
E	Inorganics: Estimated due to interference Organics: Concentration exceeds the calibration range of the instrument
J	Estimated - Result is \geq the Method Detection Limit (MDL) and $<$ the Limit of Quantitation (LOQ)
M	Duplicate injection precision not met
N	Spike sample not within control limits
O	Presumptive evidence of a compound
P	Concentration difference between primary and confirmation columns $> 25\%$
R	Spike/Surrogate failed recovery limits
S	Method of standard additions (MSA) used for calculation
T	Detected but Quantitated amount exceeded maximum
U	Compound Not Detected
V	overloaded and possibly not a water extract
X	Duplicate analysis not within control limits
Y	Detected
Z	Detected but not Quantified (too small)

Sample ID : **W13/007983**

Beach E1: Waitpinga Beach Visit: 3

Comments:

Location: Upper Intertidal

Local Date Time: 19/10/2016 11:26:38 AM

Type: Unknown

Family: Not bitumen (false sample)

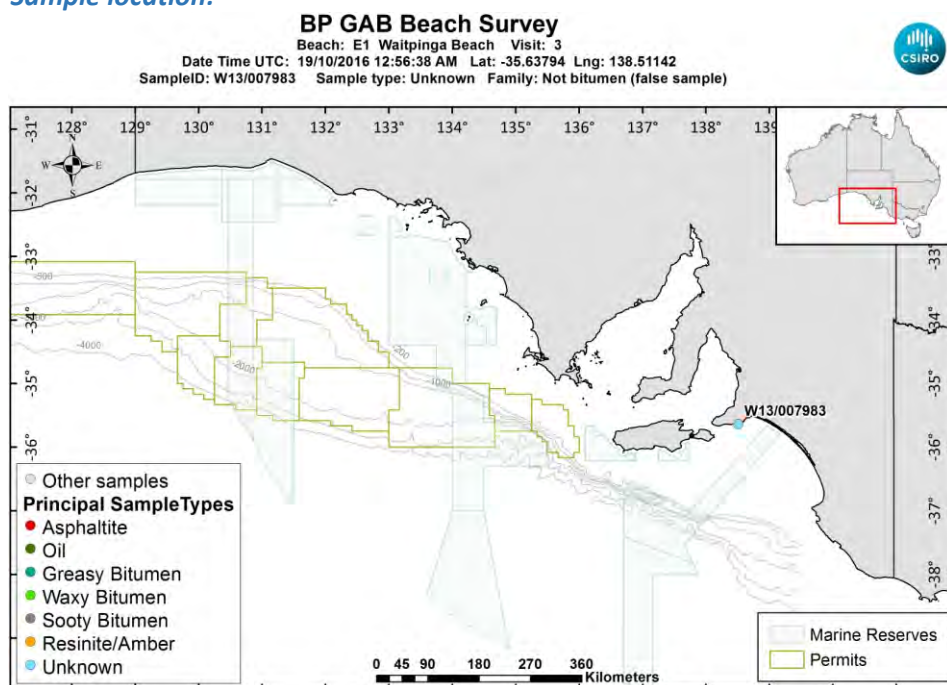
Size (cm): 3

Latitude (Y): -35.637945

Weight (gm): 5.69618

Longitude (X): 138.511420

Sample location:



[LinkedFiles\GAB_BCH1\SampleLocations\W13_007983_Location.jpg](#)

Sample - field image:



[LinkedFiles\GAB_BCH1\Samples\W13_007983_146A6880.JPG](#)

Sample - laboratory image:



[LinkedFiles\GAB_BCH1\Samples\W13_007983_Photo02.JPG](#)

Analyses Requested

Split:	Analysis:	Sent:
1	Bitumen Determination	YES

Analyses Completed:

Analysis:	Instrument/Type:
Whole Oils	GCMS with Full Scan Run: 1

Sample Analyses Completed:

Results for: GCMS with Full Scan

Unique ID: W13/007983 DISS GCMS-Scan/01

Instrument / Type: GCMS with Full Scan Run: 1

for Analysis: Whole Oils

Analysis Date: 30/10/2017

Linked Image: [None available](#)

Preparation: Dissolved in solvent

Method ID/s:

Sample Volume:

Volume Units:

Extract Volume:

Dilution Factor:

Comment:

Results for: GCMS with Full Scan

Data Sheet:

(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Respns:	Value:	units:	Qualifier:
Aliph	Botryococcane	31.9240				U
Aliph	nC10	7.5110				U
Aliph	nC11	9.4450				U
Aliph	nC12	11.3220				U
Aliph	nC13	13.1110				U
Aliph	nC14	14.8030				U
Aliph	nC15	16.4030				U
Aliph	nC16	17.9160				U
Aliph	nC17	19.3500				U
Aliph	nC18	20.7170				U
Aliph	nC19	22.0170				U
Aliph	nC20	23.2570				U
Aliph	nC21	24.4410				U
Aliph	nC22	25.5760				U
Aliph	nC23	26.6620				U
Aliph	nC24	27.7060				U
Aliph	nC25	28.7100				U
Aliph	nC26	29.6680				U
Aliph	nC27	30.6080				U
Aliph	nC28	31.5080				U
Aliph	nC29	32.3700				U
Aliph	nC30	33.2910				U
Aliph	nC31	34.3470				U
Aliph	nC32	35.5720				U
Aliph	nC33	37.0130				U
Aliph	nC34	38.7280				U
Aliph	nC35	40.8080				U
Aliph	nC36	43.3510				U
Aliph	nC37	46.4710				U
Aliph	nC8	4.0300				U
Aliph	nC9	5.6200				U
Aliph	Norpristane	18.5830				U
Aliph	Phytane	20.7870				U
Aliph	Pristane	19.3870				U

Qualifier codes:

A	TIC is a possible aldol-condensation product
B	Analyte was also detected in the blank
D	Compound quantitated on a diluted sample
E	Inorganics: Estimated due to interference Organics: Concentration exceeds the calibration range of the instrument
J	Estimated - Result is \geq the Method Detection Limit (MDL) and $<$ the Limit of Quantitation (LOQ)
M	Duplicate injection precision not met
N	Spike sample not within control limits
O	Presumptive evidence of a compound
P	Concentration difference between primary and confirmation columns $> 25\%$
R	Spike/Surrogate failed recovery limits
S	Method of standard additions (MSA) used for calculation
T	Detected but Quantitated amount exceeded maximum
U	Compound Not Detected
V	overloaded and possibly not a water extract
X	Duplicate analysis not within control limits
Y	Detected
Z	Detected but not Quantified (too small)

Sample ID : **W13/007984**

Beach E1: Waitpinga Beach Visit: 3

Comments:

recent stranding - in wet sand

Location: Mid Intertidal

Local Date Time: 19/10/2016 11:33:18 AM

Type: Waxy Bitumen

Family: Type IV waxy bitumen (no botryococcane, hig

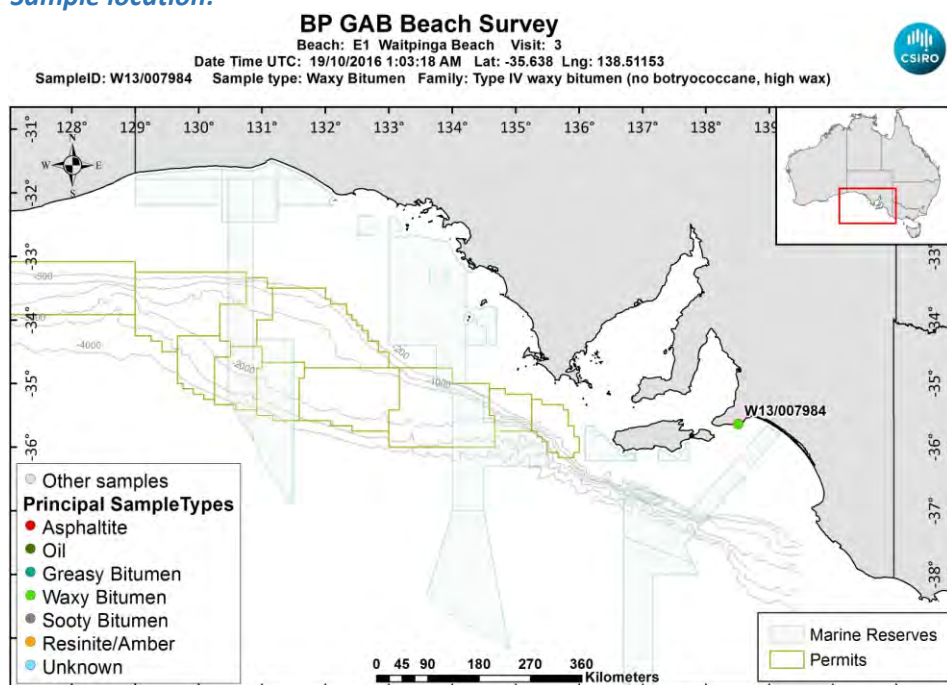
Size (cm): 4.2

Latitude (Y): -35.637997

Weight (gm): 16.84353

Longitude (X): 138.511528

Sample location:



[LinkedFiles\GAB_BCH1\SampleLocations\W13_007984_Location.jpg](#)

Sample - field image:



[LinkedFiles\GAB_BCH1\Samples\W13_007984_146A6883.JPG](#)

Sample - laboratory image:



[LinkedFiles\GAB_BCH1\Samples\W13_007984_Photo02.JPG](#)

Analyses Requested

Split:	Analysis:	Sent:
1	Bitumen Determination	YES
4	Biomarkers	YES

Analyses Completed:

Analysis:	Instrument/Type:
Biomarkers	Gas Chromatography Mass Spectrometry Run: 1
Elemental CHNS	Elemental Analyser Run: 1
Whole Oils	GCMS with Full Scan Run: 2
Whole Oils	GCMS with Full Scan Run: 1

Sample Analyses Completed:

Results for: Gas Chromatography Mass Spectrometry

Unique ID: W13/007984_DISS_GC-MS/01

Instrument / Type: Gas Chromatography Mass Spectrometry Run: 1

for Analysis: Biomarkers

Analysis Date: 18/07/2017

Linked Image: [None available](#)

Preparation: Dissolved in solvent

Method ID/s:

Sample Volume:

Volume Units:

Extract Volume:

Dilution Factor:

Comment: Internal Ratios only

Results for: Gas Chromatography Mass Spectrometry

Data Sheet:

(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Respnse:	Value:	units:	Qualifier:
BiomRatio	% C27 aaa 20R			30.4508773599555	ratio	Y
BiomRatio	% C27 abb 20(R+S)			33.0379204867542	ratio	Y
BiomRatio	% C28 aaa 20R			34.9694188836515	ratio	Y
BiomRatio	% C28 abb 20(R+S)			34.7634846443318	ratio	Y
BiomRatio	% C29 aaa 20R			34.579703756393	ratio	Y
BiomRatio	% C29 abb 20(R+S)			32.198594868914	ratio	Y
BiomRatio	(C21+C22)/(C27+C28+C29)			0.629003934367719	ratio	Y
BiomRatio	25-Nor/C30H			7.19564378283191E-02	ratio	Y
BiomRatio	C19t/C23t			0.163888314775105	ratio	Y
BiomRatio	C22t/C21t			0.190237656943264	ratio	Y
BiomRatio	C22t/C24t			0.187579265809529	ratio	Y
BiomRatio	C23t/C30H			0.512978697673956	ratio	Y
BiomRatio	C24t/C23t			0.555099852739815	ratio	Y
BiomRatio	C24Tet/C23t			0.179638049965123	ratio	Y
BiomRatio	C24Tet/C26t			0.277457166371549	ratio	Y
BiomRatio	C24Tet/C30H			9.21504929237977E-02	ratio	Y
BiomRatio	C26t/C25t			1.29942898623993	ratio	Y
BiomRatio	C27 Dia/(Dia+Reg)			0.727622994297166	ratio	Y
BiomRatio	C27 Dia/Ster			1.08654668926276	ratio	Y
BiomRatio	C28BNH/C30H			7.65618088837276E-02	ratio	Y
BiomRatio	C29/C27 abb Sterane Ratio			0.974595083302028	ratio	Y
BiomRatio	C29H/C30H			0.615207995454267	ratio	Y
BiomRatio	C29Ts/(C29Ts+C29H)			0.23165125276726	ratio	Y
BiomRatio	C30DiaH/C30H			0.21936144376726	ratio	Y
BiomRatio	C30Ts/C30H			0	ratio	U
BiomRatio	C35 Homohopane Index			5.15883708642369E-02	ratio	Y
BiomRatio	C35HS/C34HS			0.584991964396093	ratio	Y
BiomRatio	Gam/C30H			0.023727600585114	ratio	Y
BiomRatio	Gam/C31HR			0.121640098854343	ratio	Y
BiomRatio	Ole/C30H			3.22409106044467E-02	ratio	Y
BiomRatio	Sterane/hopane			2.42615654130532	ratio	Y
BiomRatio	Steranes/Terpanes			1.4772649774187	ratio	Y
BiomRatio	Tricyclic/Pentacyclic Terpanes			0.642329966790829	ratio	Y

Results for: Elemental Analyser

Unique ID: W13/007984_SPE_ELEM-AN/01

Instrument / Type: Elemental Analyser Run: 1

for Analysis: Elemental CHNS

Analysis Date: 30/10/2017

Linked Image: [None available](#)

Preparation: Solid Phase Extract

Method ID/s:

Sample Volume:

Volume Units:

Extract Volume:

Dilution Factor:

Comment:

Results for: Elemental Analyser**Data Sheet:**

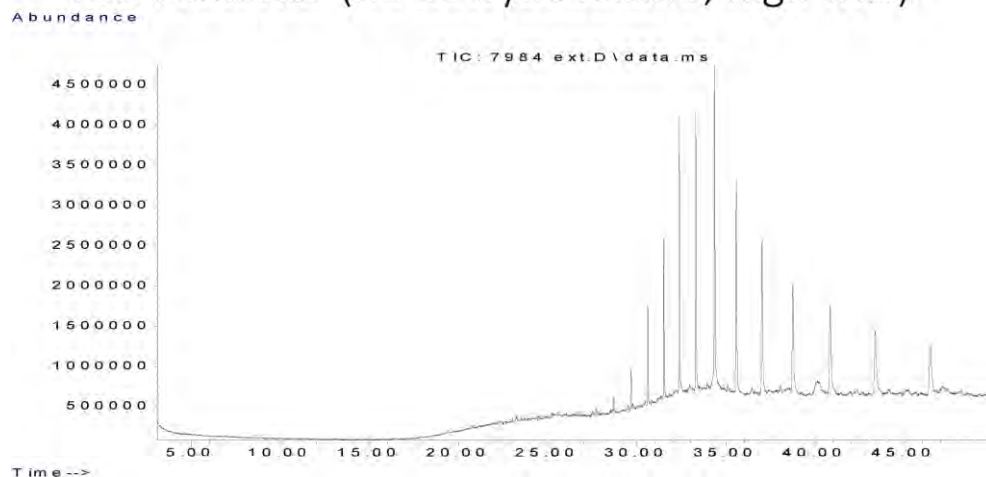
(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Respns:	Value:	units:	Qualifier:
Inorg	Carbon			83.15	percent	Y
Inorg	Hydrogen			7.09973677932406	percent	Y
Inorg	Nitrogen			0.01	percent	Y
Inorg	Sulphur			1.0162088496882	percent	Y

Results for: GCMS with Full Scan**Unique ID:** W13/007984_DISS_GCMS-Scan/01**Instrument / Type:** GCMS with Full Scan Run: 1**for Analysis:** Whole Oils**Preparation:** Dissolved in solvent**Analysis Date:** 30/10/2017**Method ID/s:****Linked Image:** [LinkedFiles\GAB_BCH1\GCMS\W13_007984_ext_WholeOil.jpg](#)**Sample Volume:****Volume Units:****Extract Volume:****Dilution Factor:****Comment:** Exterior

Results for: GCMS with Full Scan

7984 exterior (no botryococcane, high wax)



Data Sheet:

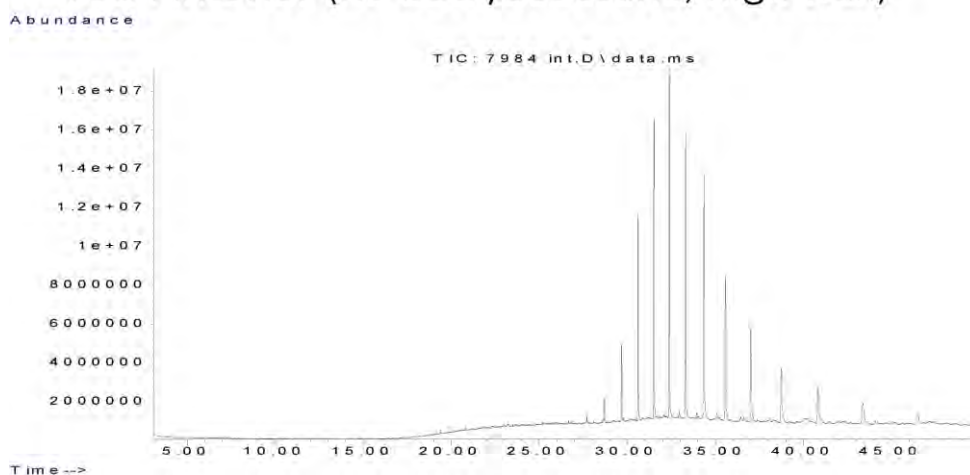
(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Respse:	Value:	units:	Qualifier:
Aliph	Botryococcane	31.9240				U
Aliph	nC10	7.5110				U
Aliph	nC11	9.4450				U
Aliph	nC12	11.3220				U
Aliph	nC13	13.1110				U
Aliph	nC14	14.8030				U
Aliph	nC15	16.4030				U
Aliph	nC16	17.9160				U
Aliph	nC17	19.3500				U
Aliph	nC18	20.7170				U
Aliph	nC19	22.0170				U
Aliph	nC20	23.2570				U
Aliph	nC21	24.4410				U
Aliph	nC22	25.5760				U
Aliph	nC23	26.6620	290290			Z
Aliph	nC24	27.7060	541963			Z
Aliph	nC25	28.7100	1154170			Z
Aliph	nC26	29.6680	2765645			Z
Aliph	nC27	30.6080	6301878			Z
Aliph	nC28	31.5080	11300628			Z
Aliph	nC29	32.3700	18784222			Z
Aliph	nC30	33.2910	20966940			Z
Aliph	nC31	34.3470	28212062			Z
Aliph	nC32	35.5720	20581049			Z
Aliph	nC33	37.0130	18444170			Z
Aliph	nC34	38.7280	15038060			Z
Aliph	nC35	40.8080	15087213			Z
Aliph	nC36	43.3510	12979813			Z
Aliph	nC37	46.4710	11880651			Z
Aliph	nC8	4.0300				U
Aliph	nC9	5.6200				U
Aliph	Norpristane	18.5830				U
Aliph	Phytane	20.7870	192598			Z
Aliph	Pristane	19.3870	321041			Z

Results for: GCMS with Full Scan**Results for: GCMS with Full Scan****Unique ID:** W13/007984 DISS GCMS-Scan/02**Instrument / Type:** GCMS with Full Scan Run: 2**for Analysis:** Whole Oils**Preparation:** Dissolved in solvent**Analysis Date:** 30/10/2017**Method ID/s:****Linked Image:** [LinkedFiles\GAB_BCH1\GCMS\W13_007984_int_WholeOil.jpg](#)**Sample Volume:****Volume Units:****Extract Volume:****Dilution Factor:****Comment:** Interior

Results for: GCMS with Full Scan

7984 interior (no botryococcane, high wax)



Data Sheet:

(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Respnse:	Value:	units:	Qualifier:
Aliph	Botryococcane	31.9240				U
Aliph	nC10	7.5110				U
Aliph	nC11	9.4450				U
Aliph	nC12	11.3220				U
Aliph	nC13	13.1110				U
Aliph	nC14	14.8030				U
Aliph	nC15	16.4030				U
Aliph	nC16	17.9160				U
Aliph	nC17	19.3500				U
Aliph	nC18	20.7170				U
Aliph	nC19	22.0170				U
Aliph	nC20	23.2570				U
Aliph	nC21	24.4410				U
Aliph	nC22	25.5760				U
Aliph	nC23	26.6620	600958			Z
Aliph	nC24	27.7060	2268701			Z
Aliph	nC25	28.7100	6402338			Z
Aliph	nC26	29.6680	21291333			Z
Aliph	nC27	30.6080	50976141			Z
Aliph	nC28	31.5080	77337276			Z
Aliph	nC29	32.3700	94095599			Z
Aliph	nC30	33.2910	80780205			Z
Aliph	nC31	34.3470	80876022			Z
Aliph	nC32	35.5720	58335181			Z
Aliph	nC33	37.0130	45778920			Z
Aliph	nC34	38.7280	29334721			Z
Aliph	nC35	40.8080	23445692			Z
Aliph	nC36	43.3510	18526988			Z
Aliph	nC37	46.4710	13379395			Z
Aliph	nC8	4.0300				U
Aliph	nC9	5.6200				U
Aliph	Norpristane	18.5830				U
Aliph	Phytane	20.7870	1195098			Z
Aliph	Pristane	19.3870	1360244			Z

Results for: GCMS with Full Scan**Qualifier codes:**

A	TIC is a possible aldol-condensation product
B	Analyte was also detected in the blank
D	Compound quantitated on a diluted sample
E	Inorganics: Estimated due to interference Organics: Concentration exceeds the calibration range of the instrument
J	Estimated - Result is \geq the Method Detection Limit (MDL) and $<$ the Limit of Quantitation (LOQ)
M	Duplicate injection precision not met
N	Spike sample not within control limits
O	Presumptive evidence of a compound
P	Concentration difference between primary and confirmation columns $> 25\%$
R	Spike/Surrogate failed recovery limits
S	Method of standard additions (MSA) used for calculation
T	Detected but Quantitated amount exceeded maximum
U	Compound Not Detected
V	overloaded and possibly not a water extract
X	Duplicate analysis not within control limits
Y	Detected
Z	Detected but not Quantified (too small)

Sample ID : **W13/007985**

Beach E1: Waitpinga Beach Visit: 3

Comments:

Picked up on walk back after survey finish

Location: Upper Intertidal

Local Date Time: 19/10/2016 5:05:04 PM

Type: Waxy Bitumen

Family: Type IV waxy bitumen (no botryococcane, hig

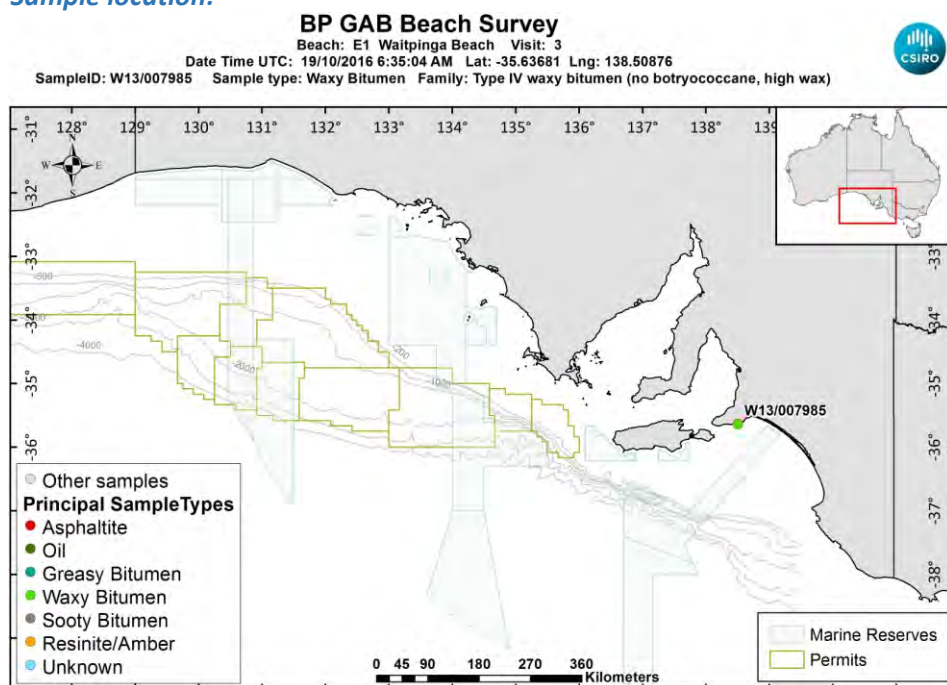
Size (cm): 3.7

Latitude (Y): -35.636810

Weight (gm): 9.23383

Longitude (X): 138.508760

Sample location:



[LinkedFiles\GAB_BCH1\SampleLocations\W13_007985_Location.jpg](#)

Sample - field image:



[LinkedFiles\GAB_BCH1\Samples\W13_007985_146A6886.JPG](#)

Sample - laboratory image:



[LinkedFiles\GAB_BCH1\Samples\W13_007985_Photo02.JPG](#)

Analyses Requested

Split:	Analysis:	Sent:
1	Bitumen Determination	YES
4	Biomarkers	YES

Analyses Completed:

Analysis:	Instrument/Type:
Biomarkers	Gas Chromatography Mass Spectrometry Run: 1
Elemental CHNS	Elemental Analyser Run: 1
Whole Oils	GCMS with Full Scan Run: 2
Whole Oils	GCMS with Full Scan Run: 1

Sample Analyses Completed:

Results for: Gas Chromatography Mass Spectrometry

Unique ID: W13/007985_DISS_GC-MS/01

Instrument / Type: Gas Chromatography Mass Spectrometry Run: 1

for Analysis: Biomarkers

Analysis Date: 18/07/2017

Linked Image: [None available](#)

Preparation: Dissolved in solvent

Method ID/s:

Sample Volume:

Volume Units:

Extract Volume:

Dilution Factor:

Comment: Internal Ratios only

Results for: Gas Chromatography Mass Spectrometry

Data Sheet:

(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Respse:	Value:	units:	Qualifier:
BiomRatio	% C27 aaa 20R			44.3094084122848	ratio	Y
BiomRatio	% C27 abb 20(R+S)			35.7422205848458	ratio	Y
BiomRatio	% C28 aaa 20R			20.717991183419	ratio	Y
BiomRatio	% C28 abb 20(R+S)			30.8923567946134	ratio	Y
BiomRatio	% C29 aaa 20R			34.9726004042963	ratio	Y
BiomRatio	% C29 abb 20(R+S)			33.3654226205408	ratio	Y
BiomRatio	(C21+C22)/(C27+C28+C29)			0.64658011238202	ratio	Y
BiomRatio	25-Nor/C30H			9.84507086026852E-02	ratio	Y
BiomRatio	C19t/C23t			0.127558736387607	ratio	Y
BiomRatio	C22t/C21t			0	ratio	U
BiomRatio	C22t/C24t			0	ratio	U
BiomRatio	C23t/C30H			0.460672032985248	ratio	Y
BiomRatio	C24t/C23t			0.606175261847069	ratio	Y
BiomRatio	C24Tet/C23t			0.154420900540279	ratio	Y
BiomRatio	C24Tet/C26t			0.206424121267689	ratio	Y
BiomRatio	C24Tet/C30H			7.11373901873032E-02	ratio	Y
BiomRatio	C26t/C25t			1.72891816740729	ratio	Y
BiomRatio	C27 Dia/(Dia+Reg)			0.741747424948386	ratio	Y
BiomRatio	C27 Dia/Ster			1.06565295155449	ratio	Y
BiomRatio	C28BNH/C30H			9.43379123155975E-02	ratio	Y
BiomRatio	C29/C27 abb Sterane Ratio			0.933501670421879	ratio	Y
BiomRatio	C29H/C30H			0.563543738604343	ratio	Y
BiomRatio	C29Ts/(C29Ts+C29H)			0.238534678551056	ratio	Y
BiomRatio	C30DiaH/C30H			0.245532384385878	ratio	Y
BiomRatio	C30Ts/C30H			0	ratio	U
BiomRatio	C35 Homohopane Index			3.78017804739711E-02	ratio	Y
BiomRatio	C35HS/C34HS			0.318044948723544	ratio	Y
BiomRatio	Gam/C30H			2.39800886789325E-02	ratio	Y
BiomRatio	Gam/C31HR			0.139623608891034	ratio	Y
BiomRatio	Ole/C30H			3.20710053041605E-02	ratio	Y
BiomRatio	Sterane/hopane			2.36380054381018	ratio	Y
BiomRatio	Steranes/Terpanes			1.48747867027672	ratio	Y
BiomRatio	Tricyclic/Pentacyclic Terpanes			0.589132396345843	ratio	Y

Results for: Elemental Analyser

Unique ID: W13/007985_SPE_ELEM-AN/01

Instrument / Type: Elemental Analyser Run: 1

for Analysis: Elemental CHNS

Analysis Date: 30/10/2017

Linked Image: [None available](#)

Preparation: Solid Phase Extract

Method ID/s:

Sample Volume:

Volume Units:

Extract Volume:

Dilution Factor:

Comment:

Results for: Elemental Analyser**Data Sheet:**

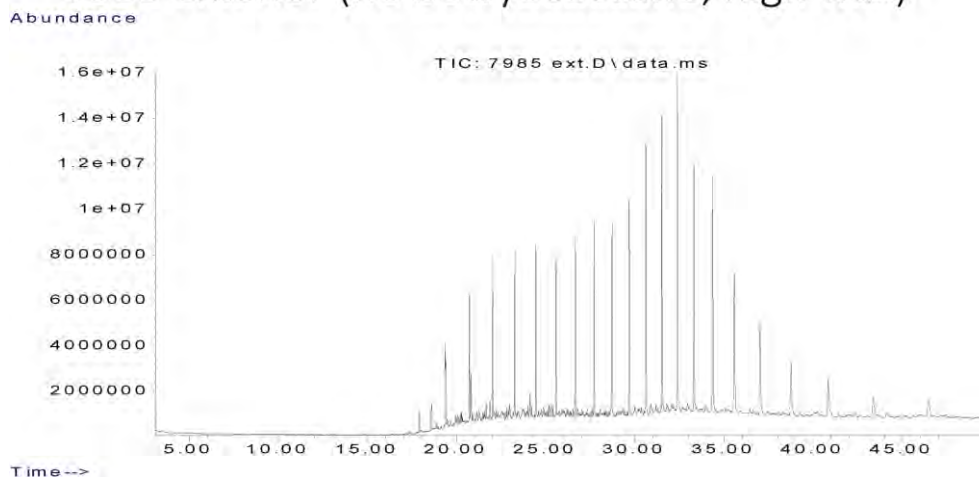
(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Respns:	Value:	units:	Qualifier:
Inorg	Carbon			86.21	percent	Y
Inorg	Hydrogen			12.266902584493	percent	Y
Inorg	Nitrogen			0.05	percent	Y
Inorg	Sulphur			2.666237210235	percent	Y

Results for: GCMS with Full Scan**Unique ID:** W13/007985_DISS_GCMS-Scan/01**Instrument / Type:** GCMS with Full Scan Run: 1**for Analysis:** Whole Oils**Preparation:** Dissolved in solvent**Analysis Date:** 30/10/2017**Method ID/s:****Linked Image:** [LinkedFiles\GAB_BCH1\GCMS\W13_007985_ext_WholeOil.jpg](#)**Sample Volume:****Volume Units:****Extract Volume:****Dilution Factor:****Comment:** Exterior

Results for: GCMS with Full Scan

7985 exterior (no botryococcane, high wax)



Data Sheet:

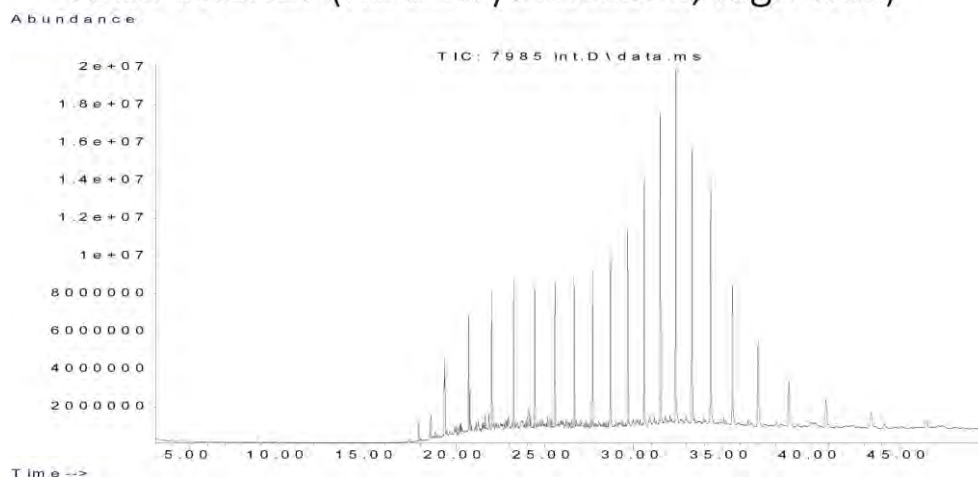
(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Respnse:	Value:	units:	Qualifier:
Aliph	Botryococcane	31.9240				U
Aliph	nC10	7.5110				U
Aliph	nC11	9.4450				U
Aliph	nC12	11.3220				U
Aliph	nC13	13.1110				U
Aliph	nC14	14.8030				U
Aliph	nC15	16.4030	233064			Z
Aliph	nC16	17.9160	4565788			Z
Aliph	nC17	19.3500	19469838			Z
Aliph	nC18	20.7170	26383186			Z
Aliph	nC19	22.0170	30938238			Z
Aliph	nC20	23.2570	33331273			Z
Aliph	nC21	24.4410	34134523			Z
Aliph	nC22	25.5760	34657566			Z
Aliph	nC23	26.6620	34366048			Z
Aliph	nC24	27.7060	36660671			Z
Aliph	nC25	28.7100	40490982			Z
Aliph	nC26	29.6680	48005127			Z
Aliph	nC27	30.6080	59170035			Z
Aliph	nC28	31.5080	67051470			Z
Aliph	nC29	32.3700	75796564			Z
Aliph	nC30	33.2910	64557860			Z
Aliph	nC31	34.3470	64933808			Z
Aliph	nC32	35.5720	48192537			Z
Aliph	nC33	37.0130	37955894			Z
Aliph	nC34	38.7280	27237177			Z
Aliph	nC35	40.8080	22802378			Z
Aliph	nC36	43.3510	15915211			Z
Aliph	nC37	46.4710	13524036			Z
Aliph	nC8	4.0300				U
Aliph	nC9	5.6200				U
Aliph	Norpristane	18.5830	8662099			Z
Aliph	Phytane	20.7870	11684891			Z
Aliph	Pristane	19.3870	15855981			Z

Results for: GCMS with Full Scan**Results for: GCMS with Full Scan****Unique ID:** W13/007985 DISS GCMS-Scan/02**Instrument / Type:** GCMS with Full Scan Run: 2**for Analysis:** Whole Oils**Preparation:** Dissolved in solvent**Analysis Date:** 30/10/2017**Method ID/s:****Linked Image:** [LinkedFiles\GAB_BCH1\GCMS\W13_007985_int_WholeOil.jpg](#)**Sample Volume:****Volume Units:****Extract Volume:****Dilution Factor:****Comment:** Interior

Results for: GCMS with Full Scan

7985 interior (no botryococcane, high wax)



Data Sheet:

(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Respnse:	Value:	units:	Qualifier:
Aliph	Botryococcane	31.9240				U
Aliph	nC10	7.5110				U
Aliph	nC11	9.4450				U
Aliph	nC12	11.3220				U
Aliph	nC13	13.1110				U
Aliph	nC14	14.8030				U
Aliph	nC15	16.4030	263754			Z
Aliph	nC16	17.9160	4755032			Z
Aliph	nC17	19.3500	20971426			Z
Aliph	nC18	20.7170	28004656			Z
Aliph	nC19	22.0170	32830157			Z
Aliph	nC20	23.2570	35324019			Z
Aliph	nC21	24.4410	35939147			Z
Aliph	nC22	25.5760	36124777			Z
Aliph	nC23	26.6620	35775448			Z
Aliph	nC24	27.7060	38923594			Z
Aliph	nC25	28.7100	45239176			Z
Aliph	nC26	29.6680	52877272			Z
Aliph	nC27	30.6080	67605814			Z
Aliph	nC28	31.5080	80944049			Z
Aliph	nC29	32.3700	95347043			Z
Aliph	nC30	33.2910	83648583			Z
Aliph	nC31	34.3470	84196842			Z
Aliph	nC32	35.5720	58802413			Z
Aliph	nC33	37.0130	41907017			Z
Aliph	nC34	38.7280	27226032			Z
Aliph	nC35	40.8080	21168998			Z
Aliph	nC36	43.3510	13793879			Z
Aliph	nC37	46.4710	9444477			Z
Aliph	nC8	4.0300				U
Aliph	nC9	5.6200				U
Aliph	Norpristane	18.5830	9669678			Z
Aliph	Phytane	20.7870	12728188			Z
Aliph	Pristane	19.3870	18495042			Z

Results for: GCMS with Full Scan**Qualifier codes:**

A	TIC is a possible aldol-condensation product
B	Analyte was also detected in the blank
D	Compound quantitated on a diluted sample
E	Inorganics: Estimated due to interference Organics: Concentration exceeds the calibration range of the instrument
J	Estimated - Result is \geq the Method Detection Limit (MDL) and $<$ the Limit of Quantitation (LOQ)
M	Duplicate injection precision not met
N	Spike sample not within control limits
O	Presumptive evidence of a compound
P	Concentration difference between primary and confirmation columns $> 25\%$
R	Spike/Surrogate failed recovery limits
S	Method of standard additions (MSA) used for calculation
T	Detected but Quantitated amount exceeded maximum
U	Compound Not Detected
V	overloaded and possibly not a water extract
X	Duplicate analysis not within control limits
Y	Detected
Z	Detected but not Quantified (too small)

Sample ID : **W13/007493**

Beach K2: West Bay Visit: 1

Comments:

Location: Mid Intertidal

Local Date Time: 19/11/2014 3:27:20 PM

Type: Asphaltite

Family: Asphaltite

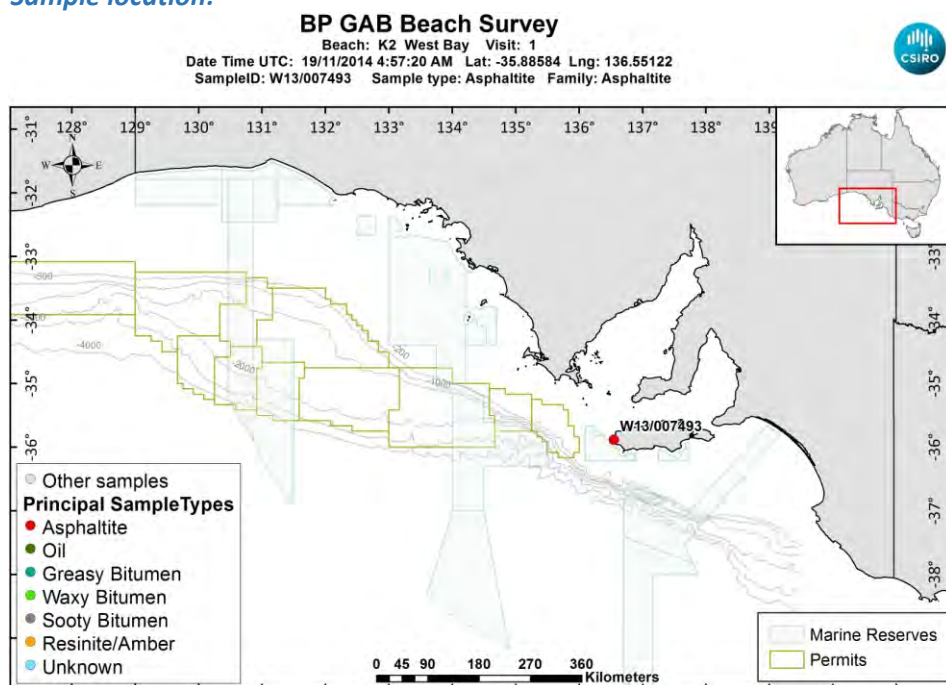
Size (cm): 8

Latitude (Y): -35.885841

Weight (gm): 18.28516

Longitude (X): 136.551217

Sample location:



[LinkedFiles\GAB_BCH1\SampleLocations\W13_007493_Location.jpg](#)

Sample - field image:



[LinkedFiles\GAB_BCH1\Samples\W13_007493_146A0437.JPG](#)

Sample - laboratory image:



[LinkedFiles\GAB_BCH1\Samples\W13_007493_Photo01.JPG](#)

Analyses Requested

Split:	Analysis:	Sent:
1	Bitumen Determination	YES
2	Whole Oils	YES
3	Elemental CHNS	YES
4	Biomarkers	YES

Analyses Completed:

Analysis:	Instrument/Type:
Biomarkers	Gas Chromatography Mass Spectrometry Run: 2
Biomarkers	Gas Chromatography Mass Spectrometry Run: 1
Elemental CHNS	Elemental Analyser Run: 1
Whole Oils	GCMS with Full Scan Run: 2
Whole Oils	GCMS with Full Scan Run: 1

Sample Analyses Completed:

Results for: Gas Chromatography Mass Spectrometry

Unique ID: W13/007493 DISS GC-MS/01

Instrument / Type: Gas Chromatography Mass Spectrometry Run: 1

for Analysis: Biomarkers

Analysis Date: 18/07/2017

Linked Image: [None available](#)

Preparation: Dissolved in solvent

Method ID/s:

Sample Volume:

Volume Units:

Extract Volume:

Dilution Factor:

Comment: External Ratios only

Results for: Gas Chromatography Mass Spectrometry

Data Sheet:

(default units ppb)

Type:	Compound / Variable:	Retention Time:	Target Response:	Value:	units:	Qualifier:
BiomRatio	% C27 aaa 20R			46.7343519672904	ratio	Y
BiomRatio	% C27 abb 20(R+S)			38.1886917786808	ratio	Y
BiomRatio	% C28 aaa 20R			18.3460336451106	ratio	Y
BiomRatio	% C28 abb 20(R+S)			23.955972569553	ratio	Y
BiomRatio	% C29 aaa 20R			34.919614387599	ratio	Y
BiomRatio	% C29 abb 20(R+S)			37.8553356517662	ratio	Y
BiomRatio	(C21+C22)/(C27+C28+C29)			6.72670526748198E-02	ratio	Y
BiomRatio	25-Nor/C30H			2.91842816090047E-02	ratio	Y
BiomRatio	C19t/C23t			0.413309134906231	ratio	Y
BiomRatio	C22t/C21t			0.296496550374321	ratio	Y
BiomRatio	C22t/C24t			0.286203476289439	ratio	Y
BiomRatio	C23t/C30H			0.043881946149711	ratio	Y
BiomRatio	C24t/C23t			0.640411373260738	ratio	Y
BiomRatio	C24Tet/C23t			1.37424379915305	ratio	Y
BiomRatio	C24Tet/C26t			2.74359129200761	ratio	Y
BiomRatio	C24Tet/C30H			6.03044923910086E-02	ratio	Y
BiomRatio	C26t/C25t			0.794449241988102	ratio	Y
BiomRatio	C27 Dia/(Dia+Reg)			0.329197993768622	ratio	Y
BiomRatio	C27 Dia/Ster			0.346976134808024	ratio	Y
BiomRatio	C28BNH/C30H			7.31345859022943E-02	ratio	Y
BiomRatio	C29/C27 abb Sterane Ratio			0.991270815747065	ratio	Y
BiomRatio	C29H/C30H			0.68107209461298	ratio	Y
BiomRatio	C29Ts/(C29Ts+C29H)			0.166218584482788	ratio	Y
BiomRatio	C30DiaH/C30H			6.06263729699954E-02	ratio	Y
BiomRatio	C30Ts/C30H			3.51088752762532E-02	ratio	Y
BiomRatio	C35 Homohopane Index			8.00327839044427E-02	ratio	Y
BiomRatio	C35HS/C34HS			0.85428348179403	ratio	Y
BiomRatio	Gam/C30H			8.93016186942931E-02	ratio	Y
BiomRatio	Gam/C31HR			0.282117944535415	ratio	Y
BiomRatio	Ole/C30H			2.51863257165991E-03	ratio	Y
BiomRatio	Sterane/hopane			0.289717562951596	ratio	Y
BiomRatio	Steranes/Terpanes			0.269968319570359	ratio	Y
BiomRatio	Tricyclic/Pentacyclic Terpanes			7.31539293672211E-02	ratio	Y

Results for: Gas Chromatography Mass Spectrometry

Unique ID: W13/007493 DISS GC-MS/02

Instrument / Type: Gas Chromatography Mass Spectrometry Run: 2

for Analysis: Biomarkers

Preparation: Dissolved in solvent

Analysis Date: 18/07/2017

Method ID/s:

Linked Image: [None available](#)

Sample Volume:

Volume Units:

Extract Volume:

Dilution Factor:

Comment: Internal Ratios only

Results for: Gas Chromatography Mass Spectrometry

Data Sheet:

(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Respnse:	Value:	units:	Qualifier:
BiomRatio	% C27 aaa 20R			44.4507432040352	ratio	Y
BiomRatio	% C27 abb 20(R+S)			37.2764680668667	ratio	Y
BiomRatio	% C28 aaa 20R			19.32509038968	ratio	Y
BiomRatio	% C28 abb 20(R+S)			25.2113159022718	ratio	Y
BiomRatio	% C29 aaa 20R			36.2241664062849	ratio	Y
BiomRatio	% C29 abb 20(R+S)			37.5122160308616	ratio	Y
BiomRatio	(C21+C22)/(C27+C28+C29)			6.22379165747076E-02	ratio	Y
BiomRatio	25-Nor/C30H			2.93406421203676E-02	ratio	Y
BiomRatio	C19t/C23t			0.370706368657863	ratio	Y
BiomRatio	C22t/C21t			0.297825175244144	ratio	Y
BiomRatio	C22t/C24t			0.280451339915374	ratio	Y
BiomRatio	C23t/C30H			4.19983837912079E-02	ratio	Y
BiomRatio	C24t/C23t			0.64838863079343	ratio	Y
BiomRatio	C24Tet/C23t			1.25525844094085	ratio	Y
BiomRatio	C24Tet/C26t			2.07491836981497	ratio	Y
BiomRatio	C24Tet/C30H			5.27188257597871E-02	ratio	Y
BiomRatio	C26t/C25t			0.904655106394617	ratio	Y
BiomRatio	C27 Dia/(Dia+Reg)			0.337037993332371	ratio	Y
BiomRatio	C27 Dia/Ster			0.364030148354907	ratio	Y
BiomRatio	C28BNH/C30H			8.10408876243267E-02	ratio	Y
BiomRatio	C29/C27 abb Sterane Ratio			1.00632431065014	ratio	Y
BiomRatio	C29H/C30H			0.694184720988899	ratio	Y
BiomRatio	C29Ts/(C29Ts+C29H)			0.163109310001222	ratio	Y
BiomRatio	C30DiaH/C30H			6.07752885977392E-02	ratio	Y
BiomRatio	C30Ts/C30H			2.84449674761025E-02	ratio	Y
BiomRatio	C35 Homohopane Index			8.33841675320746E-02	ratio	Y
BiomRatio	C35HS/C34HS			0.913279783800015	ratio	Y
BiomRatio	Gam/C30H			5.83432938089371E-02	ratio	Y
BiomRatio	Gam/C31HR			0.187661837085648	ratio	Y
BiomRatio	Ole/C30H			2.55336408022049E-03	ratio	Y
BiomRatio	Sterane/hopane			0.300210745203757	ratio	Y
BiomRatio	Steranes/Terpanes			0.280566239796276	ratio	Y
BiomRatio	Tricyclic/Pentacyclic Terpanes			0.070017352842397	ratio	Y

Results for: Elemental Analyser

Unique ID: W13/007493_UNK_ELEM-AN/01

Instrument / Type: Elemental Analyser Run: 1

for Analysis: Elemental CHNS

Preparation: Unknown

Analysis Date:

Method ID/s:

Linked Image: [None available](#)

Sample Volume:

Volume Units:

Extract Volume:

Dilution Factor:

Comment:

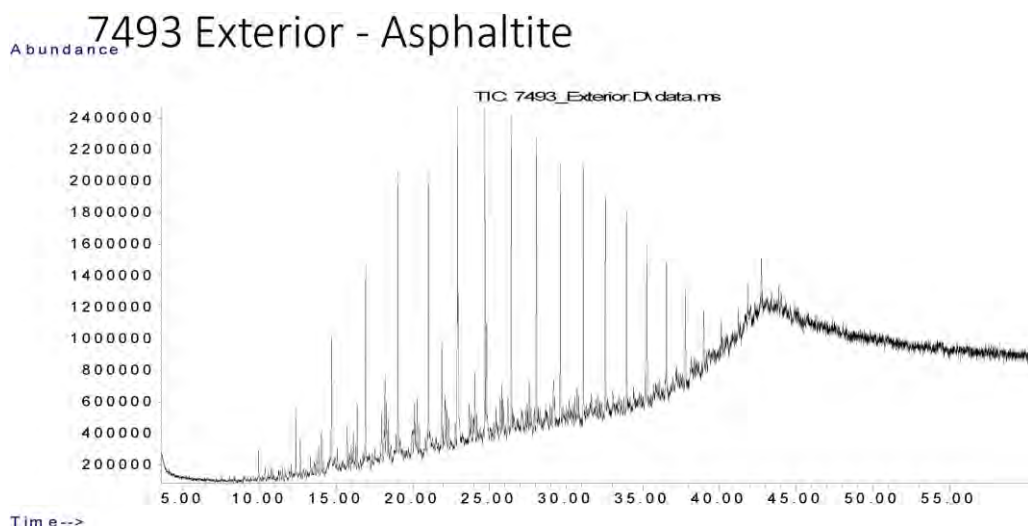
Results for: Elemental Analyser**Data Sheet:**

(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Respnse:	Value:	units:	Qualifier:
Inorg	Carbon			84.2033333333333	percent	Y
Inorg	delta13 Carbon			-29.71099316241	per mille	Y
Inorg	delta34 Sulphur			-5.97405728989562	per mille	Y
Inorg	Hydrogen			6.56666666666667	percent	Y
Inorg	Nitrogen			0.553333333333333	percent	Y
Inorg	Sulphur			4.05	percent	Y

Results for: GCMS with Full Scan**Unique ID:** W13/007493_DISS_GCMS-Scan/01**Instrument / Type:** GCMS with Full Scan Run: 1**for Analysis:** Whole Oils**Preparation:** Dissolved in solvent**Analysis Date:** 18/11/2016**Method ID/s:****Linked Image:** [LinkedFiles\GAB_BCH1\GCMS\W13_007493_ext_WholeOil.jpg](#)**Sample Volume:****Volume Units:****Extract Volume:****Dilution Factor:****Comment:** Exterior

Results for: GCMS with Full Scan



Data Sheet:

(default units ppb)

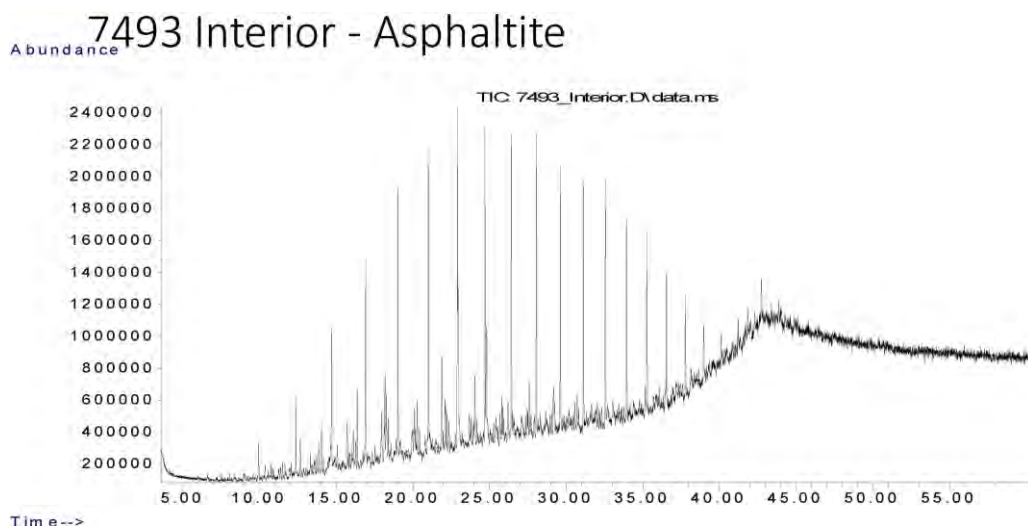
Type:	Compound / Variable:	Retentn Time:	Target Rspnse:	Value:	units:	Qualifier:
Ratio	nC17/nC29			12.3348941371792	ug/L	Y
Ratio	nC17/Pristane			2.19122859129597	ug/L	Y
Ratio	nC18/Phytane			4.52104562984424	ug/L	Y
Ratio	Pristane/Phytane			2.36990421166066	ug/L	Y
Aliph	Botryococcane	39.4780			ug/L	U
Aliph	nC10	7.5100			ug/L	U
Aliph	nC11	9.9450	1188776		ug/L	Z
Aliph	nC12	12.3690	3051063		ug/L	Z
Aliph	nC13	14.7030	5578653		ug/L	Z
Aliph	nC14	16.9230	8823057		ug/L	Z
Aliph	nC15	19.0270	10791815		ug/L	Z
Aliph	nC16	21.0200	11592971		ug/L	Z
Aliph	nC17	22.9150	13521881		ug/L	Z
Aliph	nC18	24.7150	11772197		ug/L	Z
Aliph	nC19	26.4300	11083396		ug/L	Z
Aliph	nC20	28.0680	10707652		ug/L	Z
Aliph	nC21	29.6330	9663923		ug/L	Z
Aliph	nC22	31.1340	8505832		ug/L	Z
Aliph	nC23	32.5720	7732084		ug/L	Z
Aliph	nC24	33.9520	6773284		ug/L	Z
Aliph	nC25	35.2810	5343281		ug/L	Z
Aliph	nC26	36.5600	4455861		ug/L	Z
Aliph	nC27	37.7930	3078974		ug/L	Z
Aliph	nC28	38.9870	1922953		ug/L	Z
Aliph	nC29	40.1370	1096230		ug/L	Z
Aliph	nC30	41.2480	889855		ug/L	Z
Aliph	nC31	42.3270			ug/L	U
Aliph	nC32	43.4130			ug/L	U
Aliph	nC33	44.6430			ug/L	U
Aliph	nC34	46.0860			ug/L	U
Aliph	nC35	47.8060			ug/L	U
Aliph	nC36	49.8090			ug/L	U
Aliph	nC37	52.2960			ug/L	U
Aliph	nC38	55.2370			ug/L	U

Results for: GCMS with Full Scan

Aliph	nC39	58.8850		ug/L	U
Aliph	Norpristane	21.9070	6137826	ug/L	Z
Aliph	Phytane	24.8210	2603866	ug/L	Z
Aliph	Pristane	22.9640	6170913	ug/L	Z

Results for: GCMS with Full Scan**Unique ID:** W13/007493 DISS GCMS-Scan/02**Instrument / Type:** GCMS with Full Scan Run: 2**for Analysis:** Whole Oils**Preparation:** Dissolved in solvent**Analysis Date:** 18/11/2016**Method ID/s:****Linked Image:** [LinkedFiles\GAB_BCH1\GCMS\W13_007493_int_WholeOil.jpg](#)**Sample Volume:****Volume Units:****Extract Volume:****Dilution Factor:****Comment:** Interior

Results for: GCMS with Full Scan



Data Sheet:

(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Respse:	Value:	units:	Qualifier:
Ratio	nC17/nC29			12.2091056762027	ug/L	Y
Ratio	nC17/Pristane			1.76202534253207	ug/L	Y
Ratio	nC18/Phytane			12.0104590579706	ug/L	Y
Ratio	Pristane/Phytane			7.42849695420234	ug/L	Y
Aliph	Botryococcane	39.4780			ug/L	U
Aliph	nC10	7.5100			ug/L	U
Aliph	nC11	9.9450	1456771		ug/L	Z
Aliph	nC12	12.3690	3442254		ug/L	Z
Aliph	nC13	14.7030	5836845		ug/L	Z
Aliph	nC14	16.9230	9199518		ug/L	Z
Aliph	nC15	19.0270	10975733		ug/L	Z
Aliph	nC16	21.0200	11615255		ug/L	Z
Aliph	nC17	22.9150	12830073		ug/L	Z
Aliph	nC18	24.7150	11772688		ug/L	Z
Aliph	nC19	26.4300	10826117		ug/L	Z
Aliph	nC20	28.0680	10094725		ug/L	Z
Aliph	nC21	29.6330	9615364		ug/L	Z
Aliph	nC22	31.1340	8289461		ug/L	Z
Aliph	nC23	32.5720	7821292		ug/L	Z
Aliph	nC24	33.9520	6624857		ug/L	Z
Aliph	nC25	35.2810	5661692		ug/L	Z
Aliph	nC26	36.5600	4342339		ug/L	Z
Aliph	nC27	37.7930	3177959		ug/L	Z
Aliph	nC28	38.9870	1868030		ug/L	Z
Aliph	nC29	40.1370	1050861		ug/L	Z
Aliph	nC30	41.2480	921850		ug/L	Z
Aliph	nC31	42.3270			ug/L	U
Aliph	nC32	43.4130			ug/L	U
Aliph	nC33	44.6430			ug/L	U
Aliph	nC34	46.0860			ug/L	U
Aliph	nC35	47.8060			ug/L	U
Aliph	nC36	49.8090			ug/L	U
Aliph	nC37	52.2960			ug/L	U
Aliph	nC38	55.2370			ug/L	U

Results for: GCMS with Full Scan

Aliph	nC39	58.8850		ug/L	U
Aliph	Norpristane	21.9070	6550577	ug/L	Z
Aliph	Phytane	24.8210	980203	ug/L	Z
Aliph	Pristane	22.9640	7281435	ug/L	Z

Qualifier codes:

A	TIC is a possible aldol-condensation product
B	Analyte was also detected in the blank
D	Compound quantitated on a diluted sample
E	Inorganics: Estimated due to interference Organics: Concentration exceeds the calibration range of the instrument
J	Estimated - Result is \geq the Method Detection Limit (MDL) and < the Limit of Quantitation (LOQ)
M	Duplicate injection precision not met
N	Spike sample not within control limits
O	Presumptive evidence of a compound
P	Concentration difference between primary and confirmation columns > 25%
R	Spike/Surrogate failed recovery limits
S	Method of standard additions (MSA) used for calculation
T	Detected but Quantitated amount exceeded maximum
U	Compound Not Detected
V	overloaded and possibly not a water extract
X	Duplicate analysis not within control limits
Y	Detected
Z	Detected but not Quantified (too small)

Sample ID : **W13/007494**

Beach K2: West Bay Visit: 1

Comments:

Location: Mid Intertidal

Local Date Time: 19/11/2014 3:31:27 PM

Type: Unknown

Family: Not bitumen (false sample)

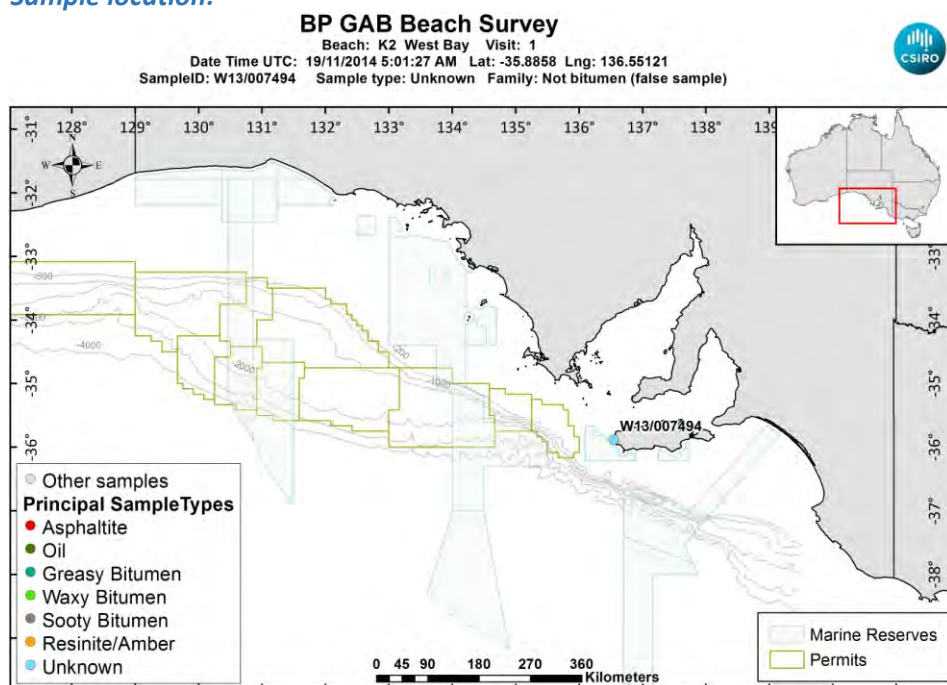
Size (cm): 2

Latitude (Y): -35.885799

Weight (gm): 1.13234

Longitude (X): 136.551208

Sample location:



[LinkedFiles\GAB_BCH1\SampleLocations\W13_007494_Location.jpg](#)

Sample - field image:



[LinkedFiles\GAB_BCH1\Samples\W13_007494_146A0440.JPG](#)

Sample - laboratory image:



[LinkedFiles\GAB_BCH1\Samples\W13_007494_Photo01.JPG](#)

Analyses Requested

Split:	Analysis:	Sent:
1	Bitumen Determination	YES

Analyses Completed:

Sample Analyses Completed:

No results to date

Qualifier codes:

A	TIC is a possible aldol-condensation product
B	Analyte was also detected in the blank
D	Compound quantitated on a diluted sample
E	Inorganics: Estimated due to interference Organics: Concentration exceeds the calibration range of the instrument
J	Estimated - Result is \geq the Method Detection Limit (MDL) and $<$ the Limit of Quantitation (LOQ)
M	Duplicate injection precision not met
N	Spike sample not within control limits
O	Presumptive evidence of a compound
P	Concentration difference between primary and confirmation columns $> 25\%$
R	Spike/Surrogate failed recovery limits
S	Method of standard additions (MSA) used for calculation
T	Detected but Quantitated amount exceeded maximum
U	Compound Not Detected
V	overloaded and possibly not a water extract
X	Duplicate analysis not within control limits
Y	Detected
Z	Detected but not Quantified (too small)

Sample ID : **W13/007921**

Beach K2: West Bay Visit: 3

Comments:

Found after survey end in the extended back shore

Location: Shore Upper

Local Date Time: 16/10/2016 3:15:21 PM

Type: Sooty Bitumen

Family: Sooty Bitumen

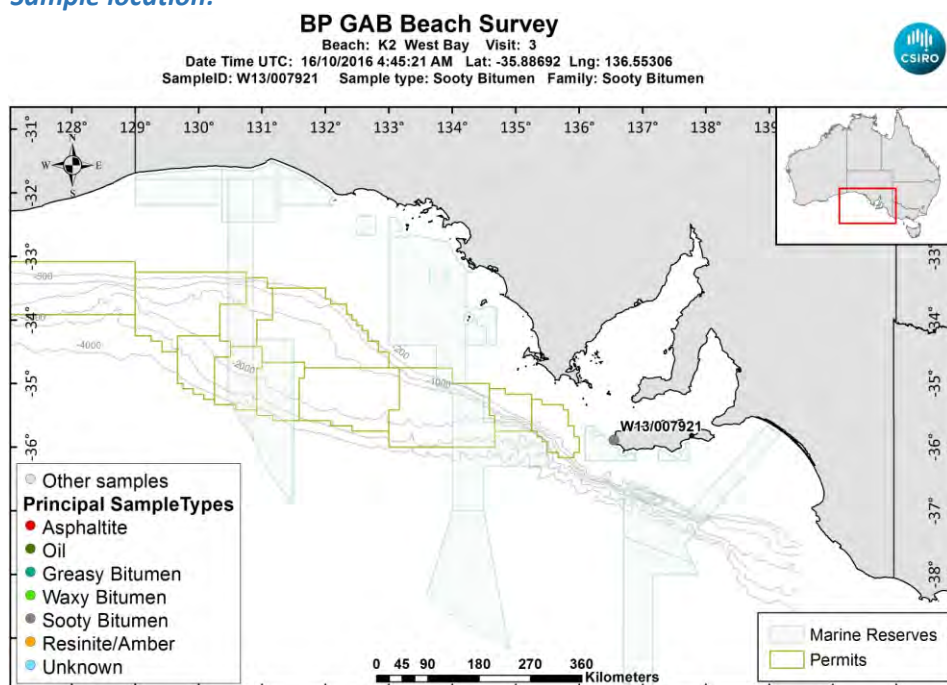
Size (cm): 3.2

Latitude (Y): -35.886925

Weight (gm): 7.16484

Longitude (X): 136.553062

Sample location:



[LinkedFiles\GAB_BCH1\SampleLocations\W13_007921_Location.jpg](#)

Sample - field image:



[LinkedFiles\GAB_BCH1\Samples\W13_007921_146A6718.JPG](#)

Sample - laboratory image:



[LinkedFiles\GAB_BCH1\Samples\W13_007921_Photo02.JPG](#)

Analyses Requested

Split:	Analysis:	Sent:
1	Bitumen Determination	YES

Analyses Completed:

Analysis:	Instrument/Type:
Elemental CHNS	Elemental Analyser Run: 1
Whole Oils	GCMS with Full Scan Run: 2
Whole Oils	GCMS with Full Scan Run: 1

Sample Analyses Completed:

Results for: Elemental Analyser

Unique ID: W13/007921_SPE_ELEM-AN/01

Instrument / Type: Elemental Analyser Run: 1

for Analysis: Elemental CHNS

Analysis Date: 30/10/2017

Linked Image: [None available](#)

Preparation: Solid Phase Extract

Method ID/s:

Sample Volume:

Volume Units:

Extract Volume:

Dilution Factor:

Comment:

Data Sheet:

Type:	Compound / Variable:	Retentn Time:	Target Respse:	Value:	units:	Qualifier:
Inorg	Carbon			82.5282531177059	percent	Y
Inorg	Hydrogen			9.65039761431409	percent	Y
Inorg	Nitrogen			0.51	percent	Y
Inorg	Sulphur			4.96779499002852	percent	Y

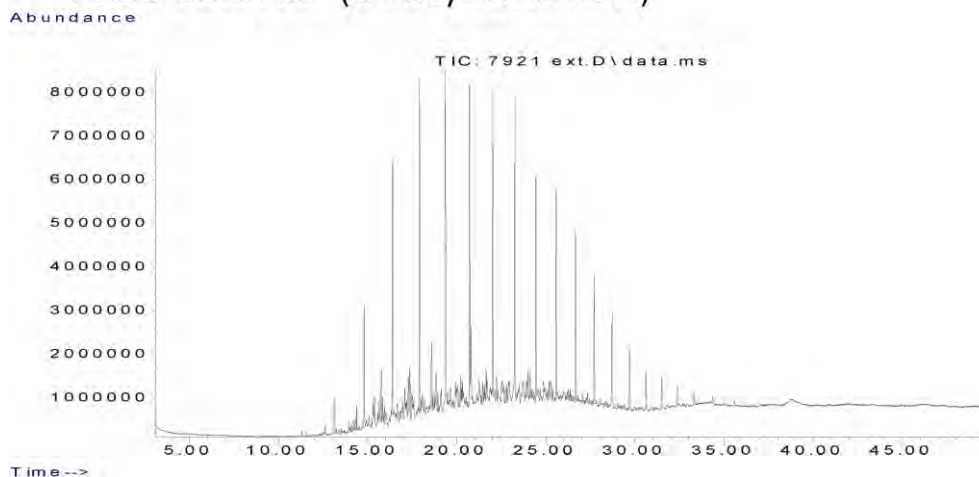
Results for: GCMS with Full Scan

Unique ID: W13/007921_DISS_GCMS-Scan/01

Results for: GCMS with Full Scan**Instrument / Type:** GCMS with Full Scan Run: 1**for Analysis:** Whole Oils**Preparation:** Dissolved in solvent**Analysis Date:** 30/10/2017**Method ID/s:****Linked Image:** [LinkedFiles\GAB_BCH1\GCMS\W13_007921_ext_WholeOil.jpg](#)**Sample Volume:****Volume Units:****Extract Volume:****Dilution Factor:****Comment:** Exterior

Results for: GCMS with Full Scan

7921 exterior (Sooty bitumen)



Data Sheet:

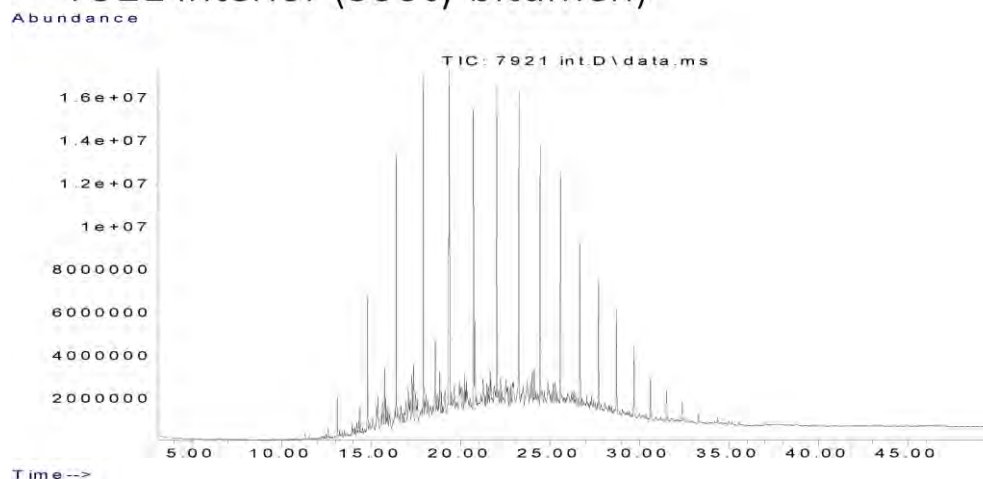
(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Respse:	Value:	units:	Qualifier:
Aliph	Botryococcane	31.9240				U
Aliph	nC10	7.5110				U
Aliph	nC11	9.4450	87689			Z
Aliph	nC12	11.3220	694209			Z
Aliph	nC13	13.1110	4518121			Z
Aliph	nC14	14.8030	15915360			Z
Aliph	nC15	16.4030	27648508			Z
Aliph	nC16	17.9160	34119185			Z
Aliph	nC17	19.3500	45590199			Z
Aliph	nC18	20.7170	34319789			Z
Aliph	nC19	22.0170	31980962			Z
Aliph	nC20	23.2570	29856697			Z
Aliph	nC21	24.4410	26482503			Z
Aliph	nC22	25.5760	21544258			Z
Aliph	nC23	26.6620	17639846			Z
Aliph	nC24	27.7060	13966728			Z
Aliph	nC25	28.7100	9444238			Z
Aliph	nC26	29.6680	7128271			Z
Aliph	nC27	30.6080	5190824			Z
Aliph	nC28	31.5080	3232160			Z
Aliph	nC29	32.3700	2259304			Z
Aliph	nC30	33.2910	1444184			Z
Aliph	nC31	34.3470	1296668			Z
Aliph	nC32	35.5720	899127			Z
Aliph	nC33	37.0130	717813			Z
Aliph	nC34	38.7280				U
Aliph	nC35	40.8080				U
Aliph	nC36	43.3510				U
Aliph	nC37	46.4710				U
Aliph	nC8	4.0300				U
Aliph	nC9	5.6200				U
Aliph	Norpristane	18.5830	13756730			Z
Aliph	Phytane	20.7870	10545550			Z
Aliph	Pristane	19.3870	18005173			Z

Results for: GCMS with Full Scan**Results for: GCMS with Full Scan****Unique ID:** W13/007921 DISS GCMS-Scan/02**Instrument / Type:** GCMS with Full Scan Run: 2**for Analysis:** Whole Oils**Preparation:** Dissolved in solvent**Analysis Date:** 30/10/2017**Method ID/s:****Linked Image:** [LinkedFiles\GAB_BCH1\GCMS\W13_007921_int_WholeOil.jpg](#)**Sample Volume:****Volume Units:****Extract Volume:****Dilution Factor:****Comment:** Interior

Results for: GCMS with Full Scan

7921 interior (Sooty bitumen)



Data Sheet:

(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Respnse:	Value:	units:	Qualifier:
Aliph	Botryococcane	31.9240				U
Aliph	nC10	7.5110				U
Aliph	nC11	9.4450	153854			Z
Aliph	nC12	11.3220	1582716			Z
Aliph	nC13	13.1110	9990605			Z
Aliph	nC14	14.8030	34929339			Z
Aliph	nC15	16.4030	57834921			Z
Aliph	nC16	17.9160	71654000			Z
Aliph	nC17	19.3500	93724491			Z
Aliph	nC18	20.7170	72387282			Z
Aliph	nC19	22.0170	68314020			Z
Aliph	nC20	23.2570	63581363			Z
Aliph	nC21	24.4410	55607943			Z
Aliph	nC22	25.5760	45448527			Z
Aliph	nC23	26.6620	36995903			Z
Aliph	nC24	27.7060	28509861			Z
Aliph	nC25	28.7100	20361484			Z
Aliph	nC26	29.6680	14314210			Z
Aliph	nC27	30.6080	10517072			Z
Aliph	nC28	31.5080	6923488			Z
Aliph	nC29	32.3700	4166804			Z
Aliph	nC30	33.2910	2839041			Z
Aliph	nC31	34.3470	2045285			Z
Aliph	nC32	35.5720	1251463			Z
Aliph	nC33	37.0130	983282			Z
Aliph	nC34	38.7280				U
Aliph	nC35	40.8080				U
Aliph	nC36	43.3510				U
Aliph	nC37	46.4710				U
Aliph	nC8	4.0300				U
Aliph	nC9	5.6200				U
Aliph	Norpristane	18.5830	29143870			Z
Aliph	Phytane	20.7870	23008729			Z
Aliph	Pristane	19.3870	40347981			Z

Results for: GCMS with Full Scan

Qualifier codes:

A	TIC is a possible aldol-condensation product
B	Analyte was also detected in the blank
D	Compound quantitated on a diluted sample
E	Inorganics: Estimated due to interference Organics: Concentration exceeds the calibration range of the instrument
J	Estimated - Result is \geq the Method Detection Limit (MDL) and < the Limit of Quantitation (LOQ)
M	Duplicate injection precision not met
N	Spike sample not within control limits
O	Presumptive evidence of a compound
P	Concentration difference between primary and confirmation columns > 25%
R	Spike/Surrogate failed recovery limits
S	Method of standard additions (MSA) used for calculation
T	Detected but Quantitated amount exceeded maximum
U	Compound Not Detected
V	overloaded and possibly not a water extract
X	Duplicate analysis not within control limits
Y	Detected
Z	Detected but not Quantified (too small)

Sample ID : **W13/007922**

Beach K2: West Bav Visit: 3

Comments:

Found after survey end in the extended back shore

Location: Shore Upper

Local Date Time: 16/10/2016 3:20:16 PM

Type: Waxy Bitumen

Family: Type I waxy bitumen (high botryococcane)

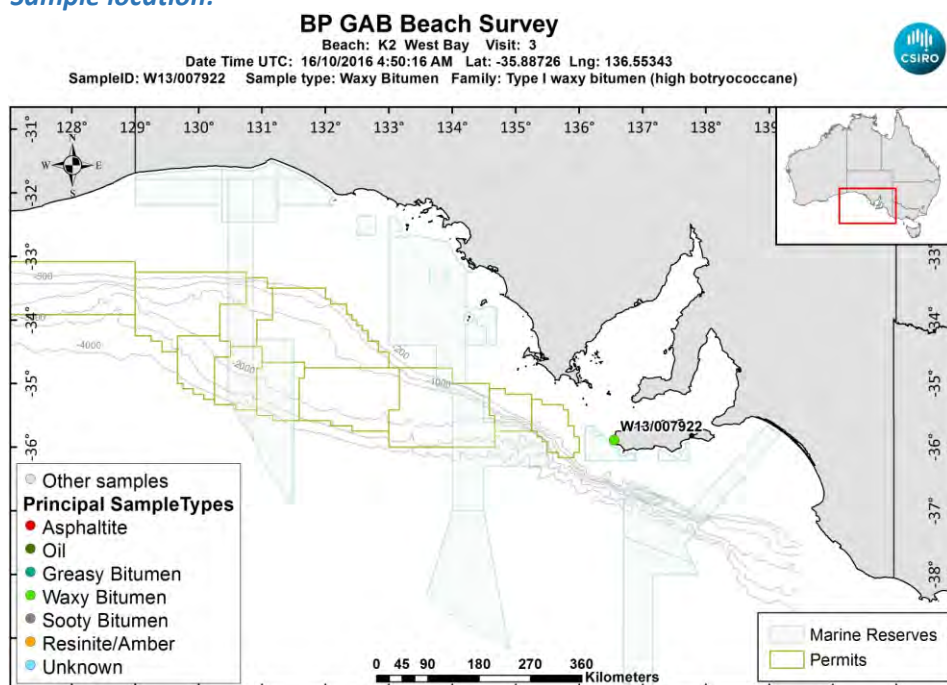
Size (cm): 2.4

Latitude (Y): -35.887255

Weight (gm): 2.63631

Longitude (X): 136.553433

Sample location:



[LinkedFiles\GAB_BCH1\SampleLocations\W13_007922_Location.jpg](#)

Sample - field image:



[LinkedFiles\GAB_BCH1\Samples\W13_007922_146A6720.JPG](#)

Sample - laboratory image:



[LinkedFiles\GAB_BCH1\Samples\W13_007922_Photo02.JPG](#)

Analyses Requested

Split:	Analysis:	Sent:
1	Bitumen Determination	YES
4	Biomarkers	YES

Analyses Completed:

Analysis:	Instrument/Type:
Biomarkers	Gas Chromatography Mass Spectrometry Run: 1
Elemental CHNS	Elemental Analyser Run: 1
Whole Oils	GCMS with Full Scan Run: 3
Whole Oils	GCMS with Full Scan Run: 2
Whole Oils	GCMS with Full Scan Run: 1

Sample Analyses Completed:

Results for: Gas Chromatography Mass Spectrometry

Unique ID: W13/007922 DISS GC-MS/01

Instrument / Type: Gas Chromatography Mass Spectrometry Run: 1

for Analysis: Biomarkers

Analysis Date: 18/07/2017

Linked Image: [None available](#)

Preparation: Dissolved in solvent

Method ID/s:

Sample Volume:

Volume Units:

Extract Volume:

Dilution Factor:

Comment: Internal Ratios only

Results for: Gas Chromatography Mass Spectrometry

Data Sheet:

(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Respns:	Value:	units:	Qualifier:
BiomRatio	% C27 aaa 20R			37.7671934873271	ratio	Y
BiomRatio	% C27 abb 20(R+S)			43.7658404951956	ratio	Y
BiomRatio	% C28 aaa 20R			7.86999276711654	ratio	Y
BiomRatio	% C28 abb 20(R+S)			22.1088084566053	ratio	Y
BiomRatio	% C29 aaa 20R			54.3628137455564	ratio	Y
BiomRatio	% C29 abb 20(R+S)			34.1253510481991	ratio	Y
BiomRatio	(C21+C22)/(C27+C28+C29)			7.65762590972587E-02	ratio	Y
BiomRatio	25-Nor/C30H			7.44437213842804E-02	ratio	Y
BiomRatio	C19t/C23t			0.198550376378344	ratio	Y
BiomRatio	C22t/C21t			0.104725175538337	ratio	Y
BiomRatio	C22t/C24t			6.86783831445075E-02	ratio	Y
BiomRatio	C23t/C30H			0.106246909921828	ratio	Y
BiomRatio	C24t/C23t			0.878067186504379	ratio	Y
BiomRatio	C24Tet/C23t			0.314906364411997	ratio	Y
BiomRatio	C24Tet/C26t			0.326543896856561	ratio	Y
BiomRatio	C24Tet/C30H			3.34578281334917E-02	ratio	Y
BiomRatio	C26t/C25t			1.82892452801204	ratio	Y
BiomRatio	C27 Dia/(Dia+Reg)			0.688787817542309	ratio	Y
BiomRatio	C27 Dia/Ster			1.00698006527709	ratio	Y
BiomRatio	C28BNH/C30H			0.040660731326031	ratio	Y
BiomRatio	C29/C27 abb Sterane Ratio			0.779725709870581	ratio	Y
BiomRatio	C29H/C30H			0.570462101423842	ratio	Y
BiomRatio	C29Ts/(C29Ts+C29H)			0.337286133235578	ratio	Y
BiomRatio	C30DiaH/C30H			0.186609524992502	ratio	Y
BiomRatio	C30Ts/C30H			0	ratio	U
BiomRatio	C35 Homohopane Index			4.90902864350471E-02	ratio	Y
BiomRatio	C35HS/C34HS			0.504907680572342	ratio	Y
BiomRatio	Gam/C30H			4.91853668241032E-02	ratio	Y
BiomRatio	Gam/C31HR			0.262204479366028	ratio	Y
BiomRatio	Ole/C30H			0.113761635798277	ratio	Y
BiomRatio	Sterane/hopane			7.87078260154955E-02	ratio	Y
BiomRatio	Steranes/Terpanes			6.68879520628816E-02	ratio	Y
BiomRatio	Tricyclic/Pentacyclic Terpanes			0.176711553995583	ratio	Y

Results for: Elemental Analyser

Unique ID: W13/007922_SPE_ELEM-AN/01

Instrument / Type: Elemental Analyser Run: 1

for Analysis: Elemental CHNS

Analysis Date: 30/10/2017

Linked Image: [None available](#)

Preparation: Solid Phase Extract

Method ID/s:

Sample Volume:

Volume Units:

Extract Volume:

Dilution Factor:

Comment:

Results for: Elemental Analyser**Data Sheet:**

(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Respns:	Value:	units:	Qualifier:
Inorg	Carbon			86.5634434144715	percent	Y
Inorg	Hydrogen			8.79645049701782	percent	Y
Inorg	Nitrogen			0.27	percent	Y
Inorg	Sulphur			1.94663522973043	percent	Y

Results for: GCMS with Full Scan**Unique ID:** W13/007922_DISS_GCMS-Scan/01**Instrument / Type:** GCMS with Full Scan Run: 1**for Analysis:** Whole Oils**Preparation:** Dissolved in solvent**Analysis Date:** 30/10/2017**Method ID/s:****Linked Image:** [None available](#)**Sample Volume:****Volume Units:****Extract Volume:****Dilution Factor:****Comment:**

Results for: GCMS with Full Scan

Data Sheet:

(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Respse:	Value:	units:	Qualifier:
Aliph	Botryococcane	31.9240	11763416			Z
Aliph	nC10	7.5110				U
Aliph	nC11	9.4450				U
Aliph	nC12	11.3220				U
Aliph	nC13	13.1110				U
Aliph	nC14	14.8030				U
Aliph	nC15	16.4030				U
Aliph	nC16	17.9160				U
Aliph	nC17	19.3500				U
Aliph	nC18	20.7170				U
Aliph	nC19	22.0170				U
Aliph	nC20	23.2570				U
Aliph	nC21	24.4410				U
Aliph	nC22	25.5760				U
Aliph	nC23	26.6620				U
Aliph	nC24	27.7060				U
Aliph	nC25	28.7100				U
Aliph	nC26	29.6680				U
Aliph	nC27	30.6080	374166			Z
Aliph	nC28	31.5080	752584			Z
Aliph	nC29	32.3700	381167			Z
Aliph	nC30	33.2910	642485			Z
Aliph	nC31	34.3470	1081899			Z
Aliph	nC32	35.5720	980730			Z
Aliph	nC33	37.0130	1096196			Z
Aliph	nC34	38.7280	1338228			Z
Aliph	nC35	40.8080	1586583			Z
Aliph	nC36	43.3510	1578287			Z
Aliph	nC37	46.4710	1592077			Z
Aliph	nC8	4.0300				U
Aliph	nC9	5.6200				U
Aliph	Norpristane	18.5830				U
Aliph	Phytane	20.7870				U
Aliph	Pristane	19.3870				U

Results for: GCMS with Full Scan

Unique ID: W13/007922_DISS_GCMS-Scan/02

Instrument / Type: GCMS with Full Scan Run: 2

for Analysis: Whole Oils

Preparation: Dissolved in solvent

Analysis Date: 30/10/2017

Method ID/s:

Linked Image: [None available](#)

Sample Volume:

Volume Units:

Extract Volume:

Dilution Factor:

Comment:

Results for: GCMS with Full Scan

Data Sheet:

(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Respse:	Value:	units:	Qualifier:
Aliph	Botryococcane	31.9240	19113211			Z
Aliph	nC10	7.5110				U
Aliph	nC11	9.4450				U
Aliph	nC12	11.3220				U
Aliph	nC13	13.1110				U
Aliph	nC14	14.8030				U
Aliph	nC15	16.4030				U
Aliph	nC16	17.9160				U
Aliph	nC17	19.3500				U
Aliph	nC18	20.7170				U
Aliph	nC19	22.0170				U
Aliph	nC20	23.2570				U
Aliph	nC21	24.4410				U
Aliph	nC22	25.5760				U
Aliph	nC23	26.6620				U
Aliph	nC24	27.7060	274215			Z
Aliph	nC25	28.7100	1991587			Z
Aliph	nC26	29.6680	8049034			Z
Aliph	nC27	30.6080	22600775			Z
Aliph	nC28	31.5080	32001597			Z
Aliph	nC29	32.3700	36373638			Z
Aliph	nC30	33.2910	32119334			Z
Aliph	nC31	34.3470	28823830			Z
Aliph	nC32	35.5720	22516401			Z
Aliph	nC33	37.0130	17460911			Z
Aliph	nC34	38.7280	12843957			Z
Aliph	nC35	40.8080	9002289			Z
Aliph	nC36	43.3510	6897626			Z
Aliph	nC37	46.4710	5094192			Z
Aliph	nC8	4.0300				U
Aliph	nC9	5.6200				U
Aliph	Norpristane	18.5830				U
Aliph	Phytane	20.7870				U
Aliph	Pristane	19.3870				U

Results for: GCMS with Full Scan

Unique ID: W13/007922_DISS_GCMS-Scan/03

Instrument / Type: GCMS with Full Scan Run: 3

for Analysis: Whole Oils

Preparation: Dissolved in solvent

Analysis Date: 30/10/2017

Method ID/s:

Linked Image: [LinkedFiles\GAB_BCH1\GCMS\W13_007922_bulk_WholeOil.jpg](#)

Sample Volume:

Volume Units:

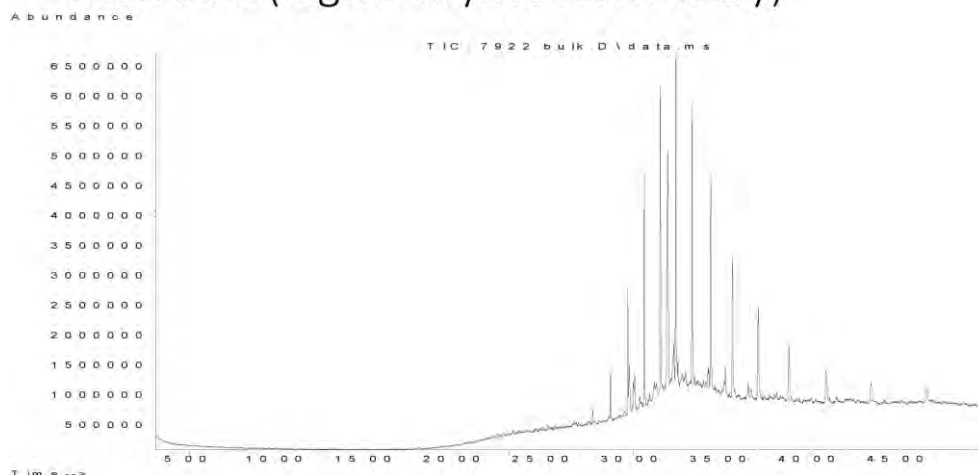
Extract Volume:

Dilution Factor:

Comment: Bulk

Results for: GCMS with Full Scan

7922 bulk (high botryococcane waxy)



Data Sheet:

(default units ppb)

Type:	Compound / Variable:	Retentn Time:	Target Respse:	Value:	units:	Qualifier:
Aliph	Botryococcane	31.9240	31490592			Z
Aliph	nC10	7.5110				U
Aliph	nC11	9.4450				U
Aliph	nC12	11.3220				U
Aliph	nC13	13.1110				U
Aliph	nC14	14.8030				U
Aliph	nC15	16.4030				U
Aliph	nC16	17.9160				U
Aliph	nC17	19.3500				U
Aliph	nC18	20.7170				U
Aliph	nC19	22.0170				U
Aliph	nC20	23.2570				U
Aliph	nC21	24.4410				U
Aliph	nC22	25.5760				U
Aliph	nC23	26.6620	447373			Z
Aliph	nC24	27.7060	1066913			Z
Aliph	nC25	28.7100	3702694			Z
Aliph	nC26	29.6680	8942112			Z
Aliph	nC27	30.6080	19317364			Z
Aliph	nC28	31.5080	24814805			Z
Aliph	nC29	32.3700	28178871			Z
Aliph	nC30	33.2910	25123624			Z
Aliph	nC31	34.3470	23668016			Z
Aliph	nC32	35.5720	18184080			Z
Aliph	nC33	37.0130	13771260			Z
Aliph	nC34	38.7280	9378385			Z
Aliph	nC35	40.8080	6655097			Z
Aliph	nC36	43.3510	4531937			Z
Aliph	nC37	46.4710	3867770			Z
Aliph	nC8	4.0300				U
Aliph	nC9	5.6200				U
Aliph	Norpristane	18.5830				U
Aliph	Phytane	20.7870				U
Aliph	Pristane	19.3870				U

Results for: GCMS with Full Scan**Qualifier codes:**

A	TIC is a possible aldol-condensation product
B	Analyte was also detected in the blank
D	Compound quantitated on a diluted sample
E	Inorganics: Estimated due to interference Organics: Concentration exceeds the calibration range of the instrument
J	Estimated - Result is \geq the Method Detection Limit (MDL) and < the Limit of Quantitation (LOQ)
M	Duplicate injection precision not met
N	Spike sample not within control limits
O	Presumptive evidence of a compound
P	Concentration difference between primary and confirmation columns > 25%
R	Spike/Surrogate failed recovery limits
S	Method of standard additions (MSA) used for calculation
T	Detected but Quantitated amount exceeded maximum
U	Compound Not Detected
V	overloaded and possibly not a water extract
X	Duplicate analysis not within control limits
Y	Detected
Z	Detected but not Quantified (too small)



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