

# **2010 SOIL GEOCHEMICAL AND GEOLOGICAL MAPPING ASSESSMENT REPORT**

Property Comprising the Following Claims:

Mom 1 through 8 and Son 1 through 6 claims,  
K100 and K101 claims,  
Barb One claim.

Located in the:  
Keno Hill Area  
Mayo Mining District  
Yukon Territory, Canada  
N.T.S. 105M/14

Latitude: 63° 57' N  
Longitude: 135° 10' W

**PREPARED FOR:**

Alexco Resource Corp.  
1150-200 Granville Street  
Vancouver, B.C. V6C 1S4

and

**PREPARED BY:**

Richard Lippoth, MS, Geologist

Alexco Resource Corp.  
1150-200 Granville St.  
Vancouver, B.C. V6C 1S4

**DATES WORK PERFORMED:**

Soil Sampling, July 24 and July 28, 2010  
Geological Mapping, August 9 & 10, 2010

**DATE OF REPORT:**

October 21, 2010

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## **1.0 SUMMARY**

During July and August 2010 soil samples were collected within the boundaries of seventeen contiguous full and fractional quartz mining claims located on the southerly flank of Keno Hill. In addition, as part of a district wide surface geological mapping program, the claim group was mapped in detail. The results of the surface soil sampling are not easily interpreted probably because the sample spacing was too wide for the technique used (Soil Gas Hydrocarbon analysis).

## **2.0 INTRODUCTION**

This report summarizes soil sampling and geological mapping completed during the 2010 field season on claims optioned from Dirk Moraal by Alexco Resource Corp. Work for assessment purposes was conducted between July 25, 2010 and August 10, 2010 and was spread to three contiguous claims adjacent to the Moraal group. Planning, supervision, implementation and reporting of this work were performed by Alexco Resource Corp. staff.

Evidence of past work on the property can be seen in the form of surface trenches excavated at a number of locations. More recently Mr. Dirk Moraal has carried out surface sampling programs and ground geophysical surveys across the claim block. Important vein zones have been projected into the claims from the northeast and these covered and inferred structures are the focus of the current program of surface sampling.

## **3.0 LOCATION AND ACCESS**

The properties are located at Keno Hill in the Mayo Mining District approximately 350 km north of Whitehorse (Figure 1). The area is covered by NTS map sheets 105M/14. The reference datum used is UTM NAD83 Zone 8, unless otherwise noted.

Access to the property can be had via the Silver Trail highway connecting the villages of Mayo and Keno City thence the “Signpost road” traversing the flank of Keno Hill. The base of operations for Alexco is the abandoned company town of Elsa which contains camp and office facilities.



**FIGURE 1, KENO HILL, YUKON LOCATION MAP**



## 5.0 REGIONAL GEOLOGY

The property is situated within the western part of the Selwyn Basin in an area dominated by deformed and metamorphosed sediments accumulated at the edge of the Neoproterozoic to Paleozoic continental margin. During the Jurassic and Cretaceous, the area was subjected to compressional tectonic forces producing imbricate thrust sheets and widespread folding. In the mid-Cretaceous, renewed tectonism resulted in extensive brittle deformation and the emplacement of intrusive plutons.

Rocks thought to underlie the claim area include the Keno Hill Quartzite (Mississippian) host to most of the past producing ore bodies in the Keno Hill Camp. Structurally juxtaposed below the quartzite is the Lower Schist which has been correlated with the Devonian-Mississippian Earn Group. Overlying the quartzite in thrust contact is the Upper Schist (Hyland Group, pre-Cambrian to Cambrian).

## 6.0 PROPERTY GEOLOGY

A variety of mineral deposits occur near the claim areas, mainly localized by veins cutting interbanded quartzites and schists (Figure 3). In detail the structures controlling the distribution of mineralization form generally northeast trending zones that dip to the south. Intersecting structures are often important sites of mineral deposition where sufficiently brittle host rocks produce permeable fluid pathways.

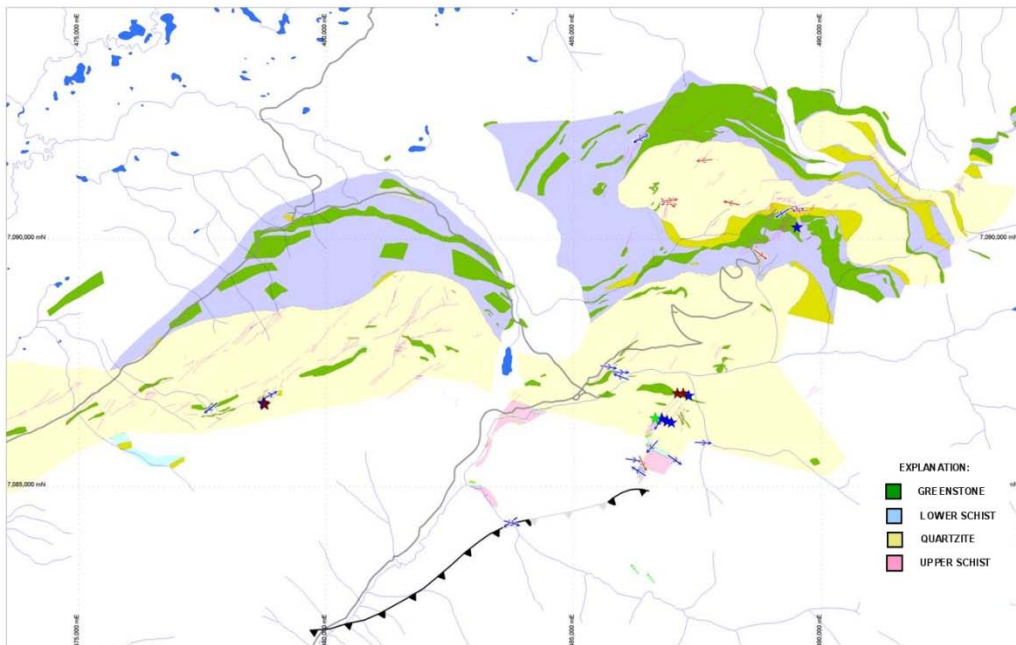


FIGURE 3 KENO HILL DISTRICT GEOLOGY MAP

## **7.0 2010 SOIL SAMPLING WORK PROGRAM**

Soil samples were collected in three lines across portions of the seven claims/fractions covered by this report during the 2010 field season. All work was performed by geologists in the employ of Alexco Resource Corp. Soil sample characteristics were recorded in the field and entered into standardized spreadsheets (Appendix 5). Analysis of the samples for soil gas hydrocarbons was carried out by Activation Laboratories of Ancaster, ON with the results appended in Appendix 6.

### **Soil Sampling Results**

Soil gas hydrocarbons comprise a large group of organic compounds thought to be produced at the end of the life cycle of bacteria feeding on minerals containing sulphur. In theory higher concentrations of hydrocarbon gases should be indicative of buried sulphide bodies, although burial depth and grades of inferred mineralization cannot be deduced from gas concentrations. The hydrocarbon gas molecules continuously migrate to the surface (vertically) where they attach themselves to any porous sample medium such as soil.

An interpretive report prepared by Activation Labs. accompanies the soil gas hydrocarbon analyses (Appendix 6). Laboratory personnel use suites of hydrocarbon gases found over specific, known orebodies as templates to compare with the results of sampling over the claims in question. In this case, they used Ag-Pb-Zn SEDEX deposits as models for comparison. Unfortunately the sample transects appear to have been too widely spaced to produce any definitive pattern.

## **8.0 GEOLOGICAL MAPPING**

Consulting structural geologist Peter Read made a series of traverses across much of the claim group as part of a wider program of surface geologic mapping throughout the Keno Hill district. A geological map showing the claim outlines and soil sample locations is presented as Figure 4.

## **9.0 CONCLUSIONS AND RECOMMENDATIONS**

Encouraging results have been obtained elsewhere at Keno Hill using soil gas hydrocarbon sampling, but as emphasized by the sampling over the Mom & Son claim group, sample grids need to be closely and fairly evenly spaced in order to provide the right contrast for results can be interpreted with confidence.



## **APPENDIX 1**

### **LIST OF CLAIMS**

## LIST OF CLAIMS

Claim Name	Grant No.	Owner	Date Recorded	Expiration Date*
Mom 1	YC32221	Alexco Exploration Canada Corp.	2004-8-23	2014-12-31
Mom 2	YC32222	Alexco Exploration Canada Corp.	2004-8-23	2014-12-31
Mom 3	YC32223	Alexco Exploration Canada Corp.	2004-8-23	2014-12-31
Mom 4	YC32224	Alexco Exploration Canada Corp.	2004-8-23	2014-12-31
Mom 5	YC32225	Alexco Exploration Canada Corp.	2004-8-23	2014-12-31
Mom 6	YC32226	Alexco Exploration Canada Corp.	2004-8-23	2014-12-31
Mom 7	YC32227	Alexco Exploration Canada Corp.	2004-8-23	2014-12-31
Mom 8	YC32228	Alexco Exploration Canada Corp.	2004-8-23	2014-12-31
Son 1	YC32218	Alexco Exploration Canada Corp.	2004-8-23	2014-12-31
Son 2	YC32219	Alexco Exploration Canada Corp.	2004-8-23	2014-12-31
Son 3	YC32220	Alexco Exploration Canada Corp.	2005-9-12	2014-12-31
Son 4	YC39676	Alexco Exploration Canada Corp.	2004-9-1	2014-12-31
Son 5	YC39586	Alexco Exploration Canada Corp.	2004-8-23	2014-12-31
Son 6	YC39587	Alexco Exploration Canada Corp.	2005-9-12	2014-12-31
K-100	YC56127	Alexco Keno Hill Mining Corp.	2007-6-15	2016-12-31
K-101	YC56128	Alexco Keno Hill Mining Corp.	2007-6-15	2016-12-31
Barb One	YB43712	Elsa Reclamation and Dev. Co., Ltd.	1994-10-12	2016-12-31

\*Subject to government acceptance of this assessment report

## **APPENDIX 2**

### **LIST OF PERSONNEL**

## LIST OF PERSONNEL

### **Personnel:**

Richard Lippoth  
3890 N. Nicklaus Drive  
Coeur d'Alene, ID 83815

Cassandra Murphy  
326-200 Dallas Rd.  
Victoria, B.C. V8N 1A4

Joann Anderson  
496 Burnt Church Rd.  
Burnt Church, NB E9G 2G3

Peter Read  
832-470 Granville St.  
Vancouver, BC V6C 1V5

Stephanie Savidant  
2-355 Duthie Ave.  
Burnaby, BC V5A 2P3

Kristin Chislett  
8601-100 A St.  
Grande Prairie, AB T8V 3C4

**APPENDIX 3**

**STATEMENT OF EXPENDITURES**

**COST STATEMENT - Alexco Exploration Canada Corp.  
August 2010 Assessment Filing**

<b>Grant No.</b>	<b>Claim</b>	<b>Soil Analyses</b>	<b>Geologist Wage + Room &amp; Board</b>	<b>Field Prep.</b>	<b>Freight/Report</b>	<b>EST. TOTAL</b>
YC32221	Mom 1		\$103.64			\$103.64
YC32222	Mom 2	173.33	\$337.00		\$32.33	\$542.66
YC32223	Mom 3	173.33	\$337.00		\$32.33	\$542.66
YC32224	Mom 4	173.33	\$337.00		\$32.33	\$542.66
YC32225	Mom 5	598	\$278.65		\$111.74	\$988.39
YC32226	Mom 6		\$103.64			\$103.64
YC32227	Mom 7	598	\$278.64		\$111.74	\$988.39
YC32228	Mom 8		\$103.64			\$103.64
YC32218	Son 1	702	\$453.65		\$131.18	\$1286.83
YC32219	Son 2		\$103.64			\$103.64
YC32220	Son 3	702	\$453.65		\$131.18	\$1286.83
	All			\$100.00	\$1000.00	\$1100.00
<b>Totals</b>		<b>\$3120.00</b>	<b>\$2890.15</b>	<b>\$100.00</b>	<b>\$1582.85</b>	<b>\$7693.00</b>

## **APPENDIX 4**

### **STATEMENT OF QUALIFICATIONS**

**STATEMENT OF QUALIFICATIONS  
RICHARD LIPPOTH**

I, Richard E. Lippoth of 3890 N. Nicklaus Drive, Coeur d'Alene, Idaho, USA,  
DO HEREBY CERTIFY:

- 1 THAT, I am a senior geologist with Alexco Resource Corp., 1150-200 Granville Street, Vancouver, BC, V6E 1S4
- 2 THAT, I have practiced my profession with various mining companies in the Yukon, Idaho, Utah, Colorado, Montana, Nevada and Australia for 25 years.
- 3 THAT, I am graduate of the University of Utah holding an M.S. in Geology and in addition a B.S. in Mining Engineering from the Colorado School of Mines.
- 4 THAT, I am a member of the Society of Economic Geologists.
- 5 THAT, I am a member of the American Institute of Professional Geologists, and am Certified Professional Geologist #11185.
- 6 THAT, this report is based on work which I personally participated in during the year 2010.
- 7 THAT, I have no interest in the property described herein, nor do I expect to receive any such interest.

DATED at Coeur d'Alene, Idaho, this 12<sup>th</sup> day of October, 2010.



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Richard E. Lippoth

## **APPENDIX 5**

### **SOIL SAMPLE DESCRIPTIONS**

UTM Easting	UTM Northing	Slope Dip	Sample Number	Slope face	Vegetation	Sample Depth (cm)	Soil Horizon	Colour	Soil Type Texture	Lith Code
487032	7088680	gentle	7032-8680	SW	trees/moss	3	A	light brown	silty sand	Qtzt
487057	7088640	gentle	7057-8640	SW	trees/moss	10	A	brown	peat-silt	N/A
487086	7088597	gentle	7086-8597	SW	trees/moss	20	A	medium brown	loam	Qtzt
487118	708552	gentle	7118-552	SW	trees/shrubs	8	A	grey brown	sand, clay	Qtzt
487152	708525	gentle	7152-525	SW	trees	15	A	brown	silty sand	Qtzt
487184	7088486	gentle	7184-8486	N	trees/moss	40	A	medium brown	silt	Qtzt
487616	7088447	gentle	7616-8447	SW	moss/trees	12	A	brown	loam	N/A
487256	7088405	gentle	7256-8405	SW	moss/trees	10	A	brown	silty clay	N/A
487294	7088370	gentle	7294-8370	SW	moss/trees	10	A	light grey brown	silty clay	N/A
487325	7088332	gentle	7325-8332	SW	moss/shrubs	10	A	brown	silty clay	Qtzt
487353	7088301	gentle	7353-8301	S	bush/moss	15	A	brown	sandy silt	Qtzt
487391	7088260	gentle	7391-8260	SW	bush/moss	10	A	brown	sandy silt	Qtzt
487429	7088224	gentle	7429-8224	SW	bush/moss	8	A	grey-brown	silty sand	N/A
487457	7088189	gentle	7457-8189	SW	bush/moss	10	A	medium brown	silty sand	Qtzt
487493	7088145	gentle	7493-8145	SW	bush/moss	15	A	medium brown	sandy silt	N/A

UTM Easting	UTM Northing	Slope Dip	Sample Number	Slope face	Vegetation	Sample Depth (cm)	Soil Horizon	Colour	Soil Type Texture	Lith Code
487533	7088109	gentle	7533-8109	SW	bush/moss	8	A	brown	sandy clay	Qtzt
487567	7088071	gentle	7567-8071	SW	bush/moss	10	A	dark medium brown	sandy silt	Qtzt
487597	7088039	gentle	7597-8039	SW	thick bush	12	A	medium brown	silty clay	N/A
486992	7088721	gentle	6992-8721	W	trees, moss	20	A	dark brown	organic rich silty clay	Qtzt
486964	7088759	gentle	6964-8759	W	trees, moss	10	A	dark brown	organic rich silty clay	Qtzt
486932	7088799	gentle	6932-8799	W	trees, moss	8	A	medium dark brown	clay rich silt	Qtzt
486898	7088838	gentle	6898-8838	W	trees, moss	17	A	dark brown	silty clay	Qtzt
486864	7088881	gentle	6864-8881	W	trees, moss, brush	15	A	medium brown	sandy silt	qtz, ssch
486832	7088926	gentle	6832-8926	W	moss, brush	18	A	grey brown	organic rich clay	Qtzt
486804	7088957	gentle	6804-8957	W	moss, brush	10	A	dark brown	organic rich silt	Qtzt
486772	7088990	gentle	6772-8990	SW	moss, brush	5	A	light brown	sandy silt	Qtzt, phyllite
486735	7089038	gentle	6735-9038	NW	trees, moss, brush	10	A	grey brown	silt	Qtzt
486705	7089078	gentle	6705-9078	NW	trees, moss	8	A	medium brown	silt clay	N/A
486672	7089115	gentle	6672-9115	NW	moss, shrubs	10	A	grey brown	silt	Qtzt
486640	7089148	gentle	6640-9148	NW	moss, brush, trees	4	A	medium grey brown	silty sand	ssch, qtzt

UTM Easting	UTM Northing	Slope Dip	Sample Number	Slope face	Vegetation	Sample Depth (cm)	Soil Horizon	Colour	Soil Type Texture	Lith Code
486611	7089192	gentle	6611-9192	NW	moss, brush, berries	18	A	dark grey brown	wet clay	N/A
486567	7089237	gentle	6567-9237	W	moss, brush	15	A	dark grey brown	wet clay	N/A
486544	7089271	gentle	6544-9271	W	moss, brush	8	A	dark grey brown	clay	N/A
487733	7087733	gentle	7733-7733	SW	low shrubs, moss	10	A	medium brown	silty clay	ICQS
487702	7089064	gentle	7702-9064	SW	low shrubs, moss	15	A	medium brown	silty clay	N/A
487676	7089102	gentle	7676-9102	SW	low shrubs, moss	4	A	light brown	silty clay	Qtzt
487643	7089151	gentle	7643-9151	SW	low shrubs, moss	17	A	medium brown	silty clay	Qtzt, phyllite
487612	7089194	gentle	7612-9194	SW	low shrubs, moss	10	A	light brown	clay, silt	ssch, phyllite
487589	7089232	gentle	7589-9232	W	low shrubs, moss	15	A	medium brown	silty sand	N/A
487551	7089278	gentle	7551-9278	W	low shrubs, moss	5	A	medium brown	clay	ICQS
487514	7089316	gentle	7514-9316	SW	low shrubs, moss	12	A	dark rich brown	clay, silt	phyllite
487485	7089362	gentle	7485-9362	W	thick moss	20	A	dark brown	clay, silt	phyllite
487531	7089122	gentle	7531-9122	W	low shrubs, moss	20	A	dark brown	sandy silt	Qtzt
487563	7089076	gentle	7563-9076	W	low shrubs, moss	30	A	light brown	clay silt	N/A
487587	7089038	gentle	7587-9038	SW	low shrubs, moss	10	A	medium brown	silty sand	Qtzt

UTM Easting	UTM Northing	Slope Dip	Sample Number	Slope face	Vegetation	Sample Depth (cm)	Soil Horizon	Colour	Soil Type Texture	Lith Code
487617	7088993	gentle	7617-8993	W	low shrubs, moss	6	A	dark brown	sandy silt	Qtzt
487654	7088952	gentle	7654-8952	SW	low shrubs, moss	5	A	dark brown	sandy silt	Qtzt
487968	7088685	gentle	7968-8685	SW	Moss/alders	10	A	Dark brown	organics with roots	N/A
487938	7088725	gentle	7938-8725	SW	Moss/alders	5	A	tan brown	some sandy silt, organics with roots	N/A
487910	7088772	gentle	7910-8772	SW	Moss/alders	10	A	light brown	roots, silt	greenstone, Qtzt
487879	7088809	gentle	7879-8809	SW	Moss/alders	10	A	light brown/tan	silt	Qtzt
487851	7088847	gentle	7851-8847	SW	Moss/alders	10	A	medium brown	silty with roots	N/A
487819	7088899	gentle	7819-8899	SW	Moss/alders	15	A	light brown	organics, roots, silt	phyllite
487797	7088938	gentle	7797-8938	SW	Moss/alders	7	A	medium brown	silty	Qtzt, phyllite
487765	7088984	gentle	7765-8984	SW	Moss/alders	7	A	light brown	organics, silty	N/A
487376	7089331	steep	7376-9331	NW	Moss/alders	15	A	Dark brown	organics, silty	Qtzt
487408	7089289	moderate	7408-9289	NW	Moss/alders	2	A	Dark brown	organics, silty	phyllite, Qtzt
487441	7089246	gentle	7441-9246	NW	Moss/alders	5	A	Dark brown	organics	phyllite
487476	7089202	shallow	7476-9202	NW	Moss/alders	10	A	medium dark brown	silt, organics	Qtzt
487505	7089165	flatish	7505-9165	NW	Moss/alders	15	A	medium orange brown	silty/sand organics	Qtzt

## **APPENDIX 6**

### **SOIL SAMPLE ANALYSES**



# **SGH – SOIL GAS HYDROCARBON Predictive Geochemistry**

*for*

## ***ALEXCO RESOURCE CORP. "MOM & SON SURVEY"***

*September 22, 2010*

*\* Dale Sutherland, Eric Hoffman*

*Activation Laboratories Ltd*

(\* - author)

### **EVALUATION OF SGH "SOIL SAMPLE" DATA EXPLORATION FOR: "AG-PB-ZN" BASED TARGETS**

***Workorder: A10-4706***

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## **SOIL GAS HYDROCARBON (SGH) GEOCHEMISTRY - OVERVIEW**

SGH is a deep penetrating geochemistry that involves the analysis of surficial samples from over potential mineral or petroleum targets. The analysis involves the testing for 162 hydrocarbon compounds in the C5-C17 carbon series range applicable to a wide variety of sample types. SGH has been successful for delineating targets found at over 500 metres in depth. Samples of various media have been successfully analyzed such as soil (any horizon), drill core, rock, peat, lake-bottom sediments and even snow. The SGH analysis incorporates a very weak leach, essentially aqueous, that only extracts the surficial bound hydrocarbon compounds and those compounds in interstitial spaces around the sample particles. These are the hydrocarbons that have been mobilized from the target depth. SGH is unique and should not be confused with other hydrocarbon tests or traditional analyses that measure C1 (Methane) to C5 (Pentane) or other gases. SGH is also different from soil hydrocarbon tests that thermally extract or desorb all of the hydrocarbons from the whole soil sample. This test is less specific as it does not separate the hydrocarbons and thus does not identify or measure the responses as precisely. These tests also do not use a forensic approach to identification. The hydrocarbons in the SGH extract are separated by high resolution capillary column gas chromatography to isolate, confirm, and measure the presence of only the individual hydrocarbons that have been found to be of interest from initial research and development and from performance testing in three Canadian Mining Industry Research Organization (CAMIRO) projects (97E04, 01E02 and 08E01).

Over the past 14 years of research, Activation Laboratories Ltd. has developed an in-depth understanding of the unique SGH signatures associated with different commodity targets. Using a forensic approach we have developed target signatures or templates for identification, and the understanding of the expected geochromatography that is exhibited by each class of SGH compounds. In 2004 we began to include an SGH interpretation report delivered with the data to enable our clients to realize the complete value and understanding of the SGH results in the shortest time frame and provide the benefit from past research sponsored by Actlabs, CAMIRO, OMET and other projects.

SGH has attracted the attention of a large number of Exploration companies. In the above mentioned research projects the sponsors have included (in no order): Western Mining Corporation, BHP-Billiton, Inco, Noranda, Outokumpu, Xstrata, Cameco, Cominco, Rio Algom, Alberta Geological Survey, Ontario Geological Survey, Manitoba Geological Survey and OMET. Further, beyond this research, Activation Laboratories Ltd. has interpreted the SGH data for over 400 targets from clients since January of 2004. In both CAMIRO research projects over known mineralization and in exploration projects over unknown targets, SGH has performed exceptionally well. As an example, in the first CAMIRO research project that commenced in 1997 (Project 97E04), there were 10 study areas that were submitted blindly to Actlabs. These study sites were selected since other inorganic geochemistries were unsuccessful at illustrating anomalies related to the target.

## **SOIL GAS HYDROCARBONS (SGH) GEOCHEMISTRY – OVERVIEW**

Although Actlabs was only provided with the samples and their coordinates, SGH was able to locate the blind mineralization with exceptional accuracy in 9 of the 10 surveys. SGH has been very successful in exploration and discovery of unknown targets e.g. Golden Band Resources drilled an SGH anomaly and discovered a significant vein containing “visible” gold ([www.goldenbandresources.com](http://www.goldenbandresources.com)), and others.

**Sample Type and Survey Design:** It is highly recommended that a ***minimum*** of 50 sample “locations” per survey area is preferred to obtain enough samples into background areas on both sides of small suspected targets (wet gas plays, Kimberlite pipes, Uranium Breccia pipes, veins, etc.). SGH is not interpreted in the same way as inorganic based geochemistries. SGH must have enough samples over both the target and background areas in order to fully study the dispersion patterns or geochromatography of the SGH classes of compounds. Based on our minimum recommendation of at least 50 sample locations we further suggest that all samples be evenly spaced with about one-third of the samples over the target and one-third on each side of the target in order for SGH to be used for exploration. Targets other than relatively small gas plays, pipes, dykes or veins usually require additional samples to represent both the target and background areas.

SGH has been shown to be very robust to the use of different sample types even “within” the same survey or transect. Research has illustrated that it is far more important to the ultimate interpretation of the results to take a complete sample transect or grid than to skip samples due to different sample media. The most ideal natural sample is still believed to be soil from the “Upper B-Horizon”, however excellent results can also be obtained from other soil horizons, till, humus, peat, lake-bottom sediments, and even snow. The sampling design suggested is to use evenly spaced samples from 15 metres to 200 metres and line spacing from 50 metres to 500 metres depending on the size and type of target. A 4:1 ratio has worked very well. Larger orientation surveys have also been successful. Ideally even large grids should have one-third of the samples over the target and two-thirds of the samples into anticipated background areas. This will allow the proper assessment of the SGH geochromatographic vectoring and background site signature levels with minimal bias as organic dispersion halos are expected to be much wider than inorganic element halos for some target types. Individual samples taken at significant distances from the main survey area to represent background are not of value in the SGH interpretation as SGH results are not background subtracted. Samples can be drip dried in the field and do not need special preservation for shipping and has been specifically designed to avoid common contaminants from sample handling and shipping. SGH has also been shown to be robust to cultural activities even to the point that successful results and interpretation has been obtained from roadside right-of-ways.

## **SOIL GAS HYDROCARBONS (SGH) GEOCHEMISTRY – OVERVIEW**

**Sample Preparation and Analysis:** Upon receipt at Activation Laboratories the samples are air-dried in isolated and dedicated environmentally controlled rooms set to 40°C. The dried samples are then sieved. In the sieving process, it is important that compressed air is not used to clean the sieves between samples as trace amounts of compressor oils "may" poison the samples and significantly affect some target signatures. At Activation Laboratories a vacuum is used to clean the sieve between each sample. The -60 mesh sieve fraction (<250 microns, although different mesh sizes can be used at the preference of the exploration geologist) is collected and packaged in a Kraft paper envelope and transported from our sample preparation building to our analytical building on the same street in Ancaster Ontario. Each sample is then extracted, separated by gas chromatography and analyzed by mass spectrometry using customized parameters enabling the highly specific detection of the 162 targeted hydrocarbons at a reporting limit of one part-per-trillion (ppt). This trace level limit of reporting is critical to the detection of these hydrocarbons that, through research, have been found to be related at least in part to the breakdown and release of hydrocarbons from the death phase of microbes directly interacting with a deposit at depth. The hydrocarbon signatures are directly linked to the deposit type which is used as a food source. The hydrocarbons that are mobilized and metabolized by the microbes are released in the death phase of each successive generation. Very few of the hydrocarbons measured are actually due to microbe cell structure, or hydrocarbons present or formed in the genesis of the deposit or from anthropogenic contamination. The results of the SGH analysis is reported in raw data form in an Excel spreadsheet as "semi-quantitative" concentrations without any additional statistical modification.

**Mobilized Inorganic Geochemical Anomalies:** It is important to note that SGH is essentially "blind" to any inorganic content in samples as only organic compounds as hydrocarbons are measured. Thus inorganic geochemical surface anomalies that have migrated away from the mineral source, and thus may be interpreted and found to be a false target location, is not detected and does not affect SGH results. This fact is of great advantage when comparing the SGH results to inorganic geochemical results. If there is agreement in the location of the anomalies between the organic and inorganic technique, such as Actlabs' Enzyme Leach, a significant increase in confidence in the target location can be realized. If there is no agreement or a shift in the location of the anomalies between the techniques, the inorganic anomaly may have been mobilized in the surficial environment.

**The Nugget Effect:** As SGH is "blind" to the inorganic content in the survey samples, any concern of a "nugget effect" will not be encountered with SGH data. A "nugget effect" may be of a concern for inorganic geochemistries from surveys over copper, gold, lead, nickel, etc. type targets.

## **SOIL GAS HYDROCARBONS (SGH) GEOCHEMISTRY – OVERVIEW**

**SGH Interpretation Report:** All SGH submissions must be accompanied by relative or UTM coordinates so that we may ensure that the sample survey design is appropriate for use with SGH, and to provide an SGH interpretation with the results. In our interpretation procedure, we separate the results into 19 SGH subclasses. These classes include specific alkanes, alkenes, thiophenes, aromatic, and polyaromatic compounds. Note that none of the SGH hydrocarbons are “gaseous” at room temperature and pressure. The classes are then evaluated in terms of their geochromatography and for coincident compound class anomalies that are unique to different types of mineralization. Actlabs uses a six point scale in assigning a subjective rating of similarity of the SGH signatures found in the submitted survey to signatures previously reviewed and researched from known case studies over the same commodity type. Also factored into this rating is the appropriateness of the survey and amount of data/sample locations that is available for interpretation. This rating scale is described in detail in the following section.

## **SGH RATING SYSTEM - DESCRIPTION**

To date SGH has been found to be successful in the depiction of buried mineralization for Gold, Nickel, VMS, PGE, SEDEX, Uranium, IOCG, Polymetallic, and Copper, as well as for Kimberlites. SGH data has developed into a dual exploration tool. From the interpretation, a vertical projection of the predicted location of the target can be made as well as a statement on the rating of the comparability of the identification of the anticipated target type to that from known case studies, e.g. if the client anticipates the target to be a Gold deposit, what is the rating or comparability that the target is similar to the SGH results over a Gold deposit in Nunavut, shear hosted and sediment hosted deposits in Nevada, or Paleochannel Gold mineralization in Western Australia.

- A rating of “6” is the highest or best rating, and means that the SGH classes most important to describing a Gold related hydrocarbon signature are all present and consistently vector to the same location with well defined anomalies. To obtain this rating there also needs to be other SGH classes that when mapped lend support to the predicted location.
- A rating of “5” means that the SGH classes most important to describing a Gold signature are all present and consistently describe the same location with well defined anomalies. The SGH signatures may not be strong enough to also develop additional supporting classes.
- A rating of “4” means that the SGH classes most important to describing a Gold signature are mostly present describing the location with well defined anomalies. Supporting classes may also be present.

## **SGH RATING SYSTEM - DESCRIPTION** (continued)

- A rating of "3" means that the SGH classes most important to describing a Gold signature are mostly present and describe the same location with fairly well defined anomalies. Some supporting classes may or may not be present.
- A rating of "2" means that some of the SGH classes most important to describing a Gold signature are present but a predicted location is difficult to determine. Some supporting classes may be present
- A rating of "1" is the lowest rating, and means that one of the SGH classes most important to describing a Gold signature is present but a predicted location is difficult to determine. Supporting classes are also not helpful.
- The SGH rating is directly and significantly affected by the survey design. Small data sets, especially if significantly <50 sample locations, or transects/surveys that are geographically too short will automatically receive a lower rating no matter how impressive an SGH anomaly might be. When there is not enough sample locations to adequately review the SGH class geochromatography, or when the sample spacing is inadequate, or if the spacing is highly variable such that it biases the interpretation of the results, then the confidence in the interpretation of any geochemistry is adversely affected. The SGH rating is not just a rating of the agreement between the SGH pathfinder classes for a particular target type; it is a rating of the overall confidence in the SGH results from this particular survey. The interpretation is only based on the SGH results without any information from other geochemical, geological or geophysical information unless otherwise specified.

## **SGH RATING SYSTEM – HISTORY & UNDERSTANDING**

The subjective SGH rating system has been used since 2004 when Activation Laboratories started providing an SGH Interpretation Report with every submission for SGH analysis to aid our clients in understanding this organic geochemistry and ensuring that they obtain the best results for their surveys. As explained in the previous section, the SGH rating is not just a rating of how definitive an SGH anomaly is, and is not based just on the map(s) provided in this report. It is a rating of "confidence in the interpreted anomaly" from the combination of (i) are the expected SGH Pathfinder Classes of compounds present from the template for this target type (one Pathfinder Class map is shown in the report, at least three must be present to adequately describe the correct signature for a particular target), (ii) how well do these SGH Pathfinder Classes agree in describing an particular area, (iii) how well does this agreement compare to SGH case studies over known targets of that type, (iv) how well is the interpreted anomaly defined by the survey (i.e. a single

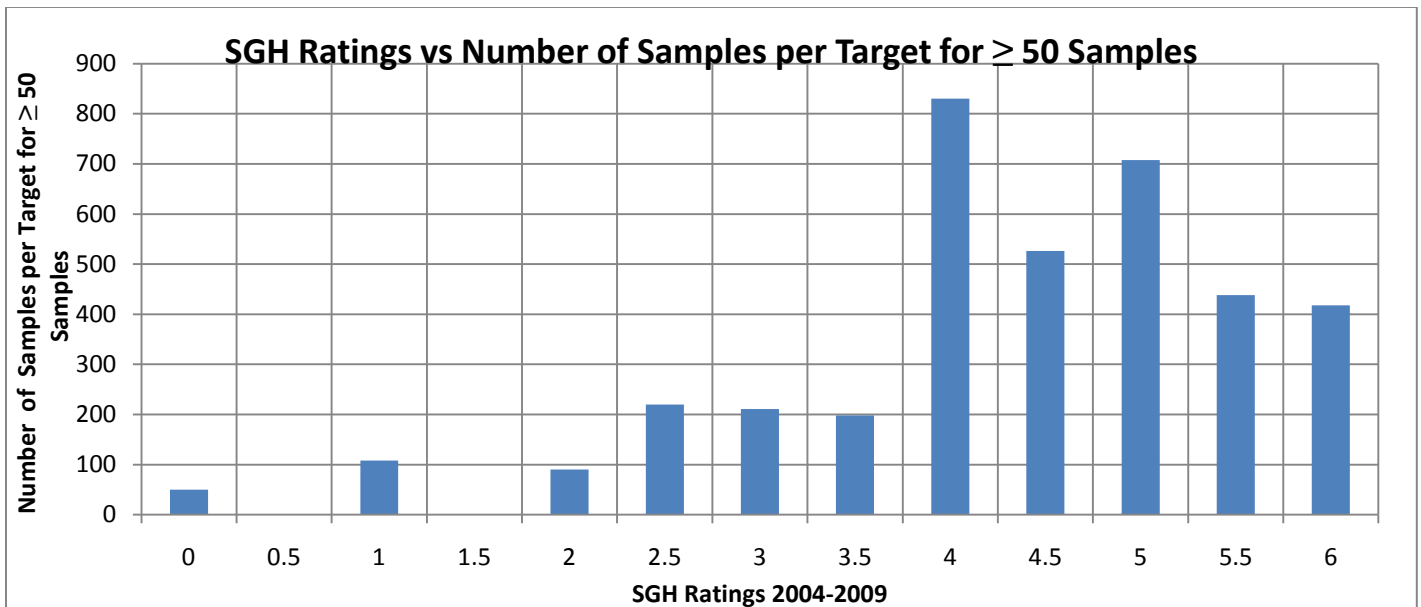
## **SGH RATING SYSTEM – HISTORY & UNDERSTANDING (cont.)**

transect does not provide the same confidence as a complete grid of samples), and (v) is there at least a minimum of 50 sample locations in the survey so that there may be an adequate amount of data to observe the geochromatography of the different SGH Pathfinder Class of compounds.

The question often arises by clients as to the frequency of a rating, e.g. "how often is a rating of 5.0 given in an interpretation". To better understand this we present this review of the history of the SGH rating program since 2004 and some of the underlying situations that can affect the historical rating charts.

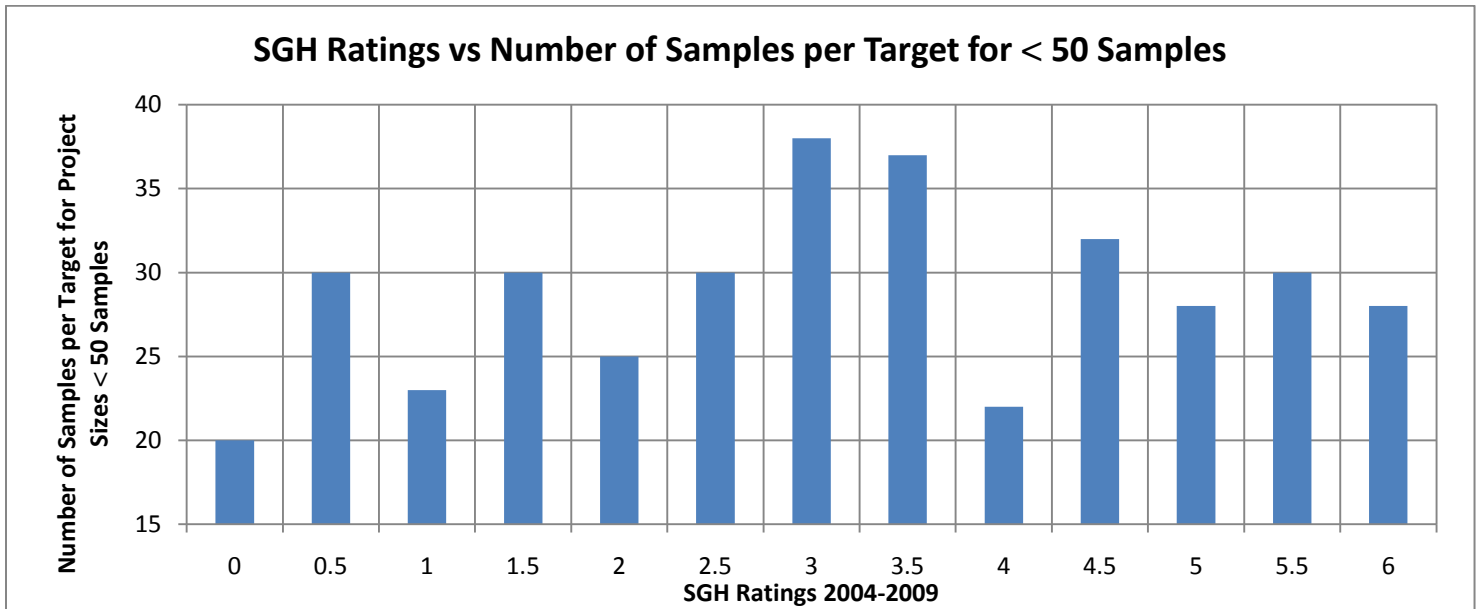
Originally it was recommended that a minimum of 35 sample location be used for small target exploration, however it was quite quickly realized that this is often insufficient and at least 50 sample locations were required. In 2007, the rating scale was refined to include increments of 0.5 units rather than just integer values from 0 to 6.

A rating frequency may be biased high as most clients conduct an orientation study over a known target, thus several of these projects result in high ratings. Note that, at this time, the rating is not said to be linked to grade of a deposit or depth to the target. Even in exploration surveys clients tend to submit samples over more promising targets due to knowledge of the geology and prior geochemical or geophysical results. As shown in the following chart, projects with SGH data from 200 or more sample locations have a higher level of confidence in the interpretation as the geochromatography of the SGH Pathfinder Classes of compounds can be more completely observed and reviewed.

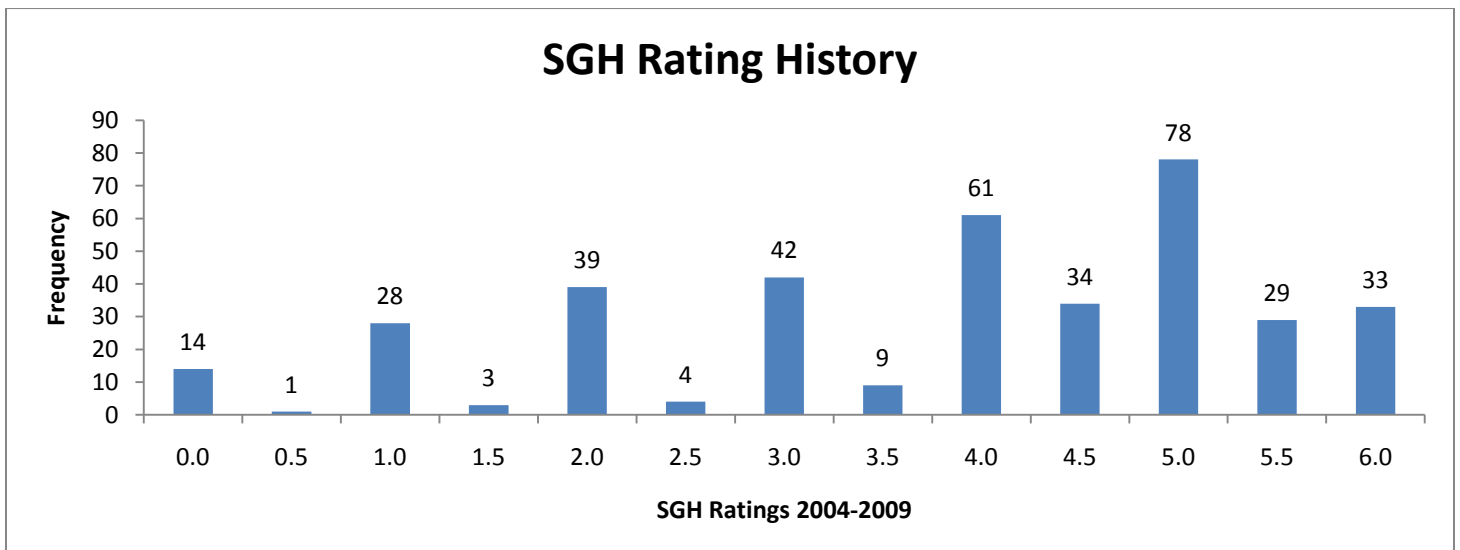


## **SGH RATING SYSTEM – HISTORY & UNDERSTANDING (cont.)**

The rating frequency may be biased low as research projects often include a bare minimum of samples to reduce costs. Research projects may also be over targets known to be difficult to depict with geochemistry. Multiple targets in close vicinity in a survey may result in a low bias as the Pathfinder Class geochromatography is more difficult to deconvolute. Ratings may also be biased low if less than the recommended 50 sample locations is submitted as indicated by the following chart. This chart also illustrates that there is no interpretation bias to a particular rating value.



The overall rating frequency for over 400 targets from January 2004 to December 2009 is shown in the chart below illustrating that surveys over more promising targets are most often submitted for best use of research or exploration dollars. It also indicates that the 0.5 increments were less frequent as they started in 2007.



## **SGH DATA QUALITY**

- **Reporting Limit:** The SGH Excel spreadsheet of results contains the raw unaltered concentrations of the individual SGH compounds in units of "part-per-trillion" (ppt). The reporting of these ultra low levels is vital to the measurement of the small amounts of hydrocarbons now known to be leached/metabolized and subsequently released by dead bacteria that have been interacting with the ore at depth. To ensure that the data has a high level of confidence, a "reporting limit" is used. The reporting limit of 1 ppt actually represents a level of confidence of approximately 5 standard deviations where SGH data is assured to be "real" and non-zero. Thus in SGH the use of a reporting limit automatically removes site variability and there is no need to further background subtract any data as the reporting limit has already filtered out any site background effects. Thus we recommend that all data that is equal to or greater than 2 ppt should be used in any data review. It is important to review all SGH data as low values that may be the centre of halo anomalies and higher values as apical anomalies or as halo ridges are all important.
- **Laboratory Replicate Analysis:** A laboratory replicate is a sample taken randomly from the submitted survey being analyzed and are not unrelated samples taken from some large stockpile of bulk material. In the Organics laboratory an equal portion of this sieved sample, or pulp, is taken and analyzed in the same manner using the Gas Chromatography/Mass Spectrometer. The comparison of laboratory replicate and field duplicate results for chemical tests in the parts-per-million or even parts-per-billion range has typically been done using an absolute "relative percent difference (RPD)" statistic which is an easy proxy for error estimation rather than a more complete analysis of precision as specified by Thompson and Howarth. An RPD statistic is not appropriate for SGH results as the reporting limit for SGH is 1 part-per-trillion. Further, SGH is a semi-quantitative technique and was not designed to have the same level of precision as other less sensitive geochemistry's as it is only used as an exploration tool and not for any assay work. SGH is also designed to cover a wide range of organic compounds with an unprecedented 162 compounds being measured for each sample. In order to analyze such a wide molecular weight range of compounds, sacrifices were made to the variability especially in the low molecular weight range of the SGH analysis. The result is that the first fifteen SGH compounds in the Excel spreadsheet is expected to exhibit more imprecision than the other 147 compounds. An SGH laboratory replicate is a large set of data for comparison even for just a few pairs of analyses. Precision calculations using a Thompson and Howarth approach should only be used for estimating error in individual measurements, and not for describing the average error in a larger data set. In geochemical exploration geochemists seek concentration patterns to interpret and thus rigorous precision in individual samples is not required because the concentrations of many samples are interpreted collectively. For these reasons recent and independent research at Acadia

## **SGH DATA QUALITY** (continued)

Universities in Canada promote that a percent Coefficient of Variation (%CV) should be used as a universal measurement of relative error in all geochemical applications. As SGH results are a relatively large data set for nearly all submissions, %CV is a better statistic for use with SGH. By using %CV, the concentration of duplicate pairs is irrelevant because the units of concentration cancel out in the formation of the coefficient of variation ratio. For SGH, the %CV is calculated on all values  $\geq 2$  ppt. These values are averaged and represent a value for each pair of replicate analysis of the sample. All of the %CV values for the replicates are then averaged to report one %CV value to represent the overall estimate of the relative error in the laboratory sub-sampling from the prepared samples, and any instrumental variability, in the SGH data set for the survey. Actlabs' has successfully addressed the analytical challenge to minimize analytical variability for such a large list of compounds. Thus as SGH is also interpreted as a signature and is solely used for exploration and not assay measurement, the data from SGH is "**fit for purpose**" as a geochemical exploration tool.

- **Historical SGH Precision:** In the general history of geochemistry, studies indicate that a large component of total measurement error is introduced during the collection of the initial sample and in sub-sampling, and that only a subordinate amount of error in the result is introduced during preparation and analysis. A historical record encompassing many projects for SGH, including a wide variety of sample types, geology and geography, shows that the consistency and precision for the analysis of SGH is excellent with an overall precision of 6.8% Coefficient of Variation (%CV). When last calculated, this number has a range having a maximum of 12.4% CV, a minimum of 3.0% CV, with a standard deviation of 1.6%, in a population made up of over 400 targets (over 45,000 samples) interpreted since June of 2004. Again the precision of 6.8% CV included all of the sample types as soil from different horizons, peat, till, humus, lake-bottom sediments, ocean-bottom sediments, and even snow. When field duplicates have been revealed to us, we have found that the precision of the field duplicates are in the range of about 9 to 12 %CV. As SGH is interpreted using a combination of compounds as a chemical "class" or signature, the affect of a few concentrations that may be imprecise in a direct comparison of duplicates is not significant. Further, projects that have been re-sampled at different times or seasons are expected to have different SGH concentrations. The SGH anomalies may not be in exactly the same position or of the same intensity due to variable conditions that may have affected the dispersion of different pathfinder classes. However, the SGH "signature" as to the presence of the specific mix of SGH pathfinder classes will definitely still exist, and will retain the ability to identify the deposit type and vector to the same target location.

## **SGH DATA QUALITY** (continued)

- **LABORATORY MATERIALS BLANK – QUALITY ASSURANCE (LMB-QA):**

The Laboratory Materials Blank Quality Assurance measurements (LMB-QA) shown in the SGH spreadsheet of results are matrix free blanks analyzed for SGH. These blanks are not typical laboratory blanks as they do not accurately reflect an amount expected to be from laboratory handling or laboratory conditions that may be present and affect the sample analysis result. The LMB-QA measurements are a pre-warning system to only detect any contamination originating from laboratory glassware, vials or caps. As there is no substrate to emulate the sample matrix, the full solvating power of the SGH leaching solution, effectively a water leach, is fully directed at the small surface area of the glassware, vials or caps. In a sample analysis the solvating power of the SGH leaching solution is distributed between the large sample surface area (from soil, humus, sediments, peat, till, etc.) and the relatively small contribution from the laboratory materials surfaces. The sample matrix also buffers the solvating or leaching effect in the sample versus the more vigorous leaching of the laboratory materials which do not experience this buffering effect. Thus the level of the LMB-QA reported is biased high relative to the sample concentration and the actual contribution of the laboratory reagents, equipment, handling, etc. to the values in samples is significantly lower. This situation in organic laboratory analysis only occurs at such extremely low part-per-trillion (ppt) measurement levels. This is one of the reasons that SGH uses a reporting limit and not a detection limit. The 1 ppt reporting limit used in the SGH spreadsheet of raw concentration data is 3 to 5 times greater than a detection limit. The reporting limit automatically filters out analytical noise, the actual LMB-QA, and most of the sample survey site background. This has been proven as SGH values of 1 to 3 parts-per-trillion (ppt) have very often illustrated the outline of anomalies directly related to mineral targets. Thus all SGH values greater than or equal to 1 or 2 ppt should be used as reliable values for interpretations.

The LMB-QA values thus should not be used to background subtract any SGH data. The LMB-QA values are only an early warning as a quality assurance procedure to indicate the relative cleanliness of laboratory glassware, vials, caps, and the laboratory water supply at the ppt concentration level. Do not subtract the LMB-QA values from SGH sample data.

## **SGH DATA INTERPRETATION**

- **GEOCHEMICAL ANOMALY THRESHOLD VALUE:**

In the interpretation of "inorganic" geochemical data one of the determinations to be made is to calculate a "Threshold" value above which data is considered anomalous. This is done on an element by element basis. In the interpretation of this "organic" geochemical data this determination is done differently. The determination of a threshold value is not calculated for each hydrocarbon compound. The determination of a threshold value is also a concentration below which geochemical data is considered as "noise" for the purposes of geochemical interpretation. As discussed on page 10, SGH uses a "Reporting Limit" instead of some type of Detection Limit. The amount of noise that is already eliminated in the data, as below the Reporting Limit of 1 part-per-trillion (shown in the data spreadsheet as "-1" as "not-detected at a Reporting Limit of 1 ppt") is equivalent to approximately 5 standard deviations of variability. To thus calculate an additional Threshold Value is a loss of real and valuable data. Further, in the interpretation of SGH data, individual compounds are not considered (unless explicitly mentioned in the report). The interpretation of SGH data is exclusively conducted by "compound chemical class" which is the sum of four to fourteen individual hydrocarbons in the same organic chemical class as these compounds naturally have the same chemical properties that ultimately define their spatial dispersion characteristics in their rise from a mineral target through the overburden. This combined class is more reliable than the measurement of any one compound. SGH also eliminates the need for a Threshold value determination above the Reporting Limit due to the "high specificity" of the specific hydrocarbons and the classes they form. Each of the hydrocarbons has been hand selected due to their lower probability of being found in general surface soils. Further, only those classes where the majority of the compounds are detected above the Reporting Limit are considered in the interpretation. This defines the SGH geochemistry as having less geochemical noise due to the use of a reporting limit and as having higher confidence in the use of groups (classes) of data instead of individual compounds. However the most important aspect of interpretation is the use of a forensic signature. At least three specific "Pathfinder" classes, based on the combinations or template of classes we have developed, must be present to define the hydrocarbon signature to confidently predict the presence of a specific type of mineral target. Do not calculate another Threshold value. FACT: It has been proven many times that important chemical anomalies can exist even at 5 ppt.

- **SGH PATHFINDER CLASS MAGNITUDE:**

The magnitude of any individual concentration or that of a hydrocarbon class does not imply that the data is of more importance or that mineralization is of higher quantity or grade. SGH interpretation must use the review of the combination of specific hydrocarbon classes to make any interpretation.

## **SGH DATA INTERPRETATION**

- **SGH DATA LEVELING:**

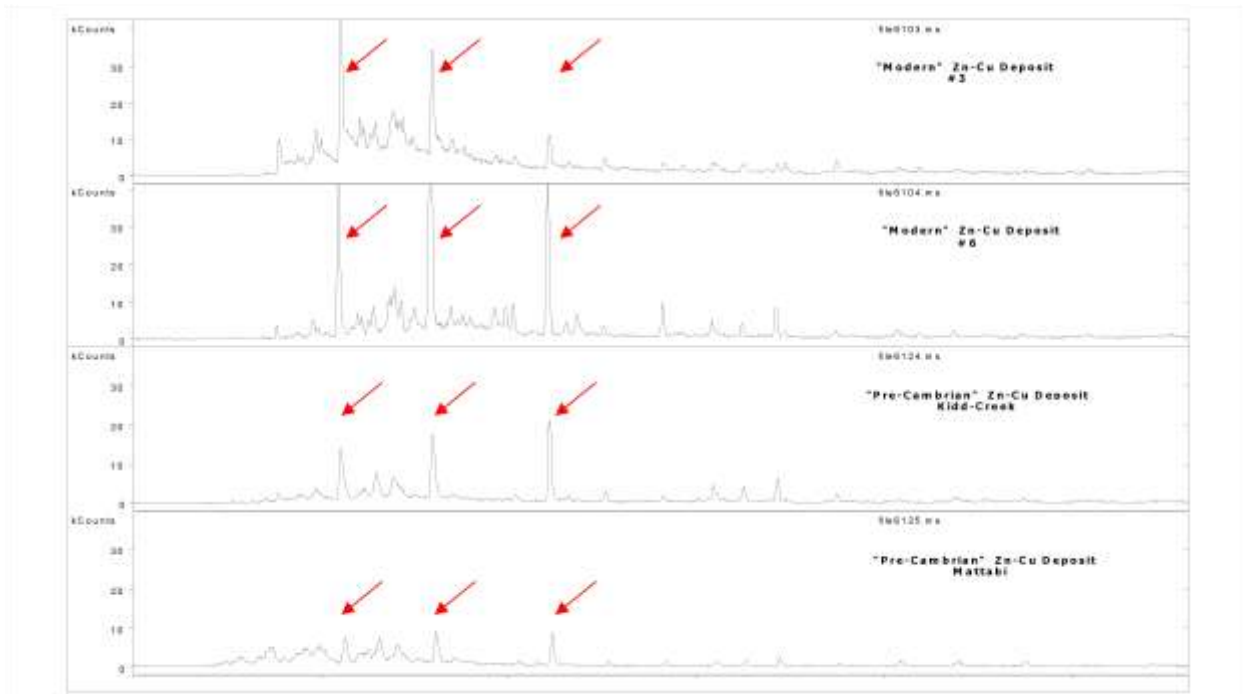
The combination of SGH data from different field sampling events has rarely required leveling in order to combine survey grids. The only circumstances that have occasionally required leveling has been the combination of samples that are very fine in texture, thus having a combined large surface area to samples of peat that may be in nearby areas. Even after maceration of the peat and in using the maximum size of sample amenable to this test method, peat samples have a significantly lower surface area. Peat samples have only required leveling in one survey in the last 500 SGH interpretations.

In only the last year it has been observed that SGH data **may** require leveling when different field sampling events have significantly different soil temperature. It has been documented that only when "soil" samples are taken from "frozen" ground that data leveling may be required as frozen sample act as a frozen cap to the hydrocarbon flux and may collect a higher concentration of hydrocarbon compounds compared to sampling during seasons where the samples are not frozen. Only two surveys have required leveling in the last 500 SGH interpretations.

The author has taken introductory training in the leveling of geochemical data. If leveling is required, both data sets are reviewed in terms of maximum, minimum and average values for each SGH Pathfinder Class intended for use in the interpretation. Data is sectioned into quartiles and each section is assigned specific leveling factors that is then applied to one data set. It should be noted that any type of data leveling is an approximation.

## **SGH – FORENSIC GEOCHEMICAL SIGNATURES**

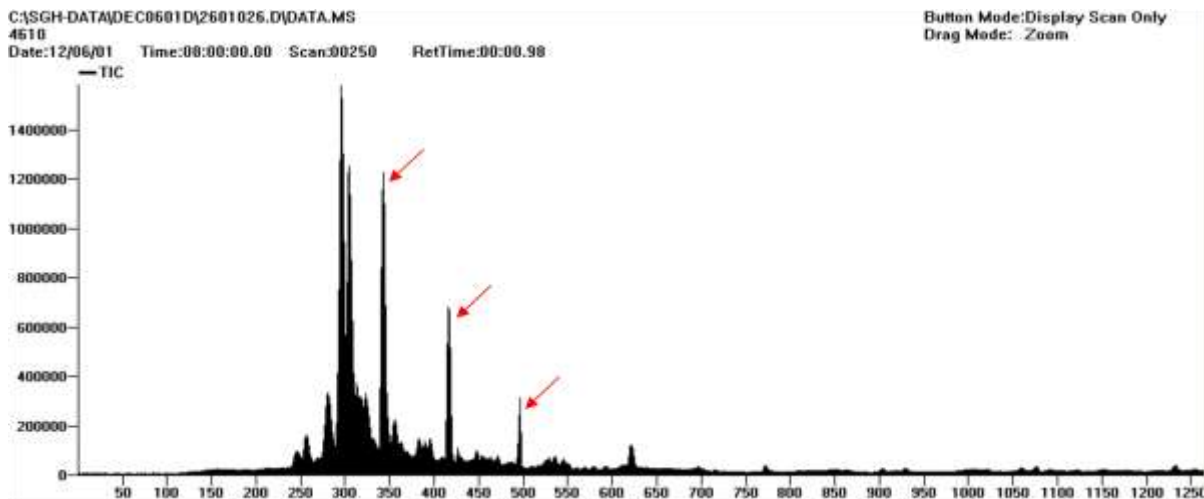
- One of the first experiments in 1996 in the development of the SGH analysis was to observe if an SGH response could be obtained directly from an ore sample. From office shelf specimens, small rock chips were obtained which were then crushed and milled. The fine pulp obtained was then subjected to the SGH analysis. These shelf specimen samples were from well known Volcanic Massive Sulphide deposits of the Mattabi deposit from the Archean Sturgeon Lake Camp in Northwestern Ontario and from the Kidd Creek Archean volcanic-hosted copper-zinc deposit. Even these specimen samples contain a geochemical record of the hydrocarbons produced by the bacteria that had been feeding on these deposits at depth. As a comparison, SGH analysis were similarly conducted on modern-day VMS ore samples taken from a “black smoker” hydrothermal volcanic vent from the deep sea bed of the Juan de Fuca Ridge where high concentrations of microbial growth was also known to exist. The raw data profiles as GC/MS Total Ion Chromatograms are shown below to illustrate the “visible” portion of the VMS signature obtained from the SGH analysis.



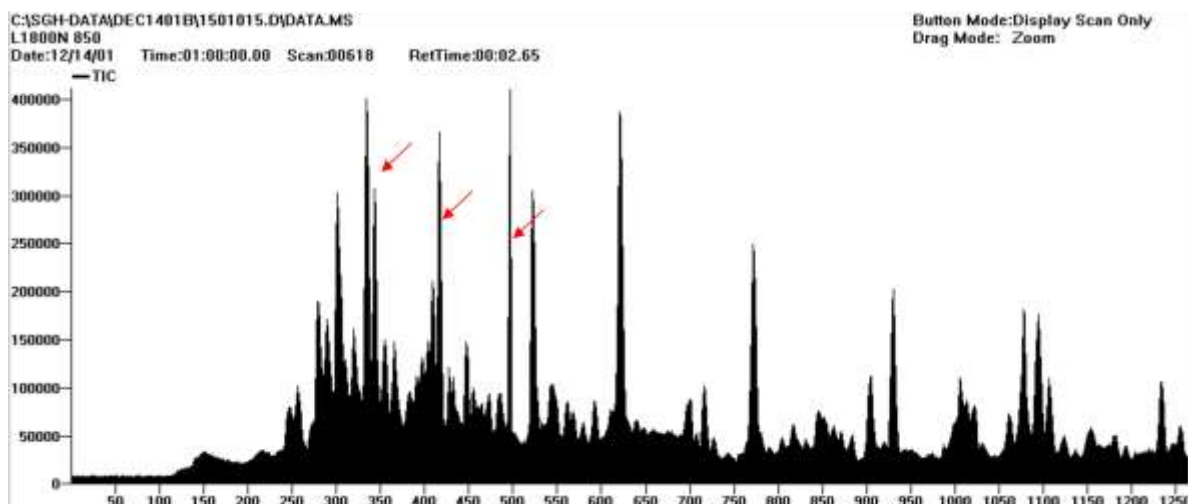
The top two profiles were obtained from two samples of the modern day “black smokers”. The third and fourth chromatograms in the above image were obtained from the Pre-Cambrian Zn-Cu Kidd Creek and Mattabi deposits. The red arrows point to three compounds that are a portion of the SGH signature for VMS type deposits. This visible portion of the VMS signature of hydrocarbons can easily be seen in the analysis of each of these four samples.

## **SGH – FORENSIC GEOCHEMICAL SIGNATURES** (cont.)

The next question in our early objectives was to see if this SGH signature could also be observed in surficial soil samples that had been taken over VMS deposits. Through our research projects, soil samples were obtained from over the Ruttan Cu-Zn VMS deposit near Leaf Rapids, Manitoba and located in the Paleoproterozoic Rusty Lake greenstone belt. The profile obtained, as observed in the raw GC/MS chromatogram, is shown in this next image below:



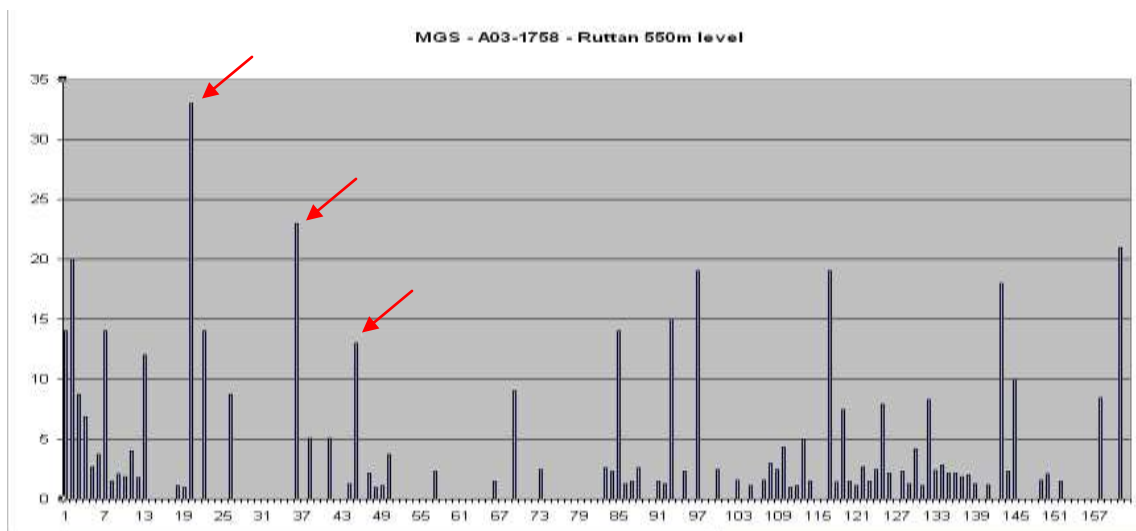
The three compounds indicated by the red arrows represent the same visible portion of the VMS signature observed from the modern day black smoker samples and the ore samples taken from the Mattabi and Kidd Creek, even though this soil was taken from over a different VMS deposit in a geographically different area. Is this coincidence? Another soil sample was obtained from Noranda's Gilmour South base-metal occurrence in the Bathurst Mining camp in northern New Brunswick. As shown below, this sample contained a very complex SGH signature, however the visible portion of the VMS signature as indicated by the red arrows is still observed as in the black smoker, Mattabi and Kidd Creek ore samples.



## **SGH – FORENSIC GEOCHEMICAL SIGNATURES** (cont.)

In research conducted by the Ontario Geological Survey, this same portion of the SGH signature was also observed over the VMS deposit at Cross Lake in Ontario. Note that the visible signature shown as the three compounds indicated by the red arrows is only a small portion of the complete SGH VMS signature. The full VMS signature is made up of at least three groups, as three organic chemical classes, that together contain at least 35 of the individual SGH hydrocarbons.

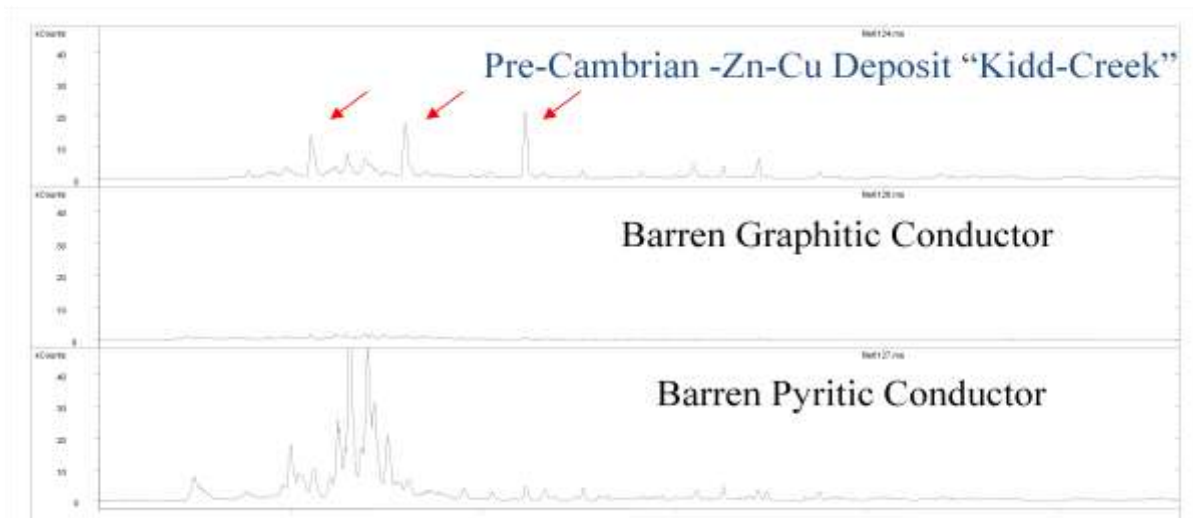
The chromatograms shown on the preceding page from the GC/MS analysis are not used directly in the interpretation of SGH data. As we are only interested in a specific list of 162 hydrocarbons, the mass spectrometer and associated software programs specifically identifies the hydrocarbons of interest, runs calculations using relative responses to a short list of hydrocarbons used as standards, and develops an Excel spreadsheet of semi-quantitative concentration data to represent the sample. Thus the SGH results for a sample, like that observed in ore from the Ruttan, are filtered to obtain the concentrations for the specific 162 hydrocarbons. A simple bar graph drawn from the Excel spreadsheet of the hydrocarbons and their concentrations results in a DNA like **forensic SGH signature** as shown below. The portion discussed here as the “visible” SGH VMS signature in the GC/MS chromatograms, is again shown by the red arrows.



Through the work done in the SGH CAMIRO research projects, it was observed that the hydrocarbon signature produced by the SGH technique appeared to also be able to be used to differentiate barren from ore-bearing conductors. This was explored further through the submission and analysis of specific specimen samples that represented a barren pyritic conductor and a barren graphitic conductor.

## **SGH – FORENSIC GEOCHEMICAL SIGNATURES** (cont.)

The GC/MS chromatograms from these two specimens are compared to that obtained from the Kidd-Creek ore as shown below. This diagram conclusively shows that the SGH signatures obtained from the two types of barren conductors are completely different than that obtained by SGH over VMS type ore. SGH is thus able to differentiate between ore-bearing conductors and barren conductors as the Forensic SGH Geochemical signature is different.



- SGH has been described by the Ontario Geological Survey of Canada (OGS) as a “REDOX cell locator”. Many SGH surveys for Gold and other mineral targets can result in multiple types of anomalies, depending on the class of SGH compounds, even over the same target and in the same set of samples. Thus “Apical”, “Nested-Halo”, and “Rabbit-Ear” or “Halo” type SGH anomalies are all typically observed from the effect of REDOX cells that have developed over deposits. REDOX cells are also related to the presence of bacteriological activity.
- The VMS template of SGH Pathfinder Classes uses low and medium weight classes of hydrocarbon compounds. Again, at least three Pathfinder Class group maps, associated with the SGH signature for VMS, must be present to begin to be considered for assignment of a good rating. The Pathfinder Class anomalies in these maps must logically concur and support a consistent interpretation in relation to the expected geochromatographic characteristics of the Pathfinder Class, for a specific area.
- The interpretation development history shown here on pages 16-19 for VMS SGH Pathfinder Class map(s) shown in this report is similar to the development history for other target types. The reader should not draw a conclusion that SGH is used only for sulphide based mineralization as some of the most intense SGH anomaly have been associated with Kimberlites where sulphides are essentially not present.

## **SGH DATA INTERPRETATION**

### **DISCLAIMER:**

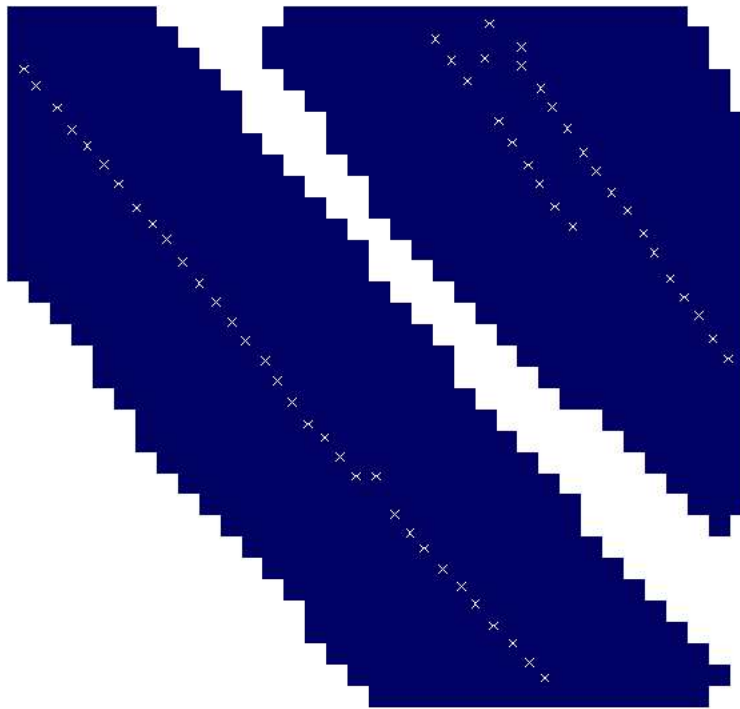
- This "SGH Interpretation Report" has been prepared to assist the user in understanding the development and capabilities of this Organic based Geochemistry. The interpretation of the Soil Gas Hydrocarbon (SGH) data is in reference to a template or group of SGH classes of compounds specific to a type of mineralization or target that is chosen by the client (i.e. the template for gold, copper, VMS, uranium, etc.). Although the template of SGH Pathfinder Classes that has been developed through research and review of case studies has proven to be able to address many lithologies, Activation Laboratories Ltd. cannot guarantee that the template is applicable to every type of target in every type of environment. The interpretation in this report attempts to identify an anomaly that has the best SGH signature in the survey for the type of mineralization or target chosen by the client. However, this interpretation is not exhaustive and there may be additional SGH anomalies that may warrant interest. It should not be viewed due to the generation of this SGH report, that Activation Laboratories Ltd. has the expertise or is in the business of interpreting geochemical data as a general service. As the author is the originator of the SGH geochemistry, has researched and developed this exploration tool since 1996, and has produced similar interpretations using SGH data for over 500 surveys, he is perhaps the best qualified to prepare this interpretation as assistance to clients wishing to use SGH. Activation Laboratories Ltd. can offer assistance in general suggestions for sampling protocols and in sample grid location design; however we accept no responsibility to the appropriateness of the samples taken. Activation Laboratories Ltd. has made every attempt to ensure the accuracy and reliability of the information provided in this report. Activation Laboratories Ltd. or its employees, does not accept any responsibility or liability for the accuracy, content, completeness, legality, or reliability of the information or description of processes contained in this report. The information is provided "as is" without a guarantee of any kind in the interpretation or use of the results of the SGH geochemistry. The client or user accepts all risks and responsibility for losses, damages, costs and other consequences resulting directly or indirectly from using any information or material contained in this report or using data from the associated spreadsheet of results.

**SGH EVALUATION OF RESULTS – A10-4706**  
**ALEXCO RESOURCE CORP. – MOM & SON SURVEY**

**SGH SURVEY INTERPRETATION**

- This report is based on the SGH results from the analysis of a total of 60 soil samples from the Mom & Son survey area. This soil survey is shown below as a sample location map with North as the top of the page. Samples are in three parallel transects, the longest transect is about 750 metres from the two more northeasterly transects. Sample spacing is approximately 50 metres. UTM coordinates were provided for mapping of the SGH results.

**SGH SURVEY – SAMPLE LOCATION MAP**



- The number of samples submitted for this survey is sufficient to use SGH as an exploration tool. Note that the SGH data is only reviewed for the particular target deposit type requested, in this case for the presence of a SEDEX type deposit. It is also assumed that there is only one potential target. To obtain the best interpretation the client should indicate if there are possible multiple targets, say from geophysical data. The possibility of multiple targets that are in close proximity should be known due to potential overlap and increased complexity of resulting geochromatographic anomalies which could alter the interpretation. As the SGH SEDEX signature is of moderate molecular weight, close proximity would be within about 250 metres.

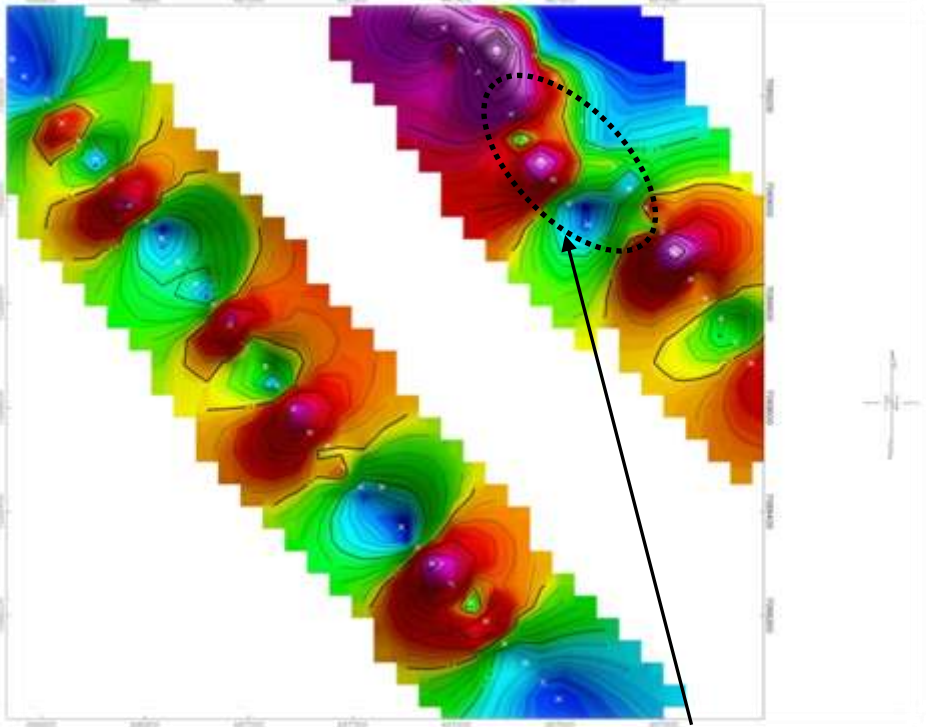
**SGH EVALUATION OF RESULTS – A10-4706**  
**ALEXCO RESOURCE CORP. – MOM & SON SURVEY**

**SGH SURVEY INTERPRETATION**

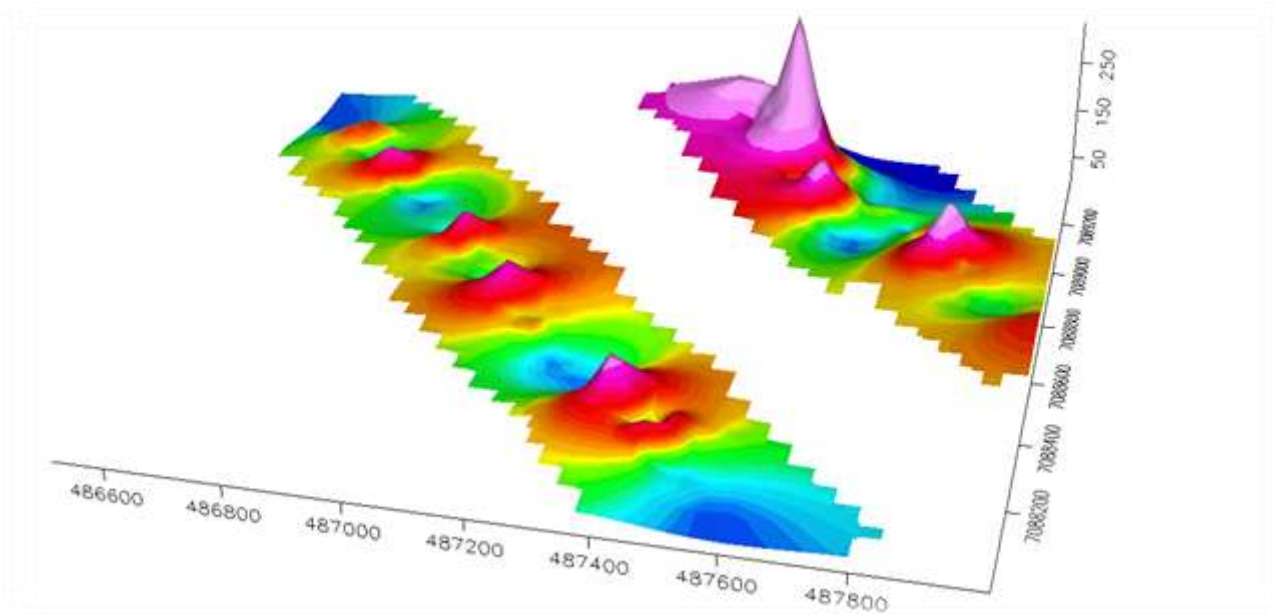
- Note that the associated SGH results are presented in a separate Excel spreadsheets. This raw data is semi-quantitative and is presented in units of picograms/gram or **parts-per-trillion** (ppt).
- **The overall precision of the SGH analysis for the samples in this SGH survey was very good** as demonstrated by 4 samples taken from this survey which were used for laboratory replicate analysis. The average Coefficient of Variation (%CV) of the replicate results for the project samples in this submission was 11.0% a very good level of analytical performance especially at such low parts-per-trillion concentrations.
- The plan view map on page 22, which is also shown in 3D, is an SGH "Pathfinder Class map" for targeting Ag-Pb-ZN mineralization that is very similar to our SEDEX SGH template. The SGH Pathfinder Class map represents the simple summation of several individual hydrocarbon compound concentrations that are grouped from within the same organic chemical class. SGH Pathfinder Class maps have been shown to be robust as they are each described using from 4 to 14 (unless otherwise stated) chemically related SGH compounds which are simply summed to create each class map. Thus each map has a higher level of confidence as it is "not" illustrating just one compound response. A legend of the SGH classes appears in the SGH data spreadsheet. The overall SGH interpretation rating (page 23) has even a higher level of confidence as it further relies on the consensus between at least three SGH Pathfinder Classes that together define the signature of the target at depth (only one pathfinder class map is shown in this report at this price point).
- The top SGH Pathfinder Class map on page 22 is the most reliable and sensitive at depicting this type of mineralization. Review of all of the SGH Pathfinder Class maps indicate that a possible REDOX cell exists within the area outlined by the black dotted oval.
- At this time we cannot comment on either the depth to mineralization or grade, except that SGH is able to detect mineralization at up to 520 metres in depth (McArthur River Uranium P2 pod, CAMIRO 97E04).
- This interpretation is based only on this survey and on these SGH results.

**SGH EVALUATION OF RESULTS – A10-4706**  
**ALEXCO RESOURCE CORP. – MOM & SON SURVEY**

**SGH "SEDEX" PATHFINDER CLASS MAPS**



EXAMPLE OF POSSIBLE SEDEX MINERALIZED REDOX CELL



Results represent only the material tested. Actlabs is not liable for any claim/damage from the use of this report in excess of the test cost. Samples are discarded in 90 days unless requested otherwise. This report is only to be reproduced in full.

**SGH EVALUATION OF RESULTS – A10-4706**  
**ALEXCO RESOURCE CORP. – MOM & SON SURVEY**

**SGH SURVEY INTERPRETATION RATING**

- The relationship between the SGH results for these transects is difficult to interpret due to the distance between these sample lines. Nearly all of the SGH Pathfinder Class maps illustrate higher responses over the northeast set of sample lines than the longer southwest line.
- There are several SGH Pathfinder Classes used for Ag-Pb-Zn and SEDEX type mineralization that agree with the Pathfinder Class Map shown which improves the confidence in the data and the associated interpretation. Thus, after review of all of the SGH Pathfinder Class maps that were able to be detected, the SGH results from these soil samples would suggest a **"rating of 3.0"** for the interpretation as a REDOX cell over Ag-Pb-Zn type mineralization at the Mom & Son survey. This rating is based on a scale of 6.0, in increments of 0.5, with a value of 6.0 being the best. As the template is very similar to that used for SEDEX mineralization, this rating represents the similarity of these SGH results to case studies for SEDEX type deposits from study sites over the Mount Isa deposit in Australia as well as Irish type, other Broken Hill type, and Mississippi Valley type SEDEX deposits. The degree of confidence in the rating only starts to be "good" at a level of 4.0.
- No data leveling was required for this report.
- These interpretations are based only on these SGH results.
- The client should use a combination of these SGH results and its report with additional geochemical, geophysical, and geological information to possibly obtain a more confident and precise target location.

## **IN-FILL SAMPLE RECOMMENDATIONS FOR SGH ANALYSIS**

- Based on the results of this report and/or other information, the client may decide that infill sampling may be warranted. To obtain the best results from additional sampling for SGH it is recommended that sample locations within, or bordering, the area of interest be re-sampled rather than combining new results with the sample data from the initial survey. Although several SGH surveys have previously been easily and directly, combined without data leveling, it cannot be guaranteed that data leveling will not be required. It has been found that data leveling is more apt to be required should the new samples be collected under significantly different environmental conditions than during the initial sample survey, i.e. summer collection versus winter collection. The process of data leveling adds a minimum of 3 to 5 days of work to conduct the additional data evaluation, develop additional plots of the results, conduct new interpretations, and in additional report descriptions. Results from data leveling is also always considered "an approximation" thus having a lower level of confidence that newly re-sampled locations would have. As of September 2010, an additional cost will be invoiced should data leveling operations be required if the client requests that two SGH data sets be interpreted and reported together. Thus re-sampling locations will provide a faster turnaround time for results and provide more accurate and confident surveys for evaluation and aid in deciding specific drill targets.

## Cautionary Note Regarding Assumptions and Forward Looking Statements

The statements and target rating made in the Soil Gas Hydrocarbon (SGH) interpretive report or in other communications may contain certain forward-looking information related to a target or SGH anomaly.

Statements related to the rating of a target are based on comparison of the SGH signatures derived by Activation Laboratories Ltd. through previous research on known case studies. The rating is not derived from any statistics or other formula. The rating is a subjective value on a scale of 0 to 6 relative to the similarity of the SGH signature reviewed compared to the results of previous scientific research and case studies based on the analysis of surficial samples over known ore bodies. No information on other geochemistries, geophysics, or geology is usually available as additional information for the interpretation and assignment of a rating value unless otherwise stated. The rating does not imply ore grade and is not to be used in mineral resource estimate calculations. References to the rating should be viewed as forward-looking statements to the extent that it involves a subjective comparison to known SGH case studies. As with other geochemistries, the implied rating and anticipated target characteristics may be different than that actually encountered if the target is drilled or the property developed.

Activation Laboratories Ltd. may also make a scientifically based reference in this interpretive report to an area that might be used as a drill target. Usually the nearest sample is identified as an approximation to a "possible drill target" location. This is based only on SGH results and is to be regarded as a guide based on the current state of this science.

Unless stated, Activation Laboratories Ltd. has not physically observed the exploration site and has no prior knowledge of any site description or details. Actlabs makes general recommendations for sampling and shipping of samples. Unless stated, the laboratory does not witness sampling, does not take into consideration the specific sampling procedures used, season, handling, packaging, or shipping methods. The majority of the time, Activation Laboratories Ltd. has had no input into sampling survey design. Where specified Activation Laboratories Ltd. may not have conducted sample preparation procedures as it may have been conducted at the client's assigned laboratory. Although the Company has attempted to identify important factors that could cause actual actions, events or results to differ scientifically which may impact the associated interpretation and target rating from those described in forward-looking statements, there may be other factors that cause actions, events or results not to be as anticipated, estimated or intended.

In general, any statements that express or involve discussions with respect to predictions, expectations, beliefs, plans, projections, objectives, assumptions, future events or performance are not statements of historical fact. These "scientifically based educated theories" should be viewed as "forward-looking statements".

Readers of this interpretive report are cautioned not to place undue reliance on forward-looking information. Forward looking statements are made based on scientific beliefs, estimates and opinions on the date the statements are made and the interpretive report issued. The Company undertakes no obligation to update forward-looking statements or otherwise revise previous reports if these beliefs, estimates and opinions, future scientific developments, other new information, or other circumstances should change that may affect the analytical results, rating, or interpretation.

Actlabs nor its employees shall be liable for any claims or damages as a result of this report,  
any interpretation, omissions in preparation, or in the test conducted.  
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Date Submitted: August 6, 2010

Date Analyzed: September 2-9, 2010

Interpretation Report: September 22, 2010

## ALEXCO RESOURCE CORP.

PO Box 7, Site #2  
Elsa, Yukon Territory  
Y0B 1J0

Attention: Dick Lippoth

RE: Your Reference: MOM & SON SURVEY

## CERTIFICATE OF ANALYSIS

60 Soil samples were submitted for analysis

These samples were prepared according to our Code S4 procedure at our Actlabs Ancaster facility.

The following analytical package was requested: Code SGH – Soil Gas Hydrocarbon Geochemistry

REPORT/WORKORDER: A10-4706

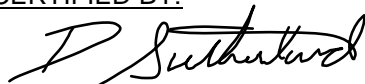
This report may be reproduced without our consent. If only selected portions of the report are reproduced, permission must be obtained. If no instructions were given at the time of sample submittal regarding excess material, it will be discarded within 90 days of this report. Our liability is limited solely to the analytical cost of these analyses. Test results are representative only of the material submitted for analysis.

### Notes:

The SGH – Soil Gas Hydrocarbon Geochemistry is a semi-quantitative analytical procedure to detect and measure 162 hydrocarbon compounds as the organic signature in the sample material collected from a survey area. It is not an assay of mineralization but is a predictive geochemical tool used for exploration. This certificate pertains only to the SGH data presented in the associated Microsoft Excel spreadsheet of results.

The author of this SGH Interpretation Report, Mr. Dale Sutherland, is the creator of the SGH organic geochemistry. He is a Chartered Chemist (C.Chem.) and Forensic Scientist specializing in organic chemistry. He is not a professional geologist or geochemist.

CERTIFIED BY:



Dale Sutherland, B.Sc.,B.Sc.,B.Ed.,C.Chem.  
Forensic Scientist, Organics Manager,  
Director of Research  
Activation Laboratories Ltd.

	001 - LA	002 - LA	003 - LB	004 - LA	005 - LB	006 - LB	007 - LA	008 - LB	009 - LB	010 - LB	011 - LA	012 - LB	013 - LBA	014 - LB
7032-8680	5	3	1	2	2	1	-1	2	-1	-1	-1	-1	-1	-1
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7086-8597	5	44	3	3	5	5	-1	2	1	1	-1	-1	-1	-1
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7152-8525	6	4	3	-1	5	4	-1	2	1	1	-1	-1	-1	-1
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6992-8721	6	27	2	-1	8	2	-1	7	4	3	-1	-1	-1	-1
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7879-8809	7	50	4	5	7	4	-1	1	-1	-1	-1	-1	-1	-1
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7441-9246	41	178	6	10	8	3	2	3	2	1	-1	-1	-1	-1
7476-9202	50	235	8	11	9	6	2	5	-1	3	1	-1	1	-1
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LMB-QA	3	2	2	-1	1	-1	-1	-1	-1	-1	-1	-1	-1	-1

**SOIL GAS HYDROCARBONS (SGH) by GC/MS**

A10-4706 - Date: September 2, 2010 - Activation Laboratories Ltd.

Results represent only the material tested. Actlabs is not liable for any claim/damage from use of this report in excess of the test cost. Unless requested samples are discarded in 90 days.

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**Alexco Resource Corp. - Dick Lippoth  
 Mom & Son Project**

R=Replicate Sample

-1=Reporting Limit of 1pg/g (ppt=parts per trillion)

LMB-QA = Laboratory Materials Blank - Quality Assurance

**LEGEND FOR COLUMN HEADINGS - SGH COMPOUND CLASSES**

LA, HA, LBA, HBA = ALKYL-ALKANES

LB, HB, LPB, HPB = ALKYL-BENZENES

LAR, MAR, HAR = ALKYL-AROMATICS

LBI, MBI, HBI, LPH, MPH, HPH = ALKYL-POLYAROMATICS

THI = ALKYL-DIVINYLENE SULPHIDES

ALK = ALKYL-ALKENES

	015 - LAR	016 - LB	017 - LB	018 - LB	019 - LB	020 - LA	021 - LPH	022 - LBA	023 - LAR	024 - LB	025 - LAR	026 - LBA	027 - LB	028 - ALK
7032-8680	-1	-1	-1	-1	-1	1	-1	1	-1	-1	-1	-1	-1	-1
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7152-8525	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
7152-8525-R	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
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7493-8109	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
7533-8109	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
7567-8071	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
7597-8039	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
6992-8721	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	1	-1
6964-8759	-1	-1	-1	-1	-1	1	-1	1	-1	-1	-1	-1	-1	-1
6964-8759-R	-1	-1	-1	-1	-1	1	-1	1	-1	-1	-1	-1	-1	-1
6932-8799	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
6896-8838	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
6864-8881	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
6832-8926	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
6804-8957	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
6772-8990	-1	-1	-1	-1	-1	2	-1	2	-1	-1	-1	-1	-1	-1
6732-9038	-1	-1	-1	-1	-1	1	-1	1	-1	-1	-1	-1	-1	-1
6705-9078	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
6672-9115	-1	-1	-1	-1	-1	1	-1	1	-1	-1	-1	-1	-1	-1
6640-9148	-1	-1	-1	-1	-1	1	-1	1	1	-1	-1	-1	-1	-1
6611-9192	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
6567-9237	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
6544-9271	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
7733-9021	-1	-1	-1	-1	-1	-1	-1	-1	1	-1	-1	-1	-1	-1
7702-9064	-1	-1	-1	-1	-1	-1	-1	1	-1	-1	-1	-1	-1	-1
7702-9064-R	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
7676-9102	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
7643-9151	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
7612-9194	-1	-1	-1	-1	-1	1	-1	1	1	-1	-1	-1	-1	-1
7589-9232	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
7551-9278	-1	-1	-1	-1	-1	1	-1	1	-1	-1	-1	-1	-1	-1
7514-9316	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
7485-9362	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
7531-9122	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
7563-9076	-1	-1	-1	-1	-1	-1	-1	1	-1	-1	-1	1	-1	-1
7587-9038	-1	-1	-1	-1	-1	2	-1	1	-1	-1	-1	-1	-1	-1
7617-8993	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
7654-8952	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
7968-8685	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
7938-8725	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
7910-8772	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
7910-8772-R	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1

	015 - LAR	016 - LB	017 - LB	018 - LB	019 - LB	020 - LA	021 - LPH	022 - LBA	023 - LAR	024 - LB	025 - LAR	026 - LBA	027 - LB	028 - ALK
7879-8809	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
7851-8847	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
7819-8899	-1	-1	-1	-1	-1	2	-1	2	1	-1	-1	-1	-1	-1
7797-8938	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
7765-8984	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
7376-9331	-1	-1	-1	-1	-1	2	-1	2	-1	-1	-1	-1	-1	-1
7408-9289	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
7441-9246	-1	-1	-1	-1	-1	1	-1	1	-1	-1	-1	-1	-1	-1
7476-9202	-1	-1	-1	-1	-1	2	-1	2	-1	-1	-1	-1	-1	-1
7505-9165	-1	-1	-1	-1	-1	2	-1	2	2	-1	-1	-1	-1	-1
LMB-QA	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
LMB-QA	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1

	029 - HB	030 - HB	031 - HB	032 - HB	033 - HB	034 - HB	035 - LAR	036 - LBA	037 - HB	038 - LBA	039 - LAR	040 - LPB	041 - LBA	042 - LPB
7032-8680	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
7057-8640	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
7086-8597	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
7118-8552	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
7152-8525	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
7152-8525-R	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
7184-8486	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
7216-8447	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
7256-8447	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
7294-8370	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
7325-8332	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
7353-8301	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	1	-1
7391-8260	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
7429-8224	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
7457-8189	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	1	-1
7493-8109	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
7533-8109	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
7567-8071	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
7597-8039	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
6992-8721	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
6964-8759	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	2	-1
6964-8759-R	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	2	-1
6932-8799	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
6896-8838	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
6864-8881	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
6832-8926	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
6804-8957	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
6772-8990	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	1	-1
6732-9038	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
6705-9078	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
6672-9115	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
6640-9148	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
6611-9192	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
6567-9237	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
6544-9271	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
7733-9021	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
7702-9064	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
7702-9064-R	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
7676-9102	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
7643-9151	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
7612-9194	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
7589-9232	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
7551-9278	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
7514-9316	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
7485-9362	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
7531-9122	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
7563-9076	-1	-1	-1	-1	-1	-1	-1	-1	-1	1	-1	-1	1	-1
7587-9038	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
7617-8993	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
7654-8952	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
7968-8685	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
7938-8725	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
7910-8772	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
7910-8772-R	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1

	029 - HB	030 - HB	031 - HB	032 - HB	033 - HB	034 - HB	035 - LAR	036 - LBA	037 - HB	038 - LBA	039 - LAR	040 - LPB	041 - LBA	042 - LPB
7879-8809	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
7851-8847	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
7819-8899	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	1	-1
7797-8938	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
7765-8984	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
7376-9331	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	3	-1
7408-9289	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
7441-9246	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	1	-1
7476-9202	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	3	-1
7505-9165	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
LMB-QA	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
LMB-QA	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1

	043 - HB	044 - HB	045 - LA	046 - LPH	047 - LBA	048 - HB	049 -HB	050 - LBA	051 - LBI	052 - LPB	053 - LPB	054 - HB	055 - LPB	056 - LBI
7032-8680	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
7057-8640	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
7086-8597	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
7118-8552	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
7152-8525	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
7152-8525-R	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
7184-8486	-1	-1	1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
7216-8447	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
7256-8447	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
7294-8370	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
7325-8332	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
7353-8301	-1	-1	1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
7391-8260	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
7429-8224	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
7457-8189	-1	-1	1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
7493-8109	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
7533-8109	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
7567-8071	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
7597-8039	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
6992-8721	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
6964-8759	-1	-1	2	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
6964-8759-R	-1	-1	2	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
6932-8799	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
6896-8838	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
6864-8881	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
6832-8926	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
6804-8957	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
6772-8990	-1	-1	1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
6732-9038	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
6705-9078	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
6672-9115	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
6640-9148	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
6611-9192	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
6567-9237	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
6544-9271	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
7733-9021	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
7702-9064	-1	-1	1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
7702-9064-R	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
7676-9102	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
7643-9151	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
7612-9194	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
7589-9232	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
7551-9278	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
7514-9316	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
7485-9362	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
7531-9122	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
7563-9076	-1	-1	1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
7587-9038	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
7617-8993	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
7654-8952	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
7968-8685	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
7938-8725	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
7910-8772	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
7910-8772-R	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1

	043 - HB	044 - HB	045 - LA	046 - LPH	047 - LBA	048 - HB	049 -HB	050 - LBA	051 - LBI	052 - LPB	053 - LPB	054 - HB	055 - LPB	056 - LBI
7879-8809	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
7851-8847	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
7819-8899	-1	-1	1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
7797-8938	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
7765-8984	-1	-1	1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
7376-9331	-1	-1	3	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
7408-9289	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
7441-9246	-1	-1	2	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
7476-9202	-1	-1	4	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
7505-9165	-1	-1	1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
LMB-QA	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
LMB-QA	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1

	057 - ALK	058 - LPB	059 - LPB	060 - LPH	061 - LBI	062 - LBA	063 - LPH	064 - LBA	065 - HPB	066 - LBA	067 - LBI	068 - HPB	069 - LA	070 - HPB
7032-8680	-1	-1	-1	-1	-1	-1	-1	-1	-1	1	-1	-1	1	-1
7057-8640	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
7086-8597	-1	-1	-1	-1	-1	-1	-1	-1	-1	3	-1	-1	3	-1
7118-8552	-1	-1	-1	-1	-1	-1	-1	-1	-1	2	-1	-1	2	-1
7152-8525	-1	-1	-1	-1	-1	-1	-1	-1	-1	1	-1	-1	1	-1
7152-8525-R	-1	-1	-1	-1	-1	-1	-1	-1	-1	1	-1	-1	1	-1
7184-8486	-1	-1	-1	-1	-1	-1	-1	-1	-1	2	-1	-1	2	-1
7216-8447	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
7256-8447	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
7294-8370	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
7325-8332	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
7353-8301	-1	-1	-1	-1	-1	-1	-1	-1	-1	3	-1	-1	3	-1
7391-8260	-1	-1	-1	-1	-1	-1	-1	-1	-1	2	-1	-1	2	-1
7429-8224	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
7457-8189	-1	-1	-1	-1	-1	-1	-1	1	-1	3	-1	-1	3	-1
7493-8109	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
7533-8109	-1	-1	-1	-1	-1	-1	-1	-1	-1	1	-1	-1	-1	-1
7567-8071	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
7597-8039	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
6992-8721	-1	-1	-1	-1	-1	-1	-1	-1	-1	1	-1	-1	1	-1
6964-8759	-1	-1	-1	-1	-1	-1	-1	-1	-1	3	-1	-1	3	-1
6964-8759-R	-1	-1	-1	-1	-1	-1	-1	-1	-1	3	-1	-1	3	-1
6932-8799	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
6896-8838	-1	-1	-1	-1	-1	-1	-1	-1	-1	1	-1	-1	1	-1
6864-8881	-1	-1	-1	-1	-1	1	-1	2	-1	1	-1	-1	1	-1
6832-8926	-1	-1	-1	-1	-1	1	-1	2	-1	-1	-1	-1	-1	-1
6804-8957	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
6772-8990	-1	-1	-1	-1	-1	1	-1	-1	-1	2	-1	-1	2	-1
6732-9038	-1	-1	-1	-1	-1	-1	-1	-1	-1	1	-1	-1	1	-1
6705-9078	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
6672-9115	-1	-1	-1	-1	-1	-1	-1	1	-1	1	-1	-1	1	-1
6640-9148	-1	-1	-1	-1	-1	-1	-1	-1	-1	2	-1	-1	2	-1
6611-9192	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
6567-9237	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
6544-9271	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
7733-9021	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
7702-9064	-1	-1	-1	-1	-1	-1	-1	-1	-1	2	-1	-1	2	-1
7702-9064-R	-1	-1	-1	-1	-1	-1	-1	-1	-1	1	-1	-1	1	-1
7676-9102	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
7643-9151	-1	-1	-1	-1	-1	-1	-1	-1	-1	1	-1	-1	1	-1
7612-9194	-1	-1	-1	-1	-1	-1	-1	-1	-1	1	-1	-1	1	-1
7589-9232	-1	-1	-1	-1	-1	-1	-1	-1	-1	2	-1	-1	2	-1
7551-9278	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
7514-9316	-1	-1	-1	-1	-1	-1	-1	-1	-1	1	-1	-1	1	-1
7485-9362	-1	-1	-1	-1	-1	-1	-1	-1	-1	1	-1	-1	1	-1
7531-9122	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
7563-9076	-1	-1	-1	-1	-1	-1	-1	-1	-1	3	-1	-1	3	-1
7587-9038	-1	-1	-1	-1	-1	-1	-1	-1	-1	2	-1	-1	2	-1
7617-8993	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
7654-8952	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
7968-8685	-1	-1	-1	-1	-1	-1	-1	-1	-1	2	-1	-1	2	-1
7938-8725	-1	-1	-1	-1	-1	-1	-1	-1	-1	1	-1	-1	1	-1
7910-8772	-1	-1	-1	-1	-1	-1	-1	-1	-1	1	-1	-1	1	-1
7910-8772-R	-1	-1	-1	-1	-1	-1	-1	-1	-1	1	-1	-1	1	-1

	057 - ALK	058 - LPB	059 - LPB	060 - LPH	061 - LBI	062 - LBA	063 - LPH	064 - LBA	065 - HPB	066 - LBA	067 - LBI	068 - HPB	069 - LA	070 - HPB
7879-8809	-1	-1	-1	-1	-1	-1	-1	-1	-1	2	-1	-1	2	-1
7851-8847	-1	-1	-1	-1	-1	-1	-1	2	-1	1	-1	-1	1	-1
7819-8899	-1	-1	-1	-1	-1	-1	-1	1	-1	3	-1	-1	3	-1
7797-8938	-1	-1	-1	-1	-1	-1	-1	-1	-1	1	-1	-1	1	-1
7765-8984	-1	-1	-1	-1	-1	-1	-1	1	-1	2	-1	-1	2	-1
7376-9331	-1	-1	-1	-1	-1	-1	-1	-1	-1	3	-1	-1	3	-1
7408-9289	-1	-1	-1	-1	-1	-1	-1	1	-1	2	-1	-1	2	-1
7441-9246	-1	-1	-1	-1	-1	-1	-1	-1	-1	3	-1	-1	3	-1
7476-9202	-1	-1	-1	-1	-1	-1	-1	-1	-1	7	-1	-1	7	-1
7505-9165	-1	-1	-1	-1	-1	-1	-1	-1	-1	2	-1	-1	2	-1
LMB-QA	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
LMB-QA	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1

	071 - HPB	072 - HPB	073 - HBA	074 - HBA	075 - HPB	076 - LPH	077 - MAR	078 - ALK	079 - LBI	080 - LPH	081 - MAR	082 - LPH	083 - HBA	084 - HBA
7032-8680	-1	-1	-1	1	-1	-1	-1	-1	-1	-1	-1	-1	1	-1
7057-8640	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
7086-8597	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
7118-8552	-1	-1	-1	2	-1	-1	-1	-1	-1	-1	-1	-1	1	-1
7152-8525	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
7152-8525-R	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
7184-8486	-1	-1	-1	1	-1	-1	-1	-1	-1	-1	-1	-1	1	-1
7216-8447	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
7256-8447	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
7294-8370	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
7325-8332	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
7353-8301	-1	-1	-1	1	-1	-1	-1	-1	-1	-1	-1	-1	2	-1
7391-8260	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
7429-8224	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
7457-8189	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	1	-1
7493-8109	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
7533-8109	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
7567-8071	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
7597-8039	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
6992-8721	-1	-1	-1	1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
6964-8759	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
6964-8759-R	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
6932-8799	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
6896-8838	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
6864-8881	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
6832-8926	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
6804-8957	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
6772-8990	-1	-1	-1	2	-1	-1	-1	-1	-1	-1	-1	-1	1	-1
6732-9038	-1	-1	-1	1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
6705-9078	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
6672-9115	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
6640-9148	-1	-1	-1	1	-1	-1	-1	-1	-1	-1	-1	-1	1	-1
6611-9192	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
6567-9237	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
6544-9271	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
7733-9021	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
7702-9064	-1	-1	-1	2	-1	-1	-1	-1	-1	-1	-1	-1	1	-1
7702-9064-R	-1	-1	-1	1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
7676-9102	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
7643-9151	-1	-1	-1	1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
7612-9194	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
7589-9232	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
7551-9278	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	1	-1
7514-9316	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
7485-9362	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
7531-9122	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
7563-9076	-1	-1	-1	2	-1	-1	-1	-1	-1	-1	-1	-1	2	-1
7587-9038	-1	-1	-1	2	-1	-1	-1	-1	-1	-1	-1	-1	1	-1
7617-8993	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
7654-8952	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
7968-8685	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
7938-8725	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
7910-8772	-1	-1	-1	1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
7910-8772-R	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1

	071 - HPB	072 - HPB	073 - HBA	074 - HBA	075 - HPB	076 - LPH	077 - MAR	078 - ALK	079 - LBI	080 - LPH	081 - MAR	082 - LPH	083 - HBA	084 - HBA
7879-8809	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
7851-8847	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
7819-8899	-1	-1	1	-1	-1	-1	-1	-1	-1	-1	-1	-1	1	-1
7797-8938	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
7765-8984	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
7376-9331	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
7408-9289	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
7441-9246	-1	-1	-1	1	-1	-1	-1	-1	-1	-1	-1	-1	1	-1
7476-9202	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	2	-1
7505-9165	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	1	-1
LMB-QA	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
LMB-QA	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1

	085 - LPH	086 - LBI	087 - MAR	088 - HBA	089 - THI	090 - HPB	091 - LBI	092 - LPH	093 - LA	094 - LBI	095 - MAR	096 - LPH	097 - HBA	098 - THI
7032-8680	2	-1	-1	-1	-1	-1	-1	-1	6	-1	-1	-1	2	-1
7057-8640	2	-1	-1	-1	-1	-1	-1	-1	4	-1	-1	-1	1	-1
7086-8597	3	-1	-1	-1	-1	-1	-1	-1	6	-1	-1	-1	2	-1
7118-8552	3	-1	-1	1	-1	-1	-1	-1	6	-1	-1	-1	3	-1
7152-8525	2	-1	-1	-1	-1	-1	-1	-1	4	-1	-1	-1	1	-1
7152-8525-R	2	-1	-1	-1	-1	-1	-1	-1	6	-1	-1	-1	2	-1
7184-8486	3	-1	-1	-1	-1	-1	-1	-1	7	-1	-1	-1	2	-1
7216-8447	1	-1	-1	-1	-1	-1	-1	-1	3	-1	-1	-1	1	-1
7256-8447	2	-1	-1	-1	-1	-1	-1	-1	4	-1	-1	-1	-1	-1
7294-8370	1	-1	-1	-1	-1	-1	-1	-1	3	-1	-1	-1	-1	-1
7325-8332	-1	-1	-1	-1	-1	-1	-1	-1	2	-1	-1	-1	-1	-1
7353-8301	3	-1	-1	2	-1	-1	-1	-1	9	-1	-1	-1	2	-1
7391-8260	2	-1	-1	-1	-1	-1	-1	-1	6	-1	-1	-1	2	-1
7429-8224	1	-1	-1	-1	-1	-1	-1	-1	3	-1	-1	-1	-1	-1
7457-8189	3	-1	-1	-1	-1	-1	-1	-1	9	-1	-1	-1	2	-1
7493-8109	1	-1	-1	-1	-1	-1	-1	-1	3	-1	-1	-1	-1	-1
7533-8109	1	-1	-1	-1	-1	-1	-1	-1	4	-1	-1	-1	-1	-1
7567-8071	-1	-1	-1	-1	-1	-1	-1	-1	2	-1	-1	-1	-1	-1
7597-8039	1	-1	-1	-1	-1	-1	-1	-1	2	-1	-1	-1	-1	-1
6992-8721	1	-1	-1	-1	-1	-1	-1	-1	4	-1	-1	-1	1	-1
6964-8759	2	-1	-1	1	-1	-1	-1	-1	5	-1	-1	-1	1	-1
6964-8759-R	2	-1	-1	-1	-1	-1	-1	-1	5	-1	-1	-1	1	-1
6932-8799	-1	-1	-1	-1	-1	-1	-1	-1	2	-1	-1	-1	-1	-1
6896-8838	1	-1	-1	-1	-1	-1	-1	-1	3	-1	-1	-1	1	-1
6864-8881	-1	-1	-1	-1	-1	-1	-1	-1	2	-1	-1	-1	-1	-1
6832-8926	1	-1	-1	-1	-1	-1	-1	-1	2	-1	-1	-1	1	-1
6804-8957	1	-1	-1	-1	-1	-1	-1	-1	2	-1	-1	-1	-1	-1
6772-8990	3	-1	-1	1	-1	-1	-1	-1	9	-1	-1	-1	3	-1
6732-9038	2	-1	-1	-1	-1	-1	-1	-1	5	-1	-1	-1	2	-1
6705-9078	1	-1	-1	-1	-1	-1	-1	-1	3	-1	-1	-1	1	-1
6672-9115	2	-1	-1	-1	-1	-1	-1	-1	4	-1	-1	-1	2	-1
6640-9148	2	-1	-1	1	-1	-1	-1	-1	6	-1	-1	-1	2	-1
6611-9192	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	2	-1
6567-9237	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
6544-9271	1	-1	-1	-1	-1	-1	-1	-1	2	-1	-1	-1	1	-1
7733-9021	2	-1	-1	-1	-1	-1	-1	-1	2	-1	-1	-1	2	-1
7702-9064	2	-1	-1	1	-1	-1	-1	-1	7	-1	-1	-1	2	-1
7702-9064-R	2	-1	-1	1	-1	-1	-1	-1	4	-1	-1	-1	2	-1
7676-9102	1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
7643-9151	2	-1	-1	1	-1	-1	-1	-1	5	-1	-1	-1	2	-1
7612-9194	2	-1	-1	1	-1	-1	-1	-1	4	-1	-1	-1	2	-1
7589-9232	2	-1	-1	-1	-1	-1	-1	-1	4	-1	-1	-1	2	-1
7551-9278	2	-1	-1	-1	-1	-1	-1	-1	3	-1	-1	-1	1	-1
7514-9316	2	-1	-1	-1	-1	-1	-1	-1	3	-1	-1	-1	1	-1
7485-9362	2	-1	-1	-1	-1	-1	-1	-1	3	-1	-1	-1	-1	-1
7531-9122	-1	-1	-1	-1	-1	-1	-1	-1	1	-1	-1	-1	-1	-1
7563-9076	4	-1	-1	2	-1	-1	-1	-1	11	-1	-1	-1	3	-1
7587-9038	3	-1	-1	1	-1	-1	-1	-1	5	-1	-1	-1	2	-1
7617-8993	1	-1	-1	-1	-1	-1	-1	-1	1	-1	-1	-1	-1	-1
7654-8952	1	-1	-1	-1	-1	-1	-1	-1	2	-1	-1	-1	1	-1
7968-8685	-1	-1	-1	-1	-1	-1	-1	-1	2	-1	-1	-1	-1	-1
7938-8725	1	-1	-1	-1	-1	-1	-1	-1	2	-1	-1	-1	-1	-1
7910-8772	2	-1	-1	-1	-1	-1	-1	-1	3	-1	-1	-1	2	-1
7910-8772-R	2	-1	-1	-1	-1	-1	-1	-1	3	-1	-1	-1	1	-1

	085 - LPH	086 - LBI	087 - MAR	088 - HBA	089 - THI	090 - HPB	091 - LBI	092 - LPH	093 - LA	094 - LBI	095 - MAR	096 - LPH	097 - HBA	098 - THI
7879-8809	2	-1	-1	-1	-1	-1	-1	-1	3	-1	-1	-1	1	-1
7851-8847	-1	-1	-1	1	-1	-1	-1	-1	3	-1	-1	-1	-1	-1
7819-8899	4	-1	-1	-1	-1	-1	-1	-1	9	-1	-1	-1	4	-1
7797-8938	2	-1	-1	1	-1	-1	-1	-1	5	-1	-1	-1	2	-1
7765-8984	-1	-1	-1	-1	-1	-1	-1	-1	3	-1	-1	-1	2	-1
7376-9331	1	-1	-1	-1	-1	-1	-1	-1	2	-1	-1	-1	-1	-1
7408-9289	1	-1	-1	-1	-1	-1	-1	-1	2	-1	-1	-1	-1	-1
7441-9246	2	-1	-1	1	-1	-1	-1	-1	7	-1	-1	-1	2	-1
7476-9202	1	-1	-1	2	-1	-1	-1	-1	8	-1	-1	-1	2	-1
7505-9165	3	-1	-1	2	-1	-1	-1	-1	5	-1	-1	-1	-1	-1
LMB-QA	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
LMB-QA	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1

	099 - LPH	100 - LPH	101 - MAR	102 - MBI	103 - LPH	104 - MAR	105 - ALK	106 - MBI	107 - MBI	108 - LPH	109 - MAR	110 - HBA	111 - MAR	112 - MBI
7032-8680	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	2	-1	-1
7057-8640	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
7086-8597	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	2	-1	-1
7118-8552	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	2	-1	-1
7152-8525	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	2	-1	4
7152-8525-R	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	2	-1	-1
7184-8486	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	2	-1	-1
7216-8447	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	2
7256-8447	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	1	-1	4
7294-8370	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	3
7325-8332	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
7353-8301	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	2	-1	-1
7391-8260	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	2	-1	-1
7429-8224	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	1	-1	3
7457-8189	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	2	-1	-1
7493-8109	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
7533-8109	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	1
7567-8071	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	1	-1	-1
7597-8039	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
6992-8721	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
6964-8759	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
6964-8759-R	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	1	-1	-1
6932-8799	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	2
6896-8838	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	2
6864-8881	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	1	-1	1
6832-8926	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	1
6804-8957	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	1
6772-8990	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	2	-1	-1
6732-9038	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	2	-1	2
6705-9078	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	5
6672-9115	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	2
6640-9148	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	2	-1	3
6611-9192	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	7
6567-9237	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	1	-1	2
6544-9271	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	6
7733-9021	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	1	-1	3
7702-9064	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	2	-1	-1
7702-9064-R	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	5
7676-9102	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	3
7643-9151	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	2	-1	4
7612-9194	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	2	-1	-1
7589-9232	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	2	-1	1
7551-9278	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	1	-1	-1
7514-9316	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	3
7485-9362	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	2
7531-9122	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
7563-9076	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	3	-1	-1
7587-9038	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	2	-1	4
7617-8993	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	1	-1	1
7654-8952	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
7968-8685	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
7938-8725	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
7910-8772	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
7910-8772-R	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	1

	099 - LPH	100 - LPH	101 - MAR	102 - MBI	103 - LPH	104 - MAR	105 - ALK	106 - MBI	107 - MBI	108 - LPH	109 - MAR	110 - HBA	111 - MAR	112 - MBI
7879-8809	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	2
7851-8847	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	1
7819-8899	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	3	-1	-1
7797-8938	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	2	-1	-1
7765-8984	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	3	-1	2
7376-9331	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	2
7408-9289	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
7441-9246	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	1	-1	-1
7476-9202	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	2	-1	-1
7505-9165	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	2	-1	3
LMB-QA	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
LMB-QA	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1

	113 -HBA	114 - MBI	115 - MBI	116 - MAR	117 - HA	118 - MPH	119 - HBA	120 - THI	121 - MPH	122 - MPH	123 - MPH	124 - MBI	125 - HAR	126 - MPH
7032-8680	2	7	4	-1	9	-1	3	-1	-1	-1	-1	-1	-1	-1
7057-8640	1	2	1	-1	17	-1	2	-1	-1	-1	-1	-1	-1	-1
7086-8597	2	2	1	-1	38	-1	2	-1	-1	-1	-1	-1	-1	-1
7118-8552	3	4	2	-1	72	-1	4	-1	-1	-1	-1	-1	-1	-1
7152-8525	2	4	3	-1	18	-1	2	-1	-1	-1	-1	-1	-1	-1
7152-8525-R	2	5	3	-1	18	-1	3	-1	-1	-1	-1	-1	-1	-1
7184-8486	2	8	5	-1	9	-1	4	-1	-1	-1	-1	-1	-1	-1
7216-8447	1	2	1	-1	25	-1	2	-1	-1	-1	-1	-1	-1	-1
7256-8447	-1	6	4	-1	11	-1	2	-1	-1	-1	-1	-1	-1	-1
7294-8370	-1	4	3	-1	12	-1	2	-1	-1	-1	-1	-1	-1	-1
7325-8332	-1	2	1	-1	9	-1	1	-1	-1	-1	-1	-1	-1	-1
7353-8301	2	3	2	-1	53	-1	3	-1	-1	-1	-1	-1	-1	-1
7391-8260	2	4	3	-1	36	-1	2	-1	-1	-1	-1	-1	-1	-1
7429-8224	-1	4	3	-1	7	-1	1	-1	-1	-1	-1	-1	-1	-1
7457-8189	1	1	-1	-1	34	-1	2	-1	-1	-1	-1	-1	-1	-1
7493-8109	-1	1	-1	-1	13	-1	1	-1	-1	-1	-1	-1	-1	-1
7533-8109	-1	2	1	-1	18	-1	2	-1	-1	-1	-1	-1	-1	-1
7567-8071	-1	1	-1	-1	6	-1	1	-1	-1	-1	-1	-1	-1	-1
7597-8039	-1	3	2	-1	6	-1	1	-1	-1	-1	-1	-1	-1	-1
6992-8721	-1	2	-1	-1	31	-1	2	-1	-1	-1	-1	-1	-1	-1
6964-8759	2	1	-1	-1	19	-1	3	-1	-1	-1	-1	-1	-1	-1
6964-8759-R	-1	2	-1	-1	23	-1	2	-1	-1	-1	-1	-1	-1	-1
6932-8799	-1	2	1	-1	9	-1	2	-1	-1	-1	-1	-1	-1	-1
6896-8838	1	3	2	-1	38	-1	2	-1	-1	-1	-1	-1	-1	-1
6864-8881	3	1	-1	-1	26	-1	1	-1	-1	-1	-1	-1	-1	-1
6832-8926	3	1	-1	-1	24	-1	1	-1	-1	-1	-1	-1	-1	-1
6804-8957	3	2	-1	-1	15	-1	1	-1	-1	-1	-1	-1	-1	-1
6772-8990	3	7	4	-1	76	-1	3	-1	-1	-1	-1	-1	-1	-1
6732-9038	2	2	1	-1	32	-1	2	-1	-1	-1	-1	-1	-1	-1
6705-9078	-1	5	3	-1	4	-1	2	-1	-1	-1	-1	-1	-1	-1
6672-9115	4	2	1	-1	30	-1	2	-1	-1	-1	-1	-1	-1	-1
6640-9148	3	3	2	-1	58	-1	3	-1	-1	-1	-1	-1	-1	-1
6611-9192	2	7	4	-1	2	-1	1	-1	-1	-1	-1	-1	-1	-1
6567-9237	-1	3	2	-1	1	-1	-1	-1	-1	-1	-1	-1	-1	-1
6544-9271	2	7	4	-1	21	-1	1	-1	-1	-1	-1	-1	-1	-1
7733-9021	2	3	2	-1	35	-1	2	-1	-1	-1	-1	-1	-1	-1
7702-9064	2	5	3	-1	54	-1	2	-1	-1	-1	-1	-1	-1	-1
7702-9064-R	2	5	3	-1	43	-1	2	-1	-1	-1	-1	-1	-1	-1
7676-9102	2	4	2	-1	14	-1	2	-1	-1	-1	-1	-1	-1	-1
7643-9151	2	4	3	-1	44	-1	2	-1	-1	-1	-1	-1	-1	-1
7612-9194	2	4	2	-1	34	-1	2	-1	-1	-1	-1	-1	-1	-1
7589-9232	2	2	1	-1	21	-1	2	-1	-1	-1	-1	-1	-1	-1
7551-9278	2	3	2	-1	13	-1	2	-1	-1	-1	-1	-1	-1	-1
7514-9316	1	3	2	-1	21	-1	2	-1	-1	-1	-1	-1	-1	-1
7485-9362	2	3	2	-1	33	-1	2	-1	-1	-1	-1	-1	-1	-1
7531-9122	-1	-1	-1	-1	7	-1	-1	-1	-1	-1	-1	-1	-1	-1
7563-9076	4	6	4	-1	112	-1	4	-1	-1	-1	-1	-1	-1	-1
7587-9038	3	5	3	-1	58	-1	6	-1	-1	-1	-1	-1	-1	-1
7617-8993	-1	1	-1	-1	12	-1	1	-1	-1	-1	-1	-1	-1	-1
7654-8952	-1	1	-1	-1	16	-1	1	-1	-1	-1	-1	-1	-1	-1
7968-8685	-1	-1	-1	-1	9	-1	1	-1	-1	-1	-1	-1	-1	-1
7938-8725	1	-1	-1	-1	7	-1	1	-1	-1	-1	-1	-1	-1	-1
7910-8772	2	3	2	-1	25	-1	2	-1	-1	-1	-1	-1	-1	-1
7910-8772-R	1	2	-1	-1	23	-1	1	-1	-1	-1	-1	-1	-1	-1

	113 -HBA	114 - MBI	115 - MBI	116 - MAR	117 - HA	118 - MPH	119 - HBA	120 - THI	121 - MPH	122 - MPH	123 - MPH	124 - MBI	125 - HAR	126 - MPH
7879-8809	1	2	1	-1	14	-1	1	-1	-1	-1	-1	-1	-1	-1
7851-8847	1	1	-1	-1	7	-1	1	-1	-1	-1	-1	-1	-1	-1
7819-8899	3	2	1	-1	48	-1	3	-1	-1	-1	-1	-1	-1	-1
7797-8938	1	2	-1	-1	7	-1	2	-1	-1	-1	-1	-1	-1	-1
7765-8984	4	2	1	-1	16	-1	2	-1	-1	-1	-1	-1	-1	-1
7376-9331	-1	2	1	-1	11	-1	1	-1	-1	-1	-1	-1	-1	-1
7408-9289	1	-1	-1	-1	12	-1	1	-1	-1	-1	-1	-1	-1	-1
7441-9246	3	2	1	-1	28	-1	2	-1	-1	-1	-1	-1	-1	-1
7476-9202	2	2	-1	-1	22	-1	2	-1	-1	-1	-1	-1	-1	-1
7505-9165	2	4	2	-1	21	-1	2	-1	-1	-1	-1	-1	-1	-1
LMB-QA	2	-1	-1	-1	2	-1	1	-1	-1	-1	-1	-1	-1	-1
LMB-QA	-1	-1	-1	-1	2	-1	-1	-1	-1	-1	-1	-1	-1	-1

	127 - MPH	128 - MPH	129 - HAR	130 - HAR	131 - MPH	132 - ALK	133 - HAR	134 - HAR	135 - MPH	136 - MPH	137 - HBI	138 - HBI	139 - HPH	140 - HPH
7032-8680	-1	-1	-1	-1	-1	5	1	-1	-1	-1	-1	-1	-1	-1
7057-8640	-1	-1	-1	-1	-1	3	-1	1	-1	-1	-1	-1	-1	-1
7086-8597	-1	-1	-1	-1	-1	5	-1	-1	-1	-1	-1	-1	-1	-1
7118-8552	-1	-1	-1	-1	-1	4	1	-1	-1	-1	-1	-1	-1	-1
7152-8525	-1	-1	-1	-1	-1	5	-1	-1	-1	-1	-1	-1	-1	-1
7152-8525-R	-1	-1	-1	-1	-1	3	-1	1	-1	-1	1	-1	-1	-1
7184-8486	-1	-1	-1	-1	-1	5	-1	-1	-1	-1	-1	-1	-1	-1
7216-8447	-1	-1	-1	-1	-1	3	-1	-1	-1	-1	-1	-1	-1	-1
7256-8447	-1	-1	-1	-1	-1	2	-1	-1	-1	-1	-1	-1	-1	-1
7294-8370	-1	-1	-1	-1	-1	1	-1	-1	-1	-1	-1	-1	-1	-1
7325-8332	-1	-1	-1	-1	-1	1	-1	-1	-1	-1	-1	-1	-1	-1
7353-8301	-1	-1	-1	-1	-1	5	-1	1	-1	-1	-1	-1	-1	-1
7391-8260	-1	-1	-1	-1	-1	4	1	-1	-1	-1	-1	-1	-1	-1
7429-8224	-1	-1	-1	-1	-1	1	-1	-1	-1	-1	-1	-1	-1	-1
7457-8189	-1	-1	-1	-1	-1	5	-1	-1	-1	-1	-1	-1	-1	-1
7493-8109	-1	-1	-1	-1	-1	1	-1	-1	-1	-1	-1	-1	-1	-1
7533-8109	-1	-1	-1	-1	-1	2	-1	-1	-1	-1	-1	-1	-1	-1
7567-8071	-1	-1	-1	-1	-1	1	-1	-1	-1	-1	-1	-1	-1	-1
7597-8039	-1	-1	-1	-1	-1	4	-1	-1	-1	-1	-1	-1	-1	-1
6992-8721	-1	-1	-1	-1	-1	3	1	-1	-1	-1	-1	-1	-1	-1
6964-8759	-1	-1	-1	-1	-1	2	-1	-1	-1	-1	-1	-1	-1	-1
6964-8759-R	-1	-1	-1	-1	-1	2	-1	-1	-1	-1	-1	-1	-1	-1
6932-8799	-1	-1	-1	-1	-1	2	-1	-1	-1	-1	-1	-1	-1	-1
6896-8838	-1	-1	-1	-1	-1	2	-1	1	-1	-1	-1	-1	-1	-1
6864-8881	-1	-1	-1	-1	-1	7	-1	1	-1	-1	-1	-1	-1	-1
6832-8926	-1	-1	-1	-1	-1	5	-1	-1	-1	-1	-1	-1	-1	-1
6804-8957	-1	-1	-1	-1	-1	4	-1	-1	-1	-1	-1	-1	-1	-1
6772-8990	-1	-1	-1	-1	-1	4	-1	-1	-1	-1	-1	-1	-1	-1
6732-9038	-1	-1	-1	-1	-1	4	-1	-1	-1	-1	-1	-1	-1	-1
6705-9078	-1	-1	-1	-1	-1	3	-1	-1	-1	-1	-1	-1	-1	-1
6672-9115	-1	-1	-1	-1	-1	5	-1	-1	-1	-1	-1	-1	-1	-1
6640-9148	-1	-1	-1	-1	-1	5	-1	-1	-1	-1	-1	-1	-1	-1
6611-9192	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
6567-9237	-1	-1	-1	-1	-1	2	-1	-1	-1	-1	-1	-1	-1	-1
6544-9271	-1	-1	-1	-1	-1	4	-1	-1	-1	-1	-1	-1	-1	-1
7733-9021	-1	-1	-1	-1	-1	2	-1	-1	-1	-1	-1	-1	-1	-1
7702-9064	-1	-1	-1	-1	-1	6	-1	-1	-1	-1	-1	-1	-1	-1
7702-9064-R	-1	-1	-1	-1	-1	4	-1	-1	-1	-1	-1	-1	-1	-1
7676-9102	-1	-1	-1	-1	-1	4	-1	-1	-1	-1	-1	-1	-1	-1
7643-9151	-1	-1	-1	-1	-1	5	-1	-1	-1	-1	-1	-1	-1	-1
7612-9194	-1	-1	-1	-1	-1	5	-1	-1	-1	-1	-1	-1	-1	-1
7589-9232	-1	-1	-1	-1	-1	4	-1	-1	-1	-1	-1	-1	-1	-1
7551-9278	-1	-1	-1	-1	-1	4	-1	1	-1	-1	-1	-1	-1	-1
7514-9316	-1	-1	-1	-1	-1	4	-1	1	-1	-1	-1	-1	-1	-1
7485-9362	-1	-1	-1	-1	-1	4	-1	-1	-1	-1	-1	-1	-1	-1
7531-9122	-1	-1	-1	-1	-1	4	-1	-1	-1	-1	-1	-1	-1	-1
7563-9076	-1	-1	-1	-1	-1	9	-1	-1	-1	-1	-1	-1	-1	-1
7587-9038	-1	-1	-1	-1	-1	6	-1	1	-1	-1	-1	-1	-1	-1
7617-8993	-1	-1	-1	-1	-1	2	-1	-1	-1	-1	-1	-1	-1	-1
7654-8952	-1	-1	-1	-1	-1	1	-1	1	-1	-1	-1	-1	-1	-1
7968-8685	-1	-1	-1	-1	-1	4	-1	1	-1	-1	-1	-1	-1	-1
7938-8725	-1	-1	-1	-1	-1	3	-1	-1	-1	-1	-1	-1	-1	-1
7910-8772	-1	-1	-1	-1	-1	4	-1	-1	-1	-1	-1	-1	-1	-1
7910-8772-R	-1	-1	-1	-1	-1	4	-1	-1	-1	-1	-1	-1	-1	-1

	127 - MPH	128 - MPH	129 - HAR	130 - HAR	131 - MPH	132 - ALK	133 - HAR	134 - HAR	135 - MPH	136 - MPH	137 - HBI	138 - HBI	139 - HPH	140 - HPH
7879-8809	-1	-1	-1	-1	-1	2	-1	-1	-1	-1	-1	-1	-1	-1
7851-8847	-1	-1	-1	-1	-1	8	-1	-1	-1	-1	-1	-1	-1	-1
7819-8899	-1	-1	-1	-1	-1	8	-1	-1	-1	-1	-1	-1	-1	-1
7797-8938	-1	-1	-1	-1	-1	4	-1	-1	-1	-1	-1	-1	-1	-1
7765-8984	-1	-1	-1	-1	-1	2	-1	1	-1	-1	-1	-1	-1	-1
7376-9331	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
7408-9289	-1	-1	-1	-1	-1	3	-1	-1	-1	-1	-1	-1	-1	-1
7441-9246	-1	-1	-1	-1	-1	2	-1	1	-1	-1	-1	-1	-1	-1
7476-9202	-1	-1	-1	-1	-1	2	-1	-1	-1	-1	-1	-1	-1	-1
7505-9165	-1	-1	-1	-1	-1	5	-1	-1	-1	-1	-1	-1	-1	-1
LMB-QA	-1	-1	-1	-1	-1	2	-1	-1	-1	-1	-1	-1	-1	-1
LMB-QA	-1	-1	-1	-1	-1	2	-1	-1	-1	-1	-1	-1	-1	-1

	141 - HBI	142 - HPH	143 - HA	144 - HBI	145 - HBA	146 - HPH	147 - HBI	148 - HPH	149 - HBI	150 - HPH	151 - HBI	152 - HPH	153 - HPH	154 - HPH
7032-8680	-1	-1	47	-1	10	-1	-1	-1	-1	-1	-1	-1	-1	-1
7057-8640	-1	-1	24	-1	3	-1	-1	-1	-1	-1	1	-1	-1	-1
7086-8597	-1	-1	37	-1	4	-1	-1	-1	-1	-1	-1	-1	1	-1
7118-8552	-1	-1	55	-1	10	-1	-1	-1	-1	-1	-1	-1	1	-1
7152-8525	-1	-1	24	-1	6	-1	-1	-1	-1	-1	-1	-1	-1	-1
7152-8525-R	-1	-1	37	-1	7	-1	-1	-1	-1	-1	-1	-1	-1	-1
7184-8486	1	-1	44	-1	9	-1	-1	-1	-1	-1	-1	-1	1	-1
7216-8447	-1	-1	17	-1	2	-1	-1	-1	-1	-1	-1	-1	-1	-1
7256-8447	-1	-1	22	-1	6	-1	-1	-1	-1	-1	-1	-1	-1	-1
7294-8370	-1	-1	15	-1	4	-1	-1	-1	-1	-1	-1	-1	-1	-1
7325-8332	-1	-1	12	-1	2	-1	-1	-1	-1	-1	-1	-1	-1	-1
7353-8301	-1	-1	52	-1	1	-1	-1	-1	-1	-1	-1	-1	-1	-1
7391-8260	-1	-1	34	-1	4	-1	-1	-1	-1	-1	-1	-1	-1	-1
7429-8224	-1	-1	5	-1	3	-1	-1	-1	-1	-1	-1	-1	-1	-1
7457-8189	1	-1	41	-1	3	-1	-1	-1	-1	-1	-1	-1	-1	-1
7493-8109	-1	-1	14	-1	2	-1	-1	-1	-1	-1	-1	-1	-1	-1
7533-8109	-1	-1	20	-1	2	-1	-1	-1	-1	-1	-1	-1	-1	-1
7567-8071	-1	-1	10	-1	3	-1	-1	-1	-1	-1	-1	-1	-1	-1
7597-8039	-1	-1	13	-1	3	-1	-1	-1	-1	-1	-1	-1	-1	-1
6992-8721	-1	-1	20	-1	2	-1	-1	-1	-1	-1	-1	-1	-1	-1
6964-8759	-1	-1	21	-1	2	-1	-1	-1	-1	-1	1	-1	1	-1
6964-8759-R	-1	-1	22	-1	2	-1	-1	-1	-1	-1	-1	-1	1	-1
6932-8799	-1	-1	11	-1	3	-1	-1	-1	-1	-1	-1	-1	1	-1
6896-8838	-1	-1	17	-1	2	-1	-1	-1	-1	-1	-1	-1	1	-1
6864-8881	-1	-1	8	-1	2	-1	-1	-1	-1	-1	1	1	1	-1
6832-8926	-1	-1	16	-1	2	-1	-1	-1	-1	-1	2	-1	1	-1
6804-8957	-1	-1	17	-1	4	-1	-1	-1	-1	-1	1	-1	-1	-1
6772-8990	-1	-1	71	-1	1	-1	-1	-1	-1	-1	3	-1	1	-1
6732-9038	-1	-1	29	-1	3	-1	-1	-1	-1	-1	2	-1	1	-1
6705-9078	-1	-1	23	-1	-1	-1	-1	-1	-1	-1	1	-1	1	-1
6672-9115	-1	-1	24	-1	3	-1	-1	-1	-1	-1	-1	-1	1	-1
6640-9148	-1	-1	40	-1	1	-1	-1	-1	-1	-1	2	-1	2	-1
6611-9192	-1	-1	4	-1	2	-1	-1	-1	-1	-1	-1	-1	-1	-1
6567-9237	-1	-1	5	-1	-1	-1	-1	-1	-1	-1	1	-1	-1	-1
6544-9271	-1	-1	12	-1	2	-1	-1	-1	-1	-1	2	-1	-1	-1
7733-9021	-1	-1	27	-1	3	-1	-1	-1	-1	-1	-1	-1	-1	-1
7702-9064	-1	-1	39	-1	4	-1	-1	-1	-1	-1	-1	-1	-1	-1
7702-9064-R	-1	-1	25	-1	3	-1	-1	-1	-1	-1	-1	-1	-1	-1
7676-9102	-1	-1	13	-1	2	-1	-1	-1	-1	-1	2	-1	-1	-1
7643-9151	-1	-1	39	-1	4	-1	-1	-1	-1	-1	-1	-1	-1	-1
7612-9194	-1	-1	26	-1	4	-1	-1	-1	-1	-1	-1	-1	-1	-1
7589-9232	-1	-1	34	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
7551-9278	-1	-1	20	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
7514-9316	-1	-1	24	-1	3	-1	-1	-1	-1	-1	1	-1	-1	-1
7485-9362	-1	-1	18	-1	3	-1	-1	-1	-1	-1	1	-1	-1	-1
7531-9122	-1	-1	8	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
7563-9076	2	-1	85	-1	14	-1	-1	-1	-1	-1	-1	-1	-1	-1
7587-9038	-1	-1	29	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
7617-8993	-1	-1	11	-1	2	-1	-1	-1	-1	-1	-1	-1	-1	-1
7654-8952	-1	-1	5	-1	2	-1	-1	-1	-1	-1	-1	-1	-1	-1
7968-8685	-1	-1	11	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
7938-8725	-1	-1	10	-1	2	-1	-1	-1	-1	-1	-1	-1	-1	-1
7910-8772	-1	-1	19	-1	3	-1	-1	-1	-1	-1	-1	-1	-1	-1
7910-8772-R	-1	-1	18	-1	3	-1	-1	-1	-1	-1	-1	-1	-1	-1

	141 - HBI	142 - HPH	143 - HA	144 - HBI	145 - HBA	146 - HPH	147 - HBI	148 - HPH	149 - HBI	150 - HPH	151 - HBI	152 - HPH	153 - HPH	154 - HPH
7879-8809	-1	-1	18	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
7851-8847	-1	-1	18	-1	2	-1	-1	-1	-1	-1	-1	-1	-1	-1
7819-8899	1	-1	28	1	1	-1	-1	-1	-1	-1	-1	-1	-1	-1
7797-8938	-1	-1	26	-1	6	-1	-1	-1	-1	-1	-1	1	-1	-1
7765-8984	-1	-1	7	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
7376-9331	-1	-1	10	-1	2	-1	-1	-1	-1	-1	1	-1	-1	-1
7408-9289	-1	-1	10	-1	2	-1	-1	-1	-1	-1	-1	-1	-1	-1
7441-9246	-1	-1	31	-1	3	-1	-1	-1	-1	-1	-1	-1	-1	-1
7476-9202	-1	-1	27	-1	3	-1	-1	-1	-1	-1	-1	-1	-1	-1
7505-9165	-1	-1	26	-1	3	-1	-1	-1	-1	-1	1	-1	-1	-1
LMB-QA	-1	-1	6	-1	1	-1	-1	-1	-1	-1	1	1	-1	-1
LMB-QA	-1	-1	1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1

SOIL GAS HYDROCARBONS  
 (SGH) by GC/MS  
 Mom and Son Project

	155 - HPH	156 - HBI	157 - HAR	158 - HBA	159 - HBA	160 - HBI	161 - HA	162 - HPH
7032-8680	2	-1	-1	48	-1	-1	29	-1
7057-8640	3	-1	-1	25	-1	-1	28	-1
7086-8597	-1	-1	-1	29	-1	-1	34	-1
7118-8552	-1	-1	1	44	-1	-1	52	-1
7152-8525	-1	-1	-1	24	-1	-1	28	-1
7152-8525-R	-1	-1	-1	29	-1	-1	34	-1
7184-8486	-1	-1	-1	38	-1	-1	43	-1
7216-8447	-1	-1	-1	19	-1	-1	11	-1
7256-8447	-1	-1	1	24	-1	-1	27	-1
7294-8370	3	-1	-1	17	-1	-1	20	-1
7325-8332	1	-1	-1	15	-1	-1	17	-1
7353-8301	-1	-1	-1	43	-1	-1	48	-1
7391-8260	-1	-1	-1	29	-1	-1	34	-1
7429-8224	-1	-1	1	13	-1	-1	7	-1
7457-8189	-1	-1	-1	33	-1	-1	37	-1
7493-8109	-1	-1	-1	17	-1	-1	19	-1
7533-8109	-1	-1	-1	19	-1	-1	22	-1
7567-8071	-1	-1	-1	14	-1	-1	16	-1
7597-8039	-1	-1	-1	16	-1	-1	10	-1
6992-8721	-1	-1	-1	22	-1	-1	26	-1
6964-8759	-1	-1	1	21	-1	-1	24	-1
6964-8759-R	-1	-1	-1	22	-1	-1	25	-1
6932-8799	-1	-1	-1	8	-1	-1	17	-1
6896-8838	1	-1	-1	20	-1	-1	12	-1
6864-8881	3	-1	-1	27	-1	-1	29	-1
6832-8926	-1	-1	-1	24	-1	-1	14	-1
6804-8957	3	-1	1	22	-1	-1	12	-1
6772-8990	-1	-1	-1	48	-1	-1	28	-1
6732-9038	-1	-1	-1	27	-1	-1	32	3
6705-9078	-1	-1	-1	23	-1	-1	24	-1
6672-9115	-1	-1	1	26	-1	-1	15	-1
6640-9148	-1	-1	-1	34	1	-1	40	1
6611-9192	-1	-1	1	18	-1	-1	23	-1
6567-9237	-1	-1	1	11	-1	-1	5	-1
6544-9271	-1	3	-1	19	-1	-1	11	-1
7733-9021	-1	-1	-1	28	-1	-1	16	-1
7702-9064	3	-1	-1	31	-1	-1	18	-1
7702-9064-R	3	-1	1	24	-1	-1	13	-1
7676-9102	-1	-1	-1	19	-1	-1	23	-1
7643-9151	-1	-1	1	34	-1	-1	20	-1
7612-9194	3	-1	-1	25	-1	-1	30	-1
7589-9232	-1	-1	-1	29	-1	-1	30	-1
7551-9278	1	-1	1	22	-1	-1	11	-1
7514-9316	-1	-1	-1	25	-1	-1	14	-1
7485-9362	-1	-1	-1	23	-1	-1	13	-1
7531-9122	-1	-1	-1	12	-1	-1	6	-1
7563-9076	-1	-1	1	83	-1	-1	84	-1
7587-9038	1	1	1	31	-1	-1	17	-1
7617-8993	-1	-1	-1	17	-1	-1	20	-1
7654-8952	-1	-1	1	16	-1	-1	8	-1
7968-8685	-1	-1	-1	18	-1	-1	10	-1
7938-8725	1	-1	-1	17	-1	-1	20	-1
7910-8772	3	-1	-1	24	-1	-1	25	-1
7910-8772-R	-1	-1	1	22	-1	-1	14	-1

SOIL GAS HYDROCARBONS  
 (SGH) by GC/MS  
 Mom and Son Project

	155 - HPH	156 - HBI	157 - HAR	158 - HBA	159 - HBA	160 - HBI	161 - HA	162 - HPH
7879-8809	-1	-1	-1	23	-1	-1	26	-1
7851-8847	-1	-1	1	20	-1	-1	13	-1
7819-8899	-1	-1	1	43	-1	-1	48	-1
7797-8938	-1	-1	-1	28	-1	-1	32	-1
7765-8984	-1	-1	-1	18	-1	-1	22	-1
7376-9331	-1	-1	-1	15	-1	-1	8	-1
7408-9289	-1	-1	-1	15	-1	-1	17	-1
7441-9246	-1	-1	-1	28	-1	-1	17	-1
7476-9202	-1	-1	-1	25	-1	-1	29	-1
7505-9165	-1	-1	-1	25	-1	-1	15	-1
LMB-QA	-1	-1	-1	14	-1	-1	17	-1
LMB-QA	-1	3	-1	4	-1	-1	4	-1