TK - TELKWA 83(1)A

Crows Nest Resources

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VOLUME 1

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March 23, 1984

Ministry of Energy, Mines & Petroleum Resources
617 Government Street
Victoria, B.C.
V8V 1X4

Attention: Mr. P. Hagen
Coal Administrator

Dear Sir:

Enclosed please find our report on the Telkwa Project.

This report has been prepared by Mr. D. Handy and Mr. S. Cameron, both of whom are employed by Crows Nest Resources Limited as geologists.

Mr. D. Handy, Honours B.Sc., graduated in Geology from the University of Waterloo in 1977. Prior to his graduation, Mr. Handy worked as an assistant for two geotechnical companies and after graduation as a geologist for a major company in Saskatchewan. Mr. Handy has been employed by Crows Nest Resources Limited as a Project Geologist since 1979.

Mr. S.Cameron,B.Sc., in Geology graduated from the University of Calgary in 1981. Prior to graduation Mr. Cameron worked as an assistant for a major exploration company in the North West Territories. He also worked for Crows Nest Resources Limited as a geological assistant in 1980. Mr. Cameron has been employed by Crows Nest Resources Limited as a Geologist since May 1981.

In my opinion, all of these personnel are fully qualified, by training and experience to prepare this report and this account of work done under their direct supervision.

Yours very truly,

H.G. Rushton

H.G. Rushton
Vice President - Development

Enclosure

1.0 Summary

The Telkwa Project is contained within 38 B.C. Coal Licences covering 9713 hectares and 5 Freehold Lots covering 1295 hectares. Shell Canada Resources Limited holds 13 of the 38 Licences and 2 of the 5 Freehold Lots under option agreements. The remainder of the licences are held by Shell Canada Resources Limited and the other 3 Freehold Lots are owned by SCRL. Crows Nest Resources Limited, which is a wholly owned subsidiary of SCRL is the operator of the project.

The Telkwa licences lie in close proximity to the Canadian National Railway and are 360 km by road east of the port of Prince Rupert. Existing infrastructure, the proximity of a coal handling port and the good quality of the coal make Telkwa an attractive project.

Early Cretaceous sedimentary rocks of the Skeena Group contain significant thicknesses (single seams up to 7.6 metres, aggregate seam thicknesses of up to 30 metres) of low ash, high grade, medium to high volatile bituminous coal amenable to thermal use.

Lack of outcrop exposure has necessitated that CNRL undertake an intensive drilling program since 1979 to delineate the deposit. Stratigraphic and structural interpretation of the Telkwa deposit is based largely on drill core data accompanied by a comprehensive suite of downhole geophysical logs.

The 1983 summer and winter drilling programs were undertaken to further delineate the East and West Goathorn areas of the deposit, and to verify structural and stratigraphic interpretations made on the basis of 1982 and previous drilling programs.

The 1983 exploration program included the construction of 4.8 km of new access road. Sixty-nine NQ diamond drill holes and four six inch diameter core holes were completed. A 1.76 km length seismic refraction survey was conducted to delineate depth to bedrock in problem areas at West Goathorn. A test pit was excavated to enable bulk samples of seams 2 to 10 to be obtained for washability tests. Geological and geotechnical data was also gathered from this excavation. Four six inch diameter core holes were drilled to provide further bulk samples of the seams from the north and south ends of the deposit.

The 1983 exploration program further defined the Goathorn Creek reserve area of low ratio coal indicated by the 1982 drilling program. The presence of Seam 1 at surface mineable depths was found at the north end of the deposit. This area must be drilled further to fully define the extent of this additional reserve.

The total field expenditure for 1983 was $2,019,500. Of this total $854,100 is being applied to the coal licences covered by this report. The remainder was spent on Freehold land owned by Shell Canada Resources Limited.

2.0 Introduction

2.1 Location and Access

Enclosure 1-1: Index Map

Enclosure 1-2: Access Map

The Telkwa Project is located 15 km south of the town of Smithers in West Central British Columbia; Coast Land District 5,NTS Map Sheet 93L/11. The coal licences lie north of the Telkwa River and east of Pine Creek and south of the Telkwa River along Goathorn Creek and Cabinet Creek. The center of the licence block is situated at N. Lat 54°35'/N. Long 127° 8'. Smithers is 360 km from the port of Prince Rupert along the CNR line and Highway 16. The Telkwa Project is 10 km from this rail line and mostly accessible by good gravel road.

2.2 Tenure

The Telkwa Project licences are subdivided into three groups: Telkwa North, Telkwa South and Bulkley Valley Coal Limited Option. Such a subdivision is necessary for land tenure purposes.

GROUP NUMBER	LICENCE NUMBERS
327	4271, 4272, 4274-4281, 4283, 5305-5307, 6040
325	4260-4262, 4264, 4265, 4267, 4269, 4270, 4282, 5389
Bulkley Valley Coal Limited Option 221	3709, 3710, 3875-3885

All licences are operated by Crows Nest Resources Limited. All licences are held by Shell Canada Resources Limited with the exception of those optioned from Bulkley Valley Coal Limited.

In addition, Shell Canada Resources Limited owns 3 freehold lots and options 2 freehold lots (Whalen Option) which are also included as part of the Telkwa Project.

Appendix 1 of this report contains a "Coal Land Disposition Map". Appendix 2 contains a tabulation of "B.C. Coal Land Tenure Standing" for each group of licences being renewed.

3.0 Regional Geology

Mesozoic successor basins developed in the Intermontane Belt between the Columbian and Pacific Orogens in the B.C. Cordillera. These deeply subsiding troughs usually had both marine and fresh water depositional environments. Fresh water lakes could have developed in areas of poor drainage and provided sites for thick peat accumulation. Coal bearing clastic sequences also accumulated in areas of dip-slip and strike-slip faulting in the troughs.

The Skeena Group successor basin is filled with interbedded marine and non-marine sedimentary and volcanic strata. This assemblage was deposited on the folded and faulted terrane of the Bowser Lake and older groups such as the Hazelton. Sediments of the Skeena Group are distinguishable from the Bowser Lake and Hazelton sediments by the presence of fine detrital muscovite. "In the Late Jurassic to Early Cretaceous, prior to deposition of the Skeena Group sediments, the Hazelton Group underwent a period of uplift, deformation and erosion. During the Mid Early Cretaceous, the sea readvanced from the west, in the area of Skeena Valley, inundating the non-marine, Late Lower Cretaceous coal basins such as Telkwa and Lake Kathlyn. The sediments of the Skeena Group were derived from an uplifted Pinchi-belt - Columbian Orogen. They were deposited in a southwesterly direction, across the Skeena Arch, which apparently had little influence on the shape of the basin receiving the Skeena Clastics".[1]

1 Tipper H.W. and Richards T.A., Jurassic Stratigraphy and History of North Central British Columbia, 1976, page 7.

Tipper and Richards (1976) have taken Sutherland Brown's (1960) subdivision from the Hazelton Group and applied it to the Skeena Group as follows: The Brian Boru Formation for the Early Cretaceous volcanics and the Red Rose Formation for the Late Jurassic to Early Cretaceous sediments.

4.0 Telkwa Geology

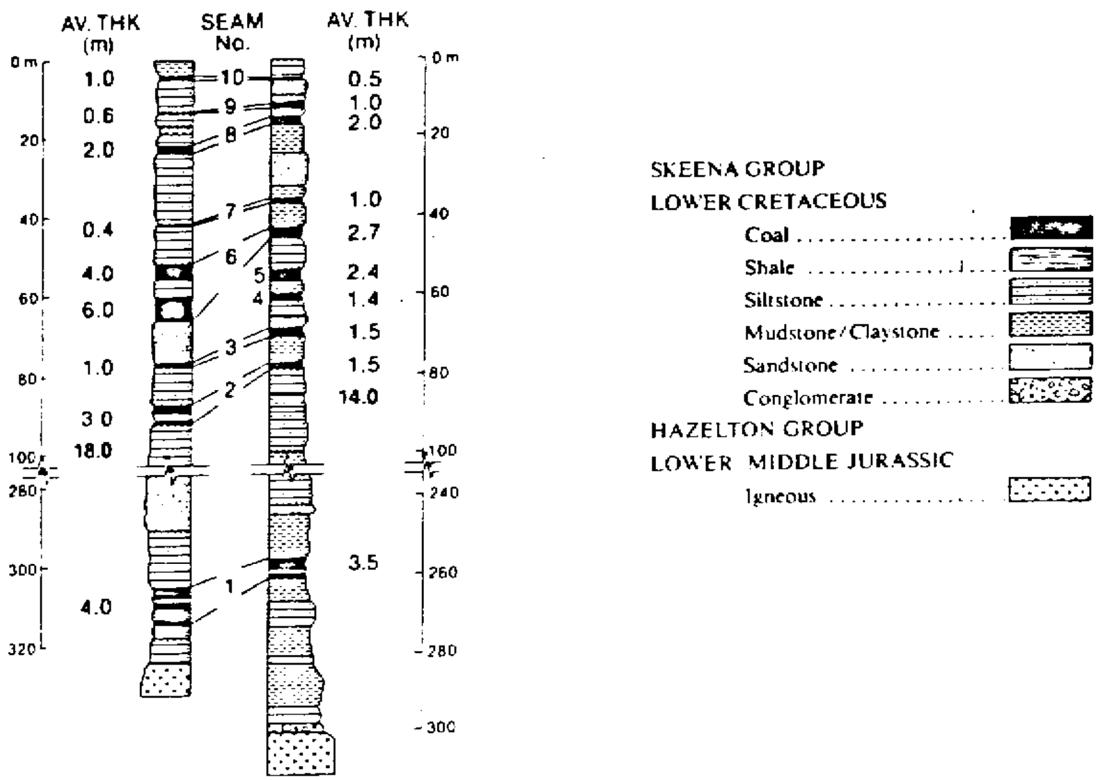
4.1 Stratigraphy

Figure 1: Telkwa Type Stratigraphic Section

The rocks of the Telkwa coal field consist of interbedded marine and non-marine sedimentary and volcanic strata of the Skeena Group. The sediments include a predominance of mudstone and siltstone with minor sandstone and shale, a basal conglomerate and coal. Volcanics are grey to green basaltic to rhyolitic breccias, tuffs and flows. The Hazelton volcanics are usually weathered to a deep reddish-purple at their contact with the overlying Skeena sediments. Porphyritic Tertiary intrusive rocks in the form of dykes and sills have been found over the property. A large intrusive plug forms a nonconformable contact with the Skeena sediments north of the Telkwa River. In the Telkwa area recent erosion has removed the coal-bearing sediments from the higher ridges leaving all or part of the sedimentary sequence preserved in topographic lows. Outcrops are usually found in stream valleys which have cut through the glacial drift cover. Few exposures occur away from the creeks until the higher ridges are reached and invariable these are volcanics of the Hazelton Group. The Skeena-Hazelton contact over most of the area is drift covered and heavily timbered making accurate delineation of the areal extent of the coal bearing sediments very difficult.

STRATIGRAPHIC SECTION

WEST GOATHORN EAST GOATHORN



Crowe Nest Resources Limited

TELKWA PROJECT

STRATIGRAPHIC SECTION

Figure 1

The Skeena Group stratigraphic section varies in thickness over the Telkwa area but probably does not exceed 500 metres. Laterally, individual beds can pinch out rapidly including coal beds as evidenced by drill hole TW82D-238.

A palynological study on two drill cores representing the Telkwa stratigraphic section indicates clastic deposition started in Neocomian times in a marine depositional environment. A marine regression occurred resulting in a fluvial flood plain environment with the deposition of Seam #1 or the #1 coal zone. The study indicates the rocks between Seam #1 and the upper coal zone were deposited in mainly a shallow, lower energy marine environment with the occasional regression/transgression cycle occurring. The upper coal zone from Seam #2 to #7 is believed to have been deposited in a deltaic environment supporting swamp and/or marsh vegetation.

The upper 3 seams #8,#9 and #10 appear to have been deposited in a coastal region periodically subjected to tidal incursions. Above Seam #10 the study shows an upland depositional environment in a fluvial regime indicating a major marine regression near the end of the Lower Cretaceous in Telkwa area. The Telkwa sediments exhibit numerous soft sediment deformation structures including rip up clasts, micro slump faults and load casts. Heavily bioturbated zones are common. Thin bentonitic clay layers (1 to 5 cm thick) are present at certain locations in several of the coal horizons. X-ray defraction indicates these clays to be kaolinitic in composition and not mixed layer "swelling clays".

4.2 Coal Stratigraphy

At least 14 individual coal seams exist in the Telkwa deposit.

Within the Goathorn Creek area 10 major correlatable seams have been identified. These are numbered 1 to 10 going stratigraphically up section. Average aggregate thickness of the upper 9 seams at Goathorn East (east of Goathorn Creek) is 14 metres. The upper 9 seams range individually from a thickness of 0.5 to 2.5 metres on average. West of Goathorn Creek individual coal intersections of up to 7.6 metres have been drilled. Seams #4 and #5 pinch out laterally in the Goathorn East area and are not present at Goathorn West. The remaining 7 seams thicken westward and average an aggregate thickness of 18 metres at Goathorn West. A distinct marker horizon occurs beneath Seam #2 on the gamma ray logs. This geophysical signature has been used as a datum line for seam correlation over the entire property. Seam #1 is situated some 100 to 150 metres below the gamma marker and averages 3.5 m in thickness over the property. Over the property individual coal seams develop splits, thickness changes over short lateral distances, and the seams exhibit an extremely undulating nature. These inconsistencies will require a very flexible approach to mining and coal preparation.

4.3 Structure

In the Goathorn Creek area, north-south to north/west-south/east trending normal and reverse faults have divided the property into several structural fault blocks. The majority of these faults have been interpreted from drilling data, stratum contours and air photo interpreted lineaments. These faults occur as zones with imbricates and splays as evidenced by coal seam repeats in some drill holes. Most of the faults are believed to be high angle (ie: dips greater than 75°). While some appear to originate in basement volcanics this is not necessarily the rule. The test pit excavation uncovered a number of small scale offsets (in the order of a few metres). These were not detected by closed space drilling (30 metres). A high frequency of faults of this nature can be expected throughout the property. Over the Goathorn East area, the beds strike from 345° to 025° and dip to the east within a 10° to 35° range.

The Goathorn West area shows a predominance of northwest - southeast trending normal faults as well as a shallow east-west trending syncline toward the northern end. Generally the west strata maintain a strike of 330° with dips to the north in the 10° to 30° range.

5.0 Summary of Previous Work

1979 - 1:10000 scale geological mapping
- bulldozer trenching
- road upgrading
- rotary drilling (4 holes)
- coal sampled and analyzed
- drill site reclamation

1980 - no exploration

1981 - 1:10000 scale geological mapping
- 1:5000 scale geological mapping
- road upgrading
- bulldozer trenching
- rotary drilling (7 holes)
- diamond drilling (1 hole)
- coal sampled and analyzed
- drill site reclamation
- geodetic location survey
- geophysical survey - EM37
- 1:5000 scale topographical maps constructed

1982 - 1:5000 scale geological mapping
- backhoe trenching
- road construction and upgrading
- rotary drilling
- diamond drilling
- coal sampled and analysed
- geophysical surveys - EM37
-                      - seismic refraction
                       - proton magnetometer
- geotechnical studies - piezometer installation
                       - soil sampling
                       - core logging
- 1:5000 scale topographical maps constructed
- 1:1000 scale topographical maps constructed
- 1:2000 scale topographical maps constructed
- road and drill site reclamation

6.0 Work done in 1983

- 1:1000 scale geological mapping (test pit)
- road construction
- diamond drilling-NQ and 6 inch diameter
- coal sampled and analysed
- seismic refraction survey
- geotechnical studies
  - piezometer installation
  - core logging
- test pit excavated
- 219 tonnes of coal bulk sampled from seven seams
- road and drill site reclamation
- test pit reclamation

The stratigraphic section was mapped in the test pit excavation.

A total of 4.8 km of new road was constructed, 1.6 km on Freehold Land, 3.2 km on licences covered by this report.

69 NQ diamond drill holes were completed on the property during 1983 for a total of 8175 metres. 39 of the diamond drill holes (5656 metres) are situated on licences covered by this report. The remaining holes are located on Freehold lots. All drill core has been lithologically logged. Selected core holes have been geotechnically logged in detail. CNRL's drill core storage facility is located at the site of Bulkley Valley Collieries Limited.

Four 6 inch diameter core holes were completed for a total of 403 metres. One of the four holes was collared on a licence covered by this report for a total of 142 metres. The other 3 holes were drilled on Freehold lots. Coal samples were sent to Birtley Laboratories in Calgary for analyses.

A test pit was excavated on Freehold land and from this pit 219 tonnes of coal from Seams #2, #3, #6, #7, #8, #9 and #10 was shipped to Birtley Laboratories for washability tests.

All pertinent drill holes and roads were surveyed. Additional 1:15000 scale air photos were taken as well as a set of true color photographs at a scale of 1:40000. Present 1:2000 and 1:5000 contour maps were updated and a new set of 1:5000 orthophotos was constructed.

1.76 km of seismic refraction was conducted on licences covered by this report.

12 Piezometers were installed in holes on both East and West Goathorn. Packer permeability tests were performed on 4 of the piezometer locations.

All disturbances including new roads, drill sites and the test pit were recontoured and seeded.

The total cost of the 1983 exploration work was $2,019,500. Of this figure, $854,100 is being applied to the licences reported herein.

Appendix 3 contains a copy of the Application to Extend Term of Licence which gives a detailed account of the amount and nature of expenditures applied to the three licence groups.

7.0 Test Pit

The test pit was excavated to obtain bulk coal samples from each of the upper 9 coal seams at Goathorn East for pilot plant washability tests and ultimately engineering design of a coal preparation plant. In addition, geotechnical data related to pit wall stability, hydrology, and mining equipment was gathered from this exercise.

7.1 Geology

Eleven NQ diamond holes were drilled on an east west line at a spacing of from 90 to 30 metres to determine to subcrop elevation and the structural geometry of Seams #2 to #10. Coal quality tests were performed to determine if the subcrop of each seam was oxidized.

Drilling indicated that Seam #4 and #5 pinched out laterally, therefore these seams were not sampled in the test pit. Enclosures 1-16 and 1-17 contain the test pit geological map and cross-section with bulk sample locations and test pit cross-section.

7.2 Equipment Used

One 631C Scraper

Two 631D Scrapers

One D8 Crawler Tractor

Two D9 Crawler Tractors

One Hydraulic Excavator

Reclamation work was done with a farm tractor, skidder and a small crawler tractor.

Coal bulk samples were shipped to Birtley Coal and Mineral Testing Limited in Calgary via 5 ton unit containers, 2 end dump gravel trucks and one belly dump gravel truck.

The duration of the test pit excavation from top soil removal to reclamation was from the end of June to the end of September. Approximately 145,000 cubic metres of material were moved, 40,000 cubic metres were rehandle material.

Seams #2,#3, #6, #7, #8, #9, #10 were all bulk sampled for a total of 219 tonnes. The pilot plant washability tests on these samples are ongoing at present. The engineering assessment of this data will be completed by August 1984.

7.3 Mining and Geotechnical Observations

Scrapers and crawler tractors appear to be a viable mining method at Telkwa. Approximately 10% of the interburden rock was difficult to rip with a D9 and may require blasting in a full scale mining operation. Backfilling the pit indicated an 8-10% swell factor can be anticipated.

The coal was very hard with clean hanging wall/footwall separations. In a practical mining situation dilution will be more significant than that experienced in the test pit.Factors influencing mining dilution will be the high frequency of small scale faults, the undulating nature of the seams and mining thin seams (0.30m to .50m) or split seams such as Seam #3.

Surface run-off was controlled by a small containment pond. Ground water flow was evident at several coal footwall contacts. An indepth hydrological study is presently underway.

Pit slope stability was extremely good, however the test pit excavation was at deepest in the order of 20 metres. Individual benches should stand well in excess of 45 degrees when mining down dip. A detailed engineering study is in progress to determine actual stability.

8.0 Mineability and Reserves

8.1 Goathorn Creek Area

The Goathorn Creek area of the Telkwa Project is the most attractive location for low-ratio open pit mineable coal. The upper 7 to 9 coal seams generally maintain thicknesses of 0.5 metres or greater and total 14 to 18 metres of aggregate coal thickness in 85 to 100 metres of stratigraphic section. A significant amount of Seam 1 should be mineable at the north end of the Goathorn East area and in the area of hole TW82D-239 in Goathorn West. Goathorn East contains probably 90% of the mineable reserves in the Goathorn Creek area. Glacial fluvial erosion has removed much of the reserves in the Goathorn West area.

Using an aggregate coal thickness of seams greater than 0.3 metres per hole multiplied by an area of influence of half the distance to each adjacent hole results in an insitu reserve of 50 million tonnes for the Goathorn Creek area.

Seam 1 was not included in this calculation. Assigning a specific gravity of 1.5 g/cc to the coal results in an overburden ratio of less than 10:1 bank cubic metres waste per tonne coal. These reserves should be classified as proven. This reserve was calculated after the 1982 field season. At the time of writing of this report an updated reserve calculation using the 1983 drilling has not been completed. This work will be finished by the summer of 1984.

9.0 Coal Quality

The 1983 quality program involved obtaining samples from "NQ" core holes, large diameter core holes (6 inch or 15.24cm) and bulk samples from a test pit located in the Goathorn East project area.

Coal core samples were obtained from 69 NQ diamond drill holes. In addition 4 large diameter (15.24cm) diamond holes were cored. The objective of the large diameter core program was to obtain samples of Seam #4 and #5 for washability purposes since these seams were not present in the test pit.

A secondary objective was to obtain samples to the north and south of the test pit in order to determine if any variation in washability characteristics occur across the property. Analytical results of the large diameter core are not available at the time of writing this report. Incremental analysis on a per hole basis can be found in Appendix 6. Quality on a seam by seam and on an overall weighted average basis for Goathorn East and Goathorn West follows in Tables 1 through 6.

A total of 14 bulk samples were extracted from the test pit through an entire section of Seam #2 to Seam #10 with the exception of Seams #4 and #5, both of which pinched out just east of the test pit. These samples will be used to determine the washability characteristics of each seam which in conjunction with mining criteria will be used to make up a number of blends for pilot plant processing. Combustion tests will be performed on the clean coal from the pilot plant products. No results are available at this time.

The Telkwa coal is ranked as High Volatile "A" Bituminous by ASTM standards. Analytical results from core hole data show it to be a prime thermal coal product with heating values in excess of 7000 kcal/kg at approximately 10 percent ash. Yields at this ash level are upward of 75% with average volatiles of 28 % and a sulphur content of approximately 1 to 1.2 percent. The Hardgrove grindability index is in the range of 60 to 62. Initial testing on selected samples show fluidity to be quite low although the possibility of producing metallurgical coal on a batch basis will be investigated. Rheological test results, ultimate analysis, ash analysis and ash fusion temperatures of samples from core hole TW81D-112 can be found in appendix 6. Ash fusion temperatures performed on samples from core hole TW81D-112 are all in excess of 2200°F.

Appendix 6 also contains data from preliminary washability tests performed on two small diameter (NQ) core samples. The results indicate that clean separations can be expected at high specific gravities resulting in a high yield, low ash product.

TABLE 1

RAW COAL QUALITY

GOATHORN EAST

BASIS - AIR DRIED
RAW COAL

DATE: MARCH 13, 1984

SEAM	RESIDUAL MOISTURE	ASH	VOLATILES	FIXED CARBON	CALORIFIC VALUE	SULPHUR	AVERAGE THICK. (m)
1	.84	23.94	24.73	51.32	6285	1.25	5.21
2	1.09	24.22	25.37	47.56	6059	1.16	2.49
3	.99	25.14	24.10	46.20	5764	1.79	2.02
4	1.02	17.60	26.80	53.54	6528	1.55	1.54
5	1.16	17.29	25.59	54.34	6586	.90	2.33
6	1.21	20.13	25.28	51.04	6258	1.27	3.35
7	1.14	18.50	26.24	51.21	6378	2.15	1.52
8	1.21	16.74	26.44	54.43	6671	1.98	2.16
9	1.06	16.03	30.02	50.92	6896	2.86	1.01
10	1.06	17.46	28.00	50.02	6693	3.00	.81

E8/tc.1

TABLE 2

WASHED COAL QUALITY

GOATHORN EAST

BASIS - AIR DRIED
WASHED AT 1.6, 1.7, 1.8 S.G.

DATE: MARCH 13, 1984

SEAM	RESIDUAL MOISTURE	ASH	VOLATILES	FIXED CARBON	CALORIFIC VALUE	SULPHUR	FSI	YIELD	AVER. THICK (m)
1	1.11	12.83	27.36	58.68	7127	.85	3.5	72.01	5.21
2	1.95	11.93	27.42	57.68	7102	.81	1.0	74.31	2.49
3	1.75	12.43	27.37	58.44	7097	1.22	1.0	73.62	2.02
4	1.60	9.05	28.78	60.56	7332	.96	2.0	77.96	1.54
5	2.03	8.38	27.82	61.77	7398	.65	1.0	80.83	2.33
6	2.05	9.19	28.49	60.27	7291	.88	1.0	79.57	3.35
7	1.73	9.70	29.01	59.56	7295	1.32	1.5	81.60	1.52
8	1.85	9.42	28.72	60.02	7311	1.15	1.0	83.99	2.16
9	1.32	8.80	33.13	56.75	7499	1.75	1.5	83.22	1.01
10	1.38	10.45	31.19	56.98	7328	2.07	2.0	83.70	.81

E8/tc.2

TABLE 3

RAW COAL QUALITY

GOATHORN WEST

BASIS - AIR DRIED
RAW COAL

DATE: MARCH 13, 1984

SEAM	RESIDUAL MOISTURE	ASH	VOLATILES	FIXED CARBON	CALORIFIC VALUE	SULPHUR	AVERAGE THICK. (m)
1	.89	28.13	24.09	46.83	5581	1.93	4.73
2	1.26	18.25	23.51	54.42	6282	1.44	2.95
3	.97	24.25	22.73	50.15	5831	1.56	1.38
6	1.38	14.00	-	-	-	.68	4.53
6U	.98	16.83	25.83	56.35	6688	1.60	4.09
6L	1.43	11.30	27.02	60.65	7212	1.15	6.36
7	1.18	15.63	23.57	52.14	6088	2.91	1.24
8	1.14	16.55	22.27	59.53	6651	1.39	2.67
9	1.16	20.05	24.58	51.35	6036	4.12	1.07
10	1.06	27.79	23.99	47.16	5627	3.87	1.18

E8/tc.4

TABLE 4

WASHED COAL QUALITY

GOATHORN WEST

BASIS - AIR DRIED
WASHED AT 1.6, 1.7, 1.8 S.G.

DATE: MARCH 13, 1984

SEAM	RESIDUAL MOISTURE	ASH	VOLATILES	FIXED CARBON	CALORFIC VALUE	SULPHUR	FSI	YIELD	AVER. THICK (m)
1	.96	12.77	27.03	59.24	7128	1.20	3.5	61.51	4.73
2	1.99	9.78	25.57	63.05	7304	1.01	1.0	80.38	2.95
3	1.23	11.04	25.03	64.07	7251	1.13	1.5	67.17	1.38
6	3.04	6.72	25.36	64.89	7371	.68	-	85.39	4.53
6U	1.44	6.20	27.67	64.69	7623	.98	2.5	79.96	4.09
6L	1.87	6.52	27.54	64.07	7472	.83	2.5	91.20	6.36
7	1.78	6.16	26.19	65.87	7499	1.39	.5	82.10	1.24
8	1.49	10.03	24.16	64.33	7192	1.17	1.0	81.53	2.67
9	1.01	9.08	26.02	63.90	7379	2.51	1.0	72.28	1.07
10	1.30	9.77	26.28	62.66	7307	2.53	2.0	63.00	1.18

E8/tc.4.1

TABLE 5

TELKWA PROJECT

GOATHORN EAST OVERALL QUALITY

	FLOAT 1.6 to 1.8 S.G.	RAW
VOLATILES	28.16	25.42
ASH	10.73	21.34
RESIDUAL MOISTURE	1.76	1.08
FIXED CARBON	59.14	50.59
CALORIFIC VALUE (kcal/kg)	7219	6264
YIELD	77.35	-
FSI	1.5	-
SULPHUR	1.00	1.52
AVERAGE THICKNESS(m)	2.24	2.24

TABLE 6

TELKWA PROJECT

GOATHORN WEST OVERALL QUALITY

	FLOAT 1.6 to 1.7 S.G.	RAW
VOLATILES	26.51	24.39
ASH	10.04	21.19
RESIDUAL MOISTURE	1.43	1.09
FIXED CARBON	62.16	51.80
CALORIFIC VALUE (kcal/kg)	7289	6104
YIELD	73.65	-
FSI	2.5	-
SULPHUR	1.15	1.76
AVERAGE THICKNESS (m)	2.71	2.71

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TELKWA PROJECT

GEOLOGICAL ASSESSMENT REPORT

OPEN FILE

1983

N.T.S. Map Sheet	93L/11	
Lat./Long	54° 35'/127° 8'	
Coal Licences	Group 327	4271, 4272 4274 - 4281 4283, 6040 5305 - 5307
	Group 325	4260 - 4262 4264, 4265 4267, 4269 4270, 4282 5839
	Bulkley Valley Coal Ltd. Option Group 221	3709, 3710 3875 - 3885
Licences Held by -	Shell Canada Resources Ltd.	
Operated by -	Crows Nest Resources Limited	
Exploration Period -	May - September 1983	
	December 1983	
Report Date -	March 1984	
Project Members -	Dave Handy	Project Geologist
	Steve Cameron	Geologist
	Jim Eisenman	Geol. Technologist
	Robert Aiello	Field Coordinator

9

TELKWA PROJECT

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GEOPHYSICAL

SEISMIC SURVEYS
TELKWA COAL PROJECT, B.C.
SUMMER 1983

Appendix 5

Prepared For

CROWS NEST RESOURCES LTD.
CALGARY, ALBERTA

Prepared By

GEO-PHYSI-CON CO. LTD.
CALGARY, ALBERTA

August 1983
C83-21

00239

GEO-PHYSI-CON

TABLE OF CONTENTS

1.0 INTRODUCTION

This report presents the results of geophysical surveys carried out for Crows Nest Resources by Geo-Physi-Con Co. Ltd. The location of the survey was at Crows Nest Resources, Telkwa Coal Project, just outside of Telkwa B.C., shown in Figure 1.

The area is characterized by coal bearing sedimentary rock lying over volcanic basement and under a highly variable thickness of overburden. The survey objectives were:

i) to map the thickness of overburden (depth to sedimentary rocks using refraction seismic methods),

ii) to map coal seams using reflection seismic methods in a test pit located on the east side of Grothorn Creek, and

iii) to determine depth and rippability of bedrock using refraction seismic in the test pit.

The survey is requested and authorized by Dave Handy of Crows Nest Resources Ltd. under Purchase Order 22371.

2.0 LOGISTICS AND DATA ACQUISITION

The seismic surveys were carried out between July 11 and 15, 1983 by a four-man crew. The crew included a project geophysicist, senior technician and two field helpers from Geo-Physi-Con Co. Ltd.

The crew lodged at commercial facilities in Smithers, B.C. and traveled daily to the survey site. Two trucks were rented from Budget Rentals in Smithers. Explosives and storage magazines were obtained through Free Spirit Adventures, also located in Smithers. The survey line locations are shown in Figure 2.

A seismic spread of 12 geophones was used with either 5, 20 or 40 metre spacing between geophones. In Table 1 is a list of line numbers, geophone separation, seismic method employed and length of line.

TABLE 1

Line	Geophone Spacing	Seismic Method	Length
West 4	40 m	Refraction	880 m
West 6	20 m	Refraction	880 m
Test Pit	5 m	Refraction and reflection	275 m

Compression type seismic waves were generated with explosives placed in shallow (<0.5 metre) holes for geophone spacing of 20 m and 40 m. For the 5 m spacing, those waves were generated by a hammer striking a metal plate.

The seismic data was recorded using a GeoMetrics ES1210-F 12 channel signal enhancement seismograph. The manufacturer's specifications for this instrument are included in Appendix A. For seismic spreads having a geophone spacing of 20 m or 40 m, arrivals were recorded from shot locations 20 m and 220 m from the end of the cable as well as from one to three interior shots. The purpose of the end shots was to obtain arrivals refracted from bedrock at most geophones. The purpose of the interior shots was to provide control in the variation in overburden velocity. For geophone spacing of 5 m, arrivals were recorded at either end of the cable as well as one interior shot. A typical shooting arrangement is illustrated in Figure 3.

Relative elevations were determined using a hand inclinometer and distance using the geophone cable. True elevations were then determined using topographic base maps supplied by Crows Nest Resources Ltd.

3.0 DATA PROCESSING

In seismic surveys the data obtained consists of travel times of compressional waves, from source (explosive charges) to detectors (surface geophones). The paths of the seismic waves are illustrated in Figure 4.

3.1 Refraction Seismic

The depth to bedrock is calculated by the delay time method. An example of this method for a simple two-layer case is shown in Figure 5. A plot is first made of the difference in arrival times at the same geophone from shots offset from the ends of the cable spread. The geophones which record arrivals from teh bedrock will generate a straight line with little scatter; the slope of the line is $2/V_2$ (Figure 5). Points which do not fall on this line indicate that the paths of at least one of the waves did not refract from the bedrock. The advantage of this procedure is that the difference plot allows i) the identification of geophones recording arrivals refracted from the bedrock, and ii) the calculation of a true bedrock velocity that takes into account irregular dipping surfaces.

Next, the delay times defined in Figure 5 are computed for each geophone having arrivals from the same refractor. The delay time is directly proportional to the layer thickness, so that the depth can be calculated beneath each geophone (Figure 5). The time distance graphs for each spread are included in Appendix B.

3.2 Reflection Seismic

The reflection seismic was interpreted using the X-squared T-squared analysis. This method has been graphically illustrated in Figure 6. In the interpretation the arrival times are squared along with the corresponding offset distance. These are then plotted on the X-squared T-squared coordinate system. A best fit straight line is drawn through the points and the velocity determined by taking the square root of the inverse of the slope of the line. The intercept of the line is T_0^2. Using all of this information, depths can be determined using the equations in Figure 6.

3.3 Determination of Rippability

The seismic velocity of rock relates to its competency and strength. The Caterpillar Company has established a relation between rippability with hydraulic rippers mounted on various Caterpillar tractors and seismic wave velocity. The chart for the D9H Caterpillar tractor is reproduced in Figure 7. This chart was compiled from experience with ripping on an open face (grade rock).

It should be stated that velocity is only one factor determining ease of excavation. Other factors which may affect the excavation are i) the ability of the ripper to penetrate the rock ii) the amount of space and grade for the cut. Clearly, the classification is subject to modification due to local conditions but is probably a reasonable estimate.

Since the exact rock type is not known for each site, an average was taken from the rippabilities of all the sedimentary rocks listed in the chart and classified in the following manner.

a) <2500 m/sec rippable

b) 2500 - 3000 m/sec marginally rippable

c) 3000 m/sec nonrippable

4.0 RESULTS

The seismic program was planned to i) determine the depth to coal bearing sedimentary sequences by refraction seismic method ii) to map coal seams in a test pit using reflection seismic and iii) to determine depth and rippability of rock in the test pit using refraction seismic.

4.1 West 4

The depth to bedrock profile from the interpretation of the refraction seismic is shown in Figure 8. Two seismic spreads using a 40 m geophone spacing were surveyed for a total length of 880 m. This line was an extension of Line West 4 of the 1982 seismic program.

The bedrock profile shows that a three-layer section is present along the entire line. The first layer has a velocity of 850 m/sec and represents overburden. The second layer ranges in velocity from 1920 m/sec to 2200 m/sec. This is representative of more dense materials which may or may not be saturated. The bedrock velocity was 3920 m/sec and is representative of competent sedimentary rocks. From station 0 to 500, rock occurs between 130 and 180 m. For the remainder of the line bedrock of this velocity was not detected with the shooting arrangements available so the depth to bedrock has been inferred. The depth to rock here was calculated to be from 180 m to 206 m. There is a drill hole close by which did not reach rock after drilling over 125 m.

4.2 West 6

There were 4 seismic spreads surveyed with a geophone spacing of 20 m along this line. The profiling in this area was not continuous due to the fact that the road was not straight.

The location of Spread 1 is shown in Figure 2. The interpreted section from the refraction seismic data is shown in Figure 9. The section was interpreted using a three-layer model. The first layer had a velocity of 950 m/sec and is representative of overburden type materials. The second layer had a velocity of 1810 m/sec and probably represents materials more dense than the first layer which may or may not be saturated. The third layer had a velocity of 2620 and represents bedrock type materials. The depth to this layer ranged from about 90 m to 105 m.

The location of Spread 2 is shown in Figure 2. The interpreted section from the refraction seismic data is shown in Figure 10. The section was interpreted using a three-layer model. The first layer had a velocity of 870 m/sec and is representative of overburden type materials. The second layer had a velocity of 1860 m/sec and probably represents materials more dense than the first layer. The third layer had a velocity of 2600 and has been interpreted to represent bedrock type materials. The rock becomes much shallower compared to Spread 1 with depths of between 35 m and 45 m being calculated.

The location of Spreads 3 and 4 are shown in Figure 2. These two spreads were joined and the results of the refraction seismic interpretation shown in Figure 11.

There are two drill holes located along this portion of line. The first drill hole (DH 209) was located at Station 40 and reported overburden thickness at 7.5 m. The second drill hole (DH 107) was located at Station 280 and reported overburden thickness at 7.0 m.

The depth to bedrock has been determined using a three-layer model along the entire line. The first layer had a velocity of between 700 and 750 m/sec and is representative of overburden type materials. The second layer had a velocity of 1930 m/sec and represents more dense materials which may or may not be saturated. The third layer had a velocity of between 3500 and 3530 m/sec and is representative of competent sedimentary rocks. From Station 0 to 240 the depth to rock is fairly shallow with depths of between 35 m and 50 m. Along the remainder of the line, rock becomes much deeper with depths of over 80 m being calculated at Station 460.

The results of the refraction seismic do not match the drill hole results along the line. A possible explanation for this is that the rock layer has been weathered and has the same velocity as the second layer ($\sim$1930 m/sec). Therefore, there is no velocity contrast between layers, making it impossible for refraction seismic to distinguish between layers. If this were the case, then drilling has not reached the competent rock (~3500 m/sec).

It is felt that if the rock has similar velocities to the second layer it is a localized phenomena. The reason for this is the fact that drill holes located within 150 m of the seismic line (DH 267, DH 228 and DH 230) reported depths of 34 m, 49 m and over 30 m, respectively. These depths correspond to depths calculated by refraction seismic along this line.

4.3 East Test Pit

At this site two seismic methods were employed using a 5 m geophone spacing. First, refraction seismic was done to determine depth to rock and the rippability of that rock and second, using reflection seismic to determine coal seams in the subsurface.

The results of these surveys are shown in Figure 12. The depth to rock has been determined using a two-layer model. The first layer velocities ranged from 210 to 580 m/sec and are representative of overburden velocities. The second layer ranged from 2000 to 3330 m/sec and is representative of rock. The rock is quite shallow with depths of between 1 m and 3 m. In Figure 12 is shown the rippability of these rock zones.

The reflection seismic was able to locate a reflectors along portions of the survey line shown in Figure 12. The first occurs between Stations 0 and 65 at a depth of between 50 m and 55 m. The second between Stations 140 and 170 at a depth of between 35 m and 40 m and the third from station 230 and 300 at a depth of between 45 m and 50 m.

5.0 CONCLUSIONS

Since there is a marked difference between overburden and bedrock velocity, it was possible to determine depth to bedrock using refraction seismic techniques. Along line West 6, Spreads 3 and 4, there is disagreement between depth to rock as reported in drill holes and those calculated by refraction seismic. A possible explanation is that the rock in this case is weathered with similar velocities as the overburden ($\sim$1930 m/sec). This would result in there being no velocity contrast between layers, making it impossible for refraction seismic to distinguish between layers. If this is the case, drilling has not reached the more competent rock layer ($\sim$3500 m/sec).

From the velocities obtained through the analysis of the refraction seismic data it was also possible to determine rippability of rock at the test pit. This was done by comparing the velocities to the Caterpillar Company's "Performance Rippability Charts" for sedimentary rocks of a D9 Ripper. Clearly, the Caterpillar Rippability Charts are subject to modification due to local conditions but they are probably a reasonable estimate.

The reflection seismic had limited success in locating reflectors at depth in the test pit area.

THE ASSOCIATION OF PROFESSIONAL ENGINEERS, GEOLOGISTS and GEOPHYSICISTS OF ALBERTA
PERMIT NUMBER
P 2802
Geo Physi Con Co. Ltd.

Respectfully submitted,

GEO-PHYSI-CON CO. LTD.

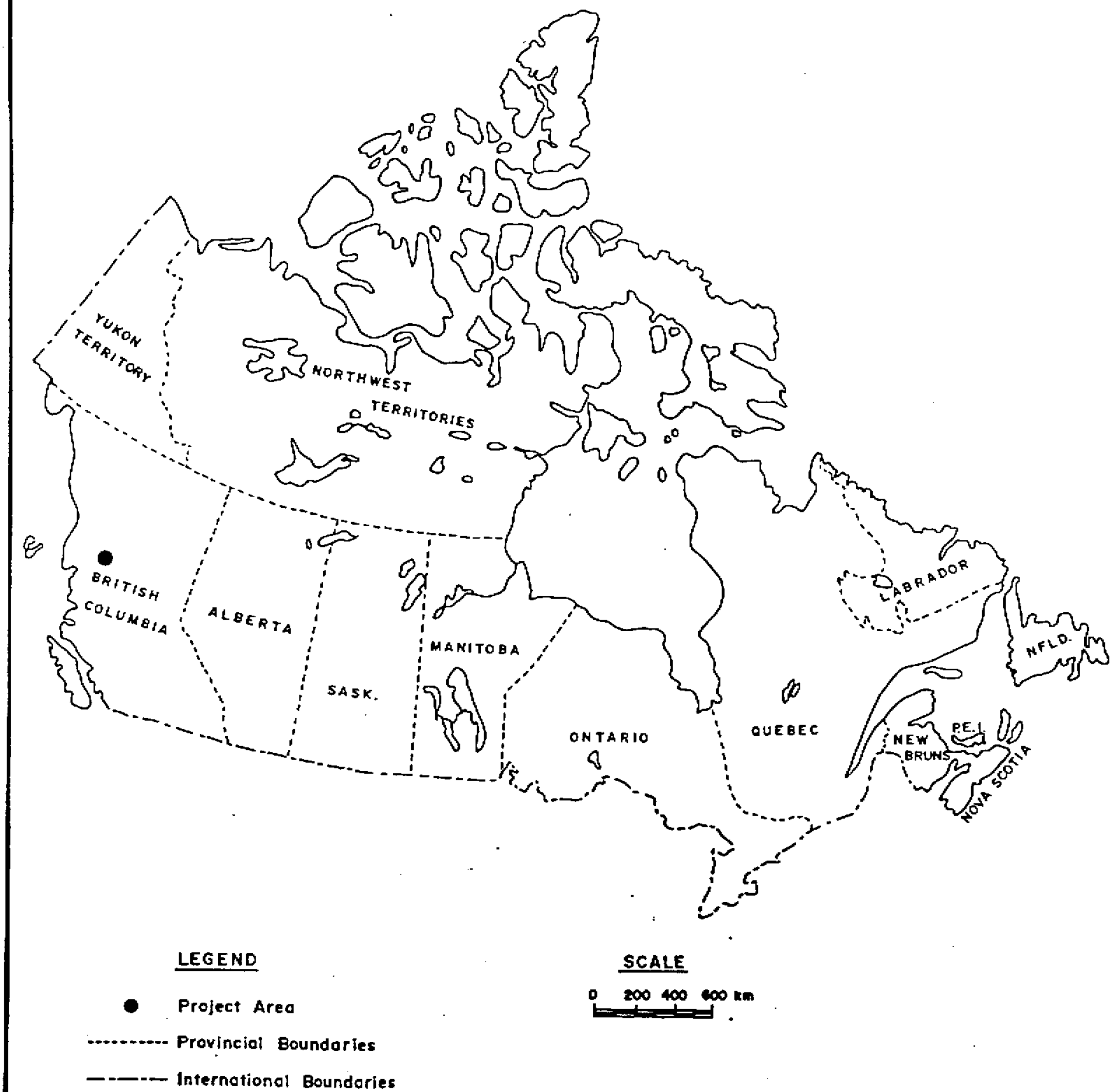
Per: Michael Pesowski

Michael Pesowski, B.Sc.,
Project Geophysicist

Per: Michael Pesowski
for

T. Sartorelli, P.Eng.,
Senior Geophysicist

Calgary, Alberta
July 1983
C83-21



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TELKWA COAL PROJECT

PROJECT LOCATION

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Figure 1

LEGEND

Seismic Line (1983)

Seismic Line (1982)

233 Drill Hole and Number

Road

Bridge

Test Pit Boundaries

SCALE

0 100 200 300 metres

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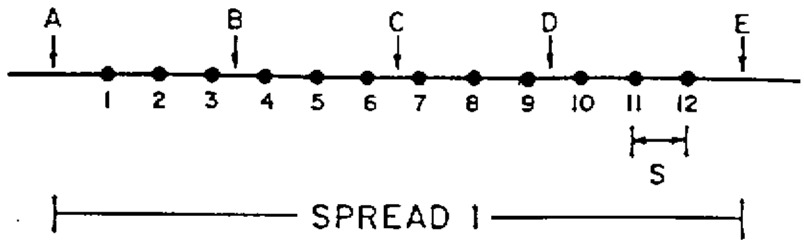
TELKWA COAL PROJECT

239

LINE LOCATION MAP

#02 pg.17

GEO-PHYSI-CON	SCALE 1:5000	DRAWN BY B.T.	DATE July, 1983
	N.T.S.	PROJECT NO. C 83-21	FIGURE 2



LEGEND

● 2	Geophone location
↓	Shot locations
A	Normal shot
B	Normal centreline shot
E	Reverse shot
D	Reverse centreline shot
C	Centreline shot
S	Geophone spacing

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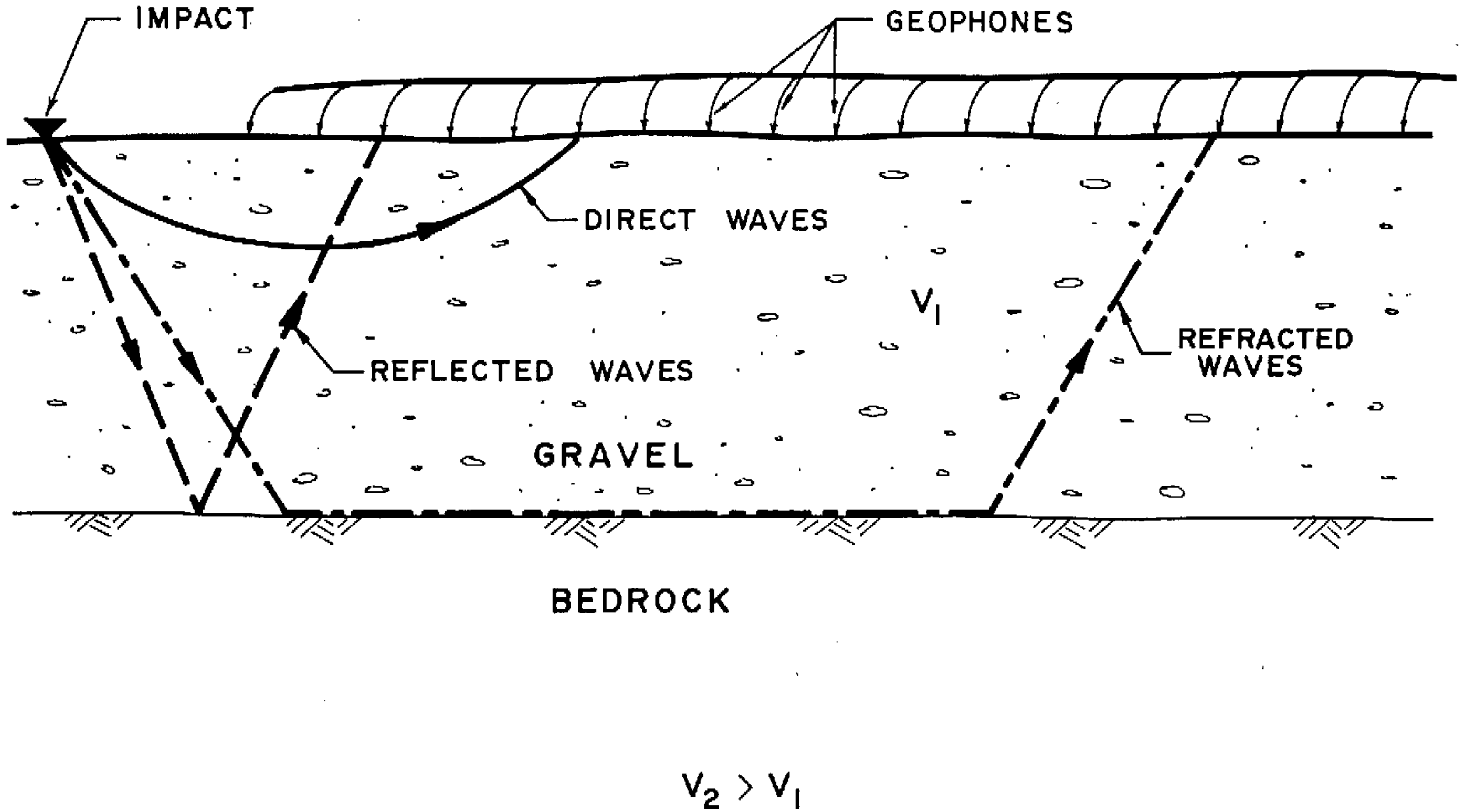
SHOT AND GEOPHONE LAYOUT
SINGLE SPREAD
CROWS NEST RESOURCES LTD.

CB3-21

Figure 3



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PATHS OF SEISMIC WAVES

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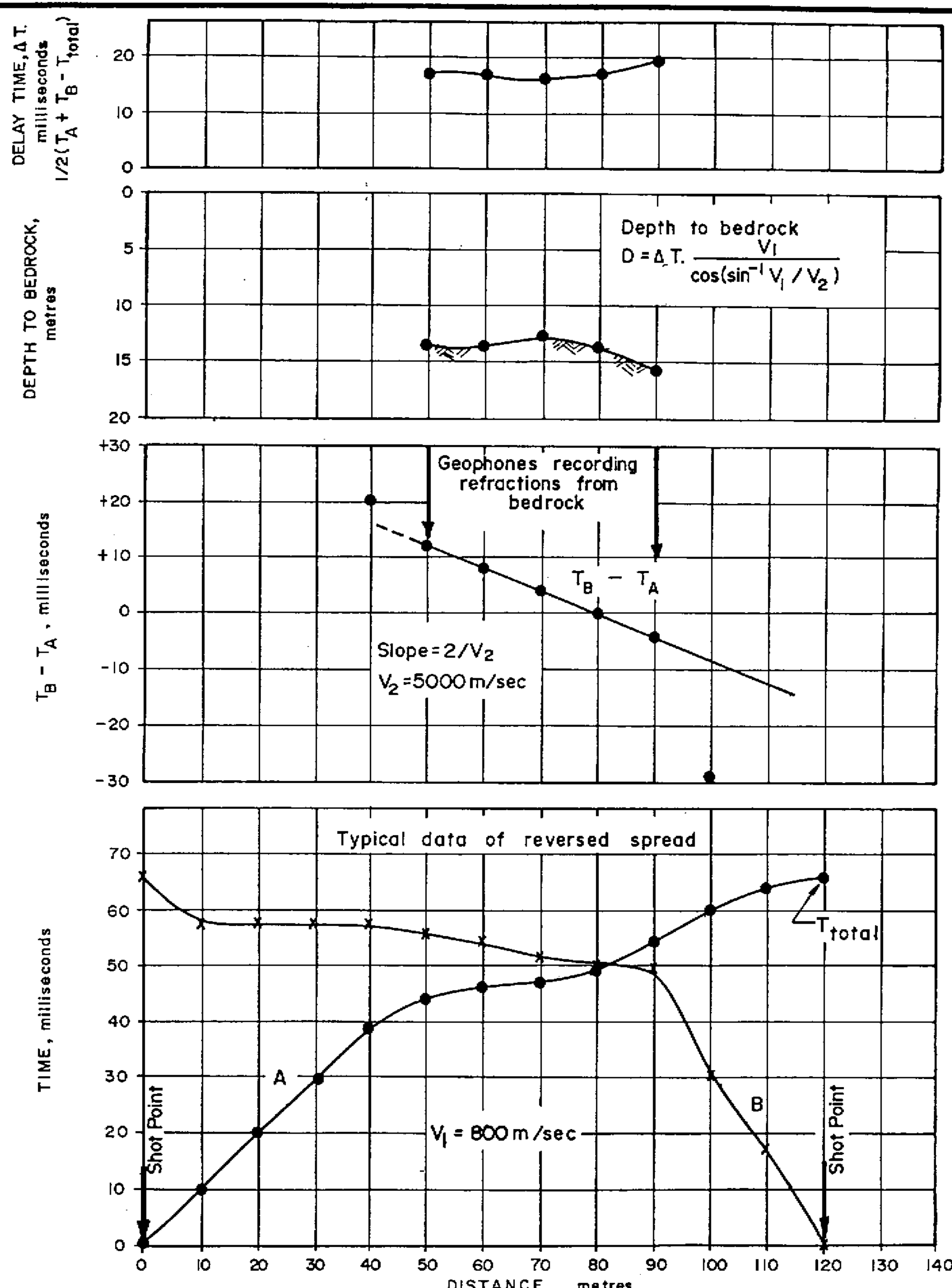
Figure 4



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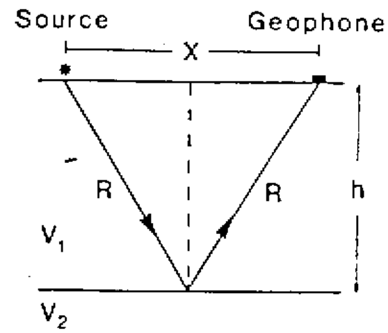
TYPICAL REVERSE SEISMIC REFRACTION DATA AND ANALYSIS

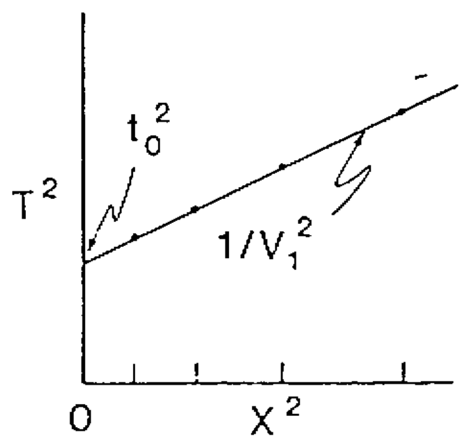
C 83-21

Figure 5

$$t_x = (1/V_1)\sqrt{X^2 + 4h^2}$$

$$t_x^2 = (X^2/V_1^2) + (4h^2/V_1^2)$$





$$V_1 = \sqrt{1/(\text{Slope of line})}$$

where V_1 = velocity of medium

$$h = \sqrt{(t_0^2 V_1^2)/4} = (t_0 V_1)/2$$

where h = depth to reflector at X = 0

FROM: An Introduction to the Utilization of the Shallow or Engineering Seismic Reflection Methods
R. Lankstrom, M. Lankstrom, 1981

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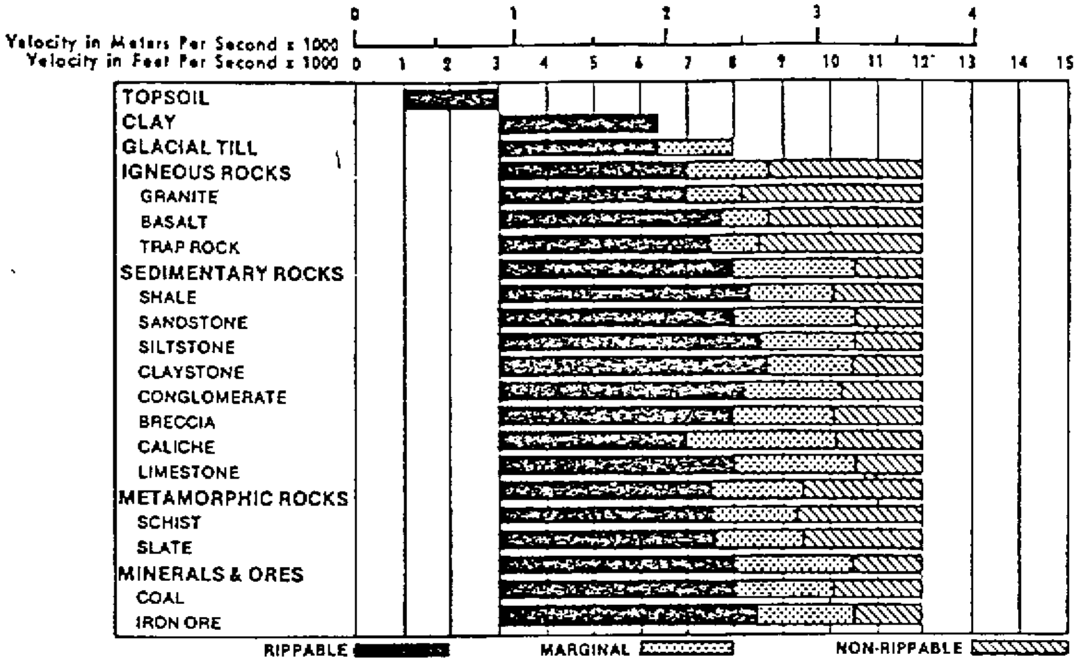
TELKWA COAL PROJECT
X^2 - T^2 ANALYSIS

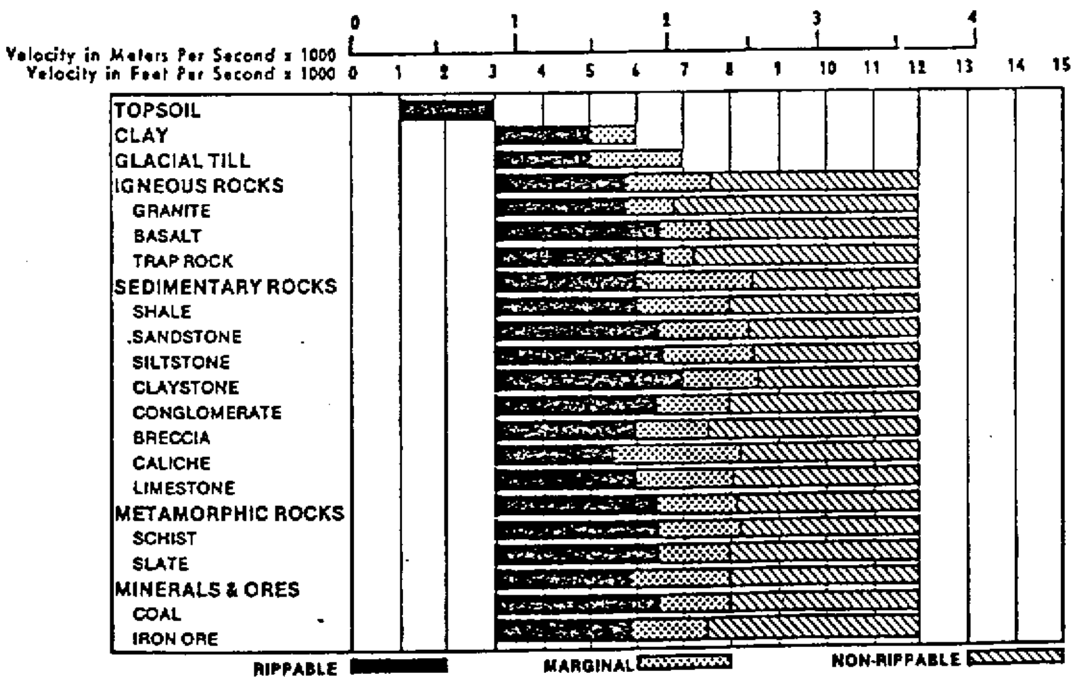
C 83-21

Figure 6

D9H RIPPER PERFORMANCE ESTIMATED BY SEISMIC WAVE VELOCITIES
Multi or Single Shank No. 9 Series D Ripper



D8K RIPPER PERFORMANCE ESTIMATED BY SEISMIC WAVE VELOCITIES
Multi and Single Shank No. 8 Series D Ripper



Reference: from Catipiller Performance Handbook

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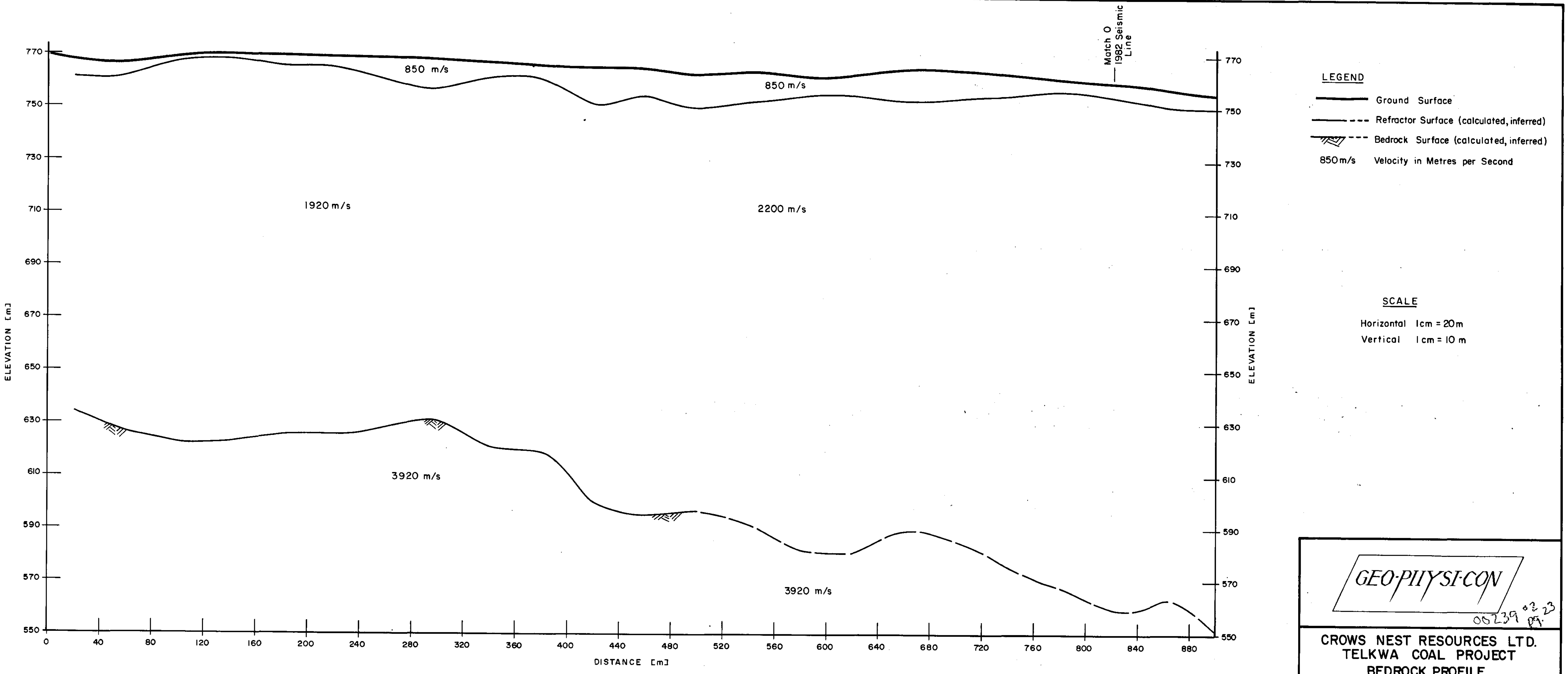
RIPPABILITY OF BEDROCK

C83-21

Figure 7



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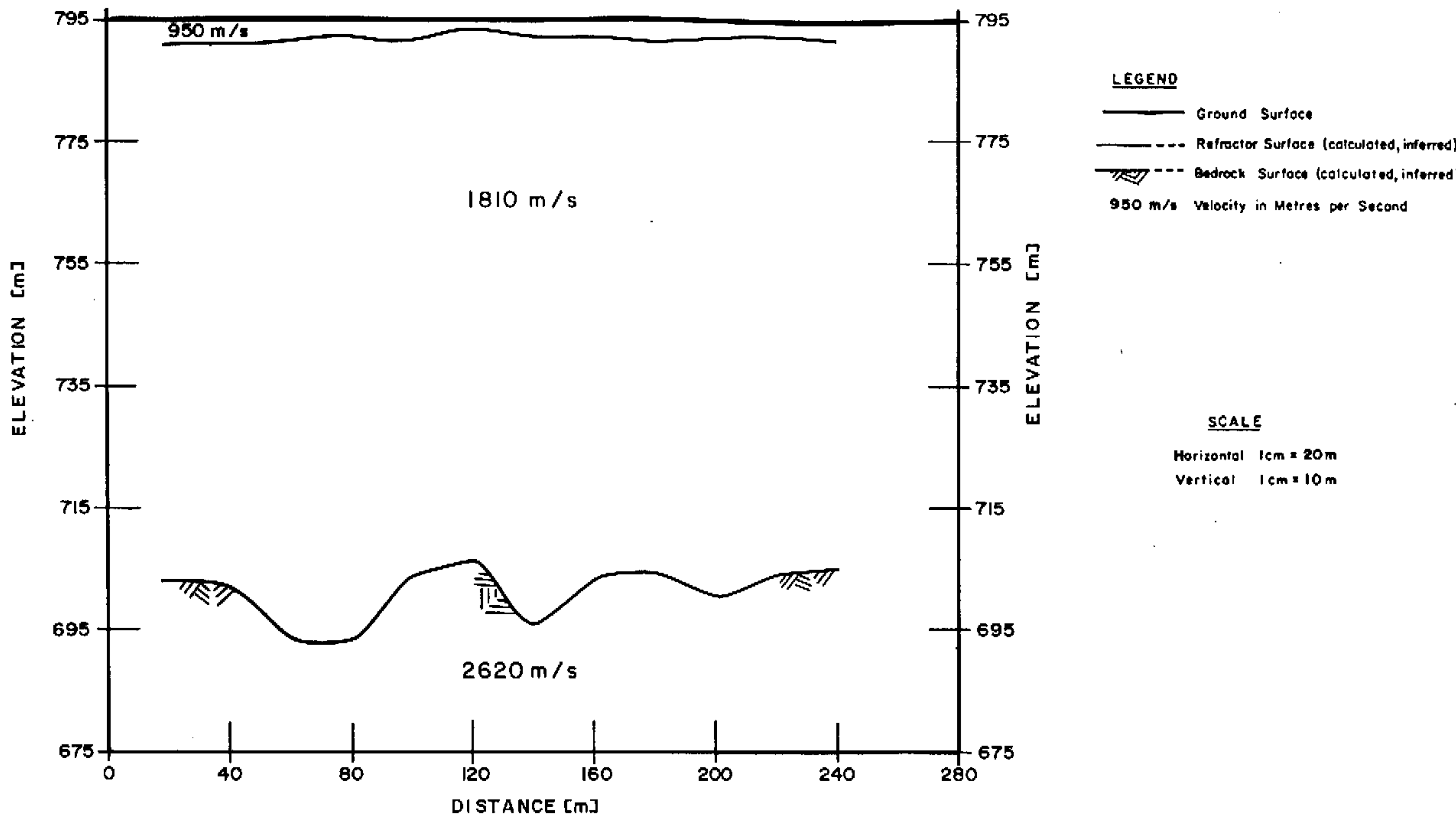
CROWS NEST RESOURCES LTD.
TELKWA COAL PROJECT
BEDROCK PROFILE
LINE WEST 4 EXTENSION

C83-21

Figure 8



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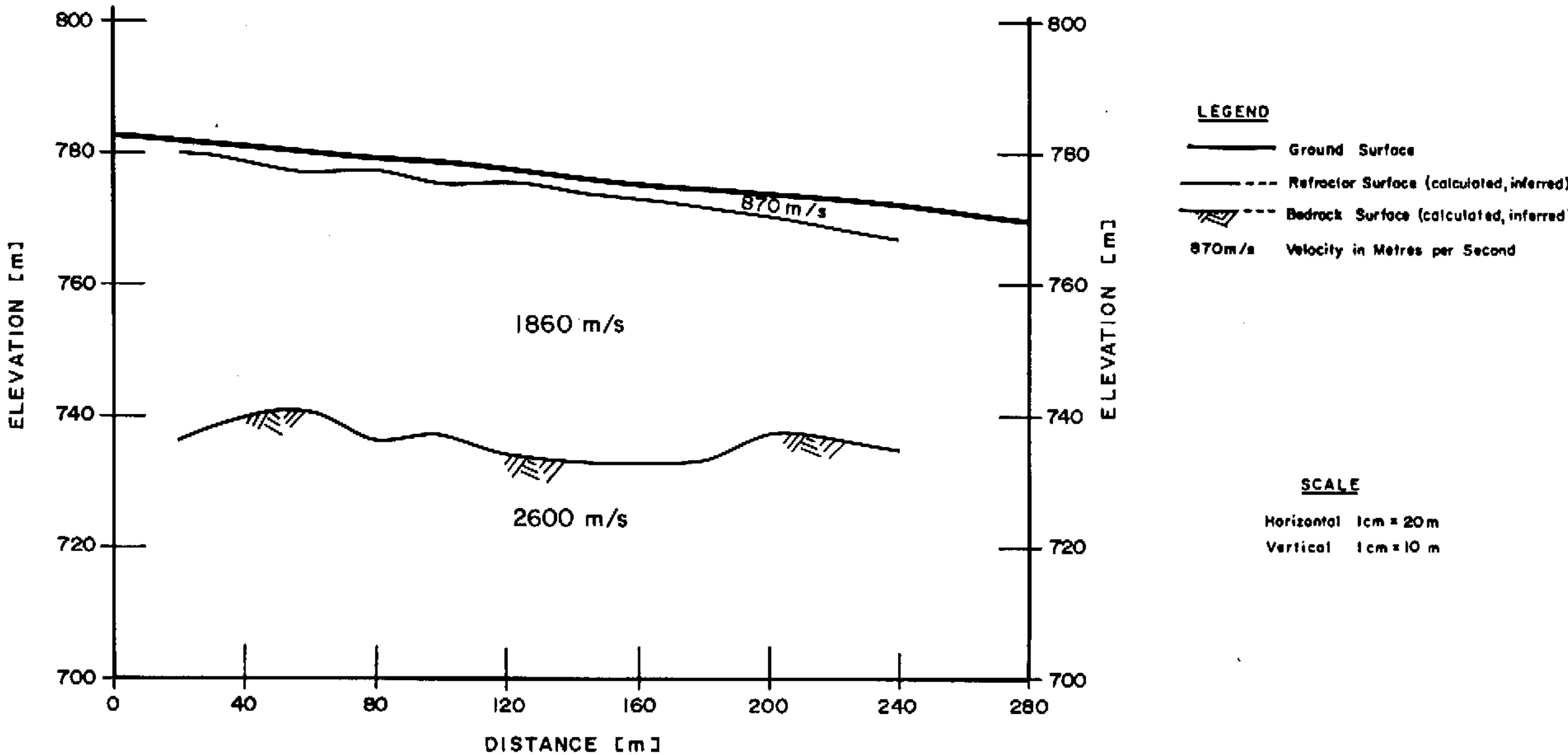
CROWS NEST RESOURCES LTD.
TELKWA COAL PROJECT
BEDROCK PROFILE
LINE WEST 6
SPREAD 1

C83-21

Figure 9



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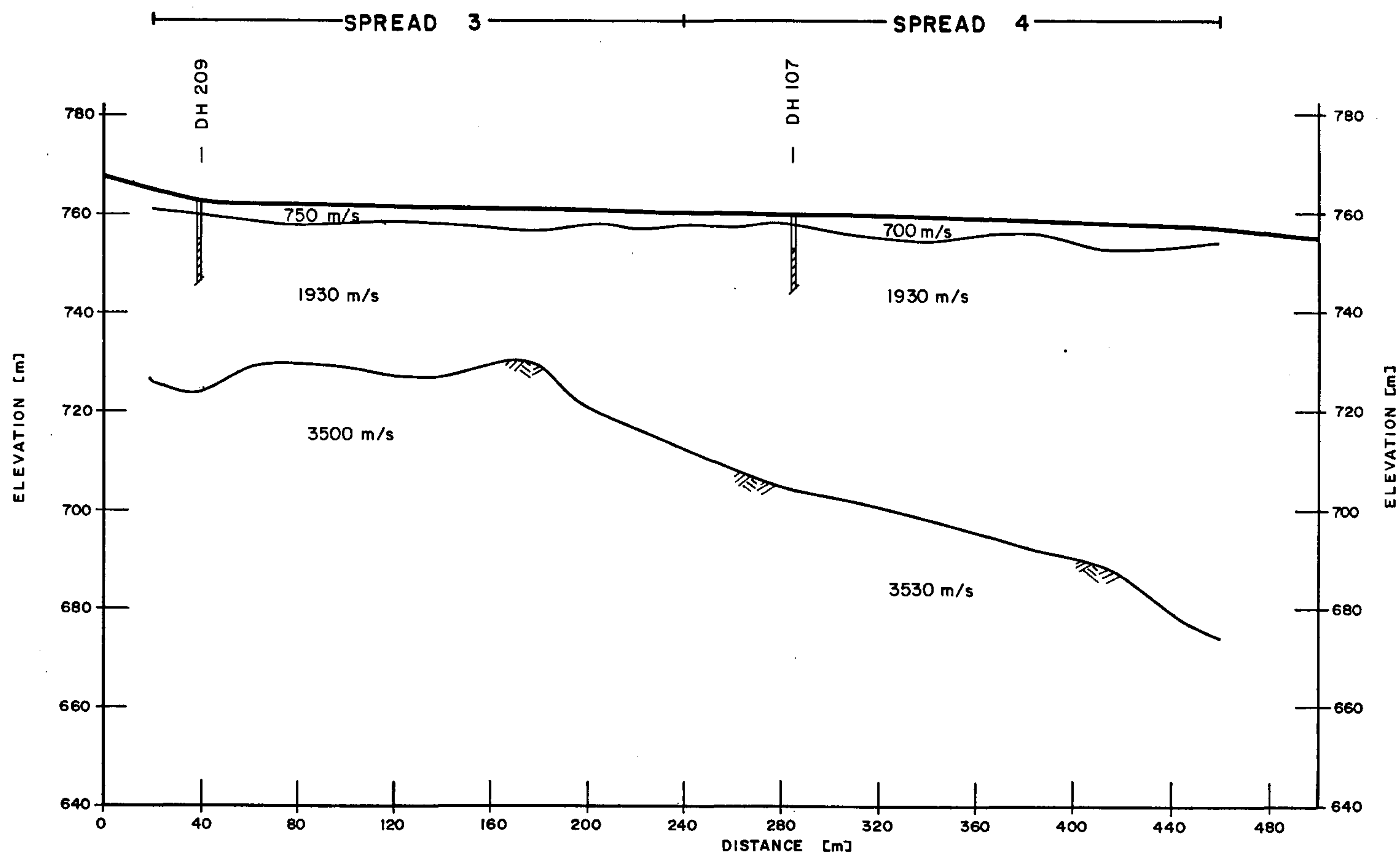
CROWS NEST RESOURCES LTD.
TELKWA COAL PROJECT
BEDROCK PROFILE
LINE WEST 6
SPREAD 2

C 83-21

Figure 10



LEGEND

Ground Surface

Refractor Surface (calculated, inferred)

Bedrock Surface (calculated, inferred)

Overburden

Bedrock

700m/s Velocity in Metres per Second

SCALE

Horizontal 1cm = 20 m

Vertical 1cm = 10 m

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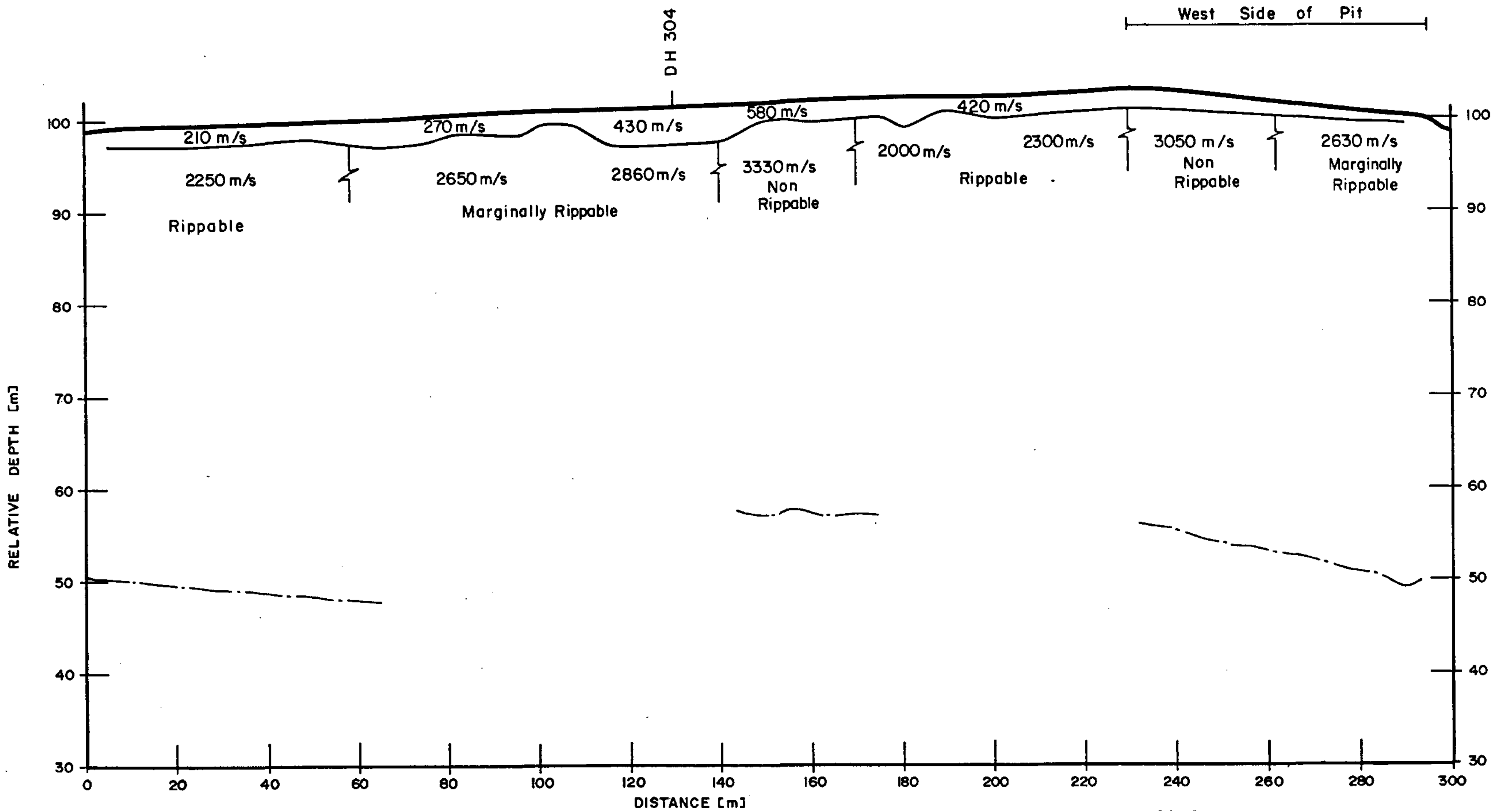
CROWS NEST RESOURCES LTD.
TELKWA COAL PROJECT
BEDROCK PROFILE
LINE WEST 6
C83-21 SPREADS 3 and 4 Figure 11

Pg. 26



SCALE

Horizontal 1 cm = 20 m
Vertical 1 cm = 5 m

LEGEND

Ground Surface

Refractor Surface (calculated, inferred)

Bedrock Surface (calculated, inferred)

Reflector Surface

210 m/s Velocity in Metres per Second

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CROWS NEST RESOURCES LTD.
TELKWA COAL PROJECT
REFRACTION AND REFLECTION SEISMIC PROFILE
EAST TEST PIT

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C83-21

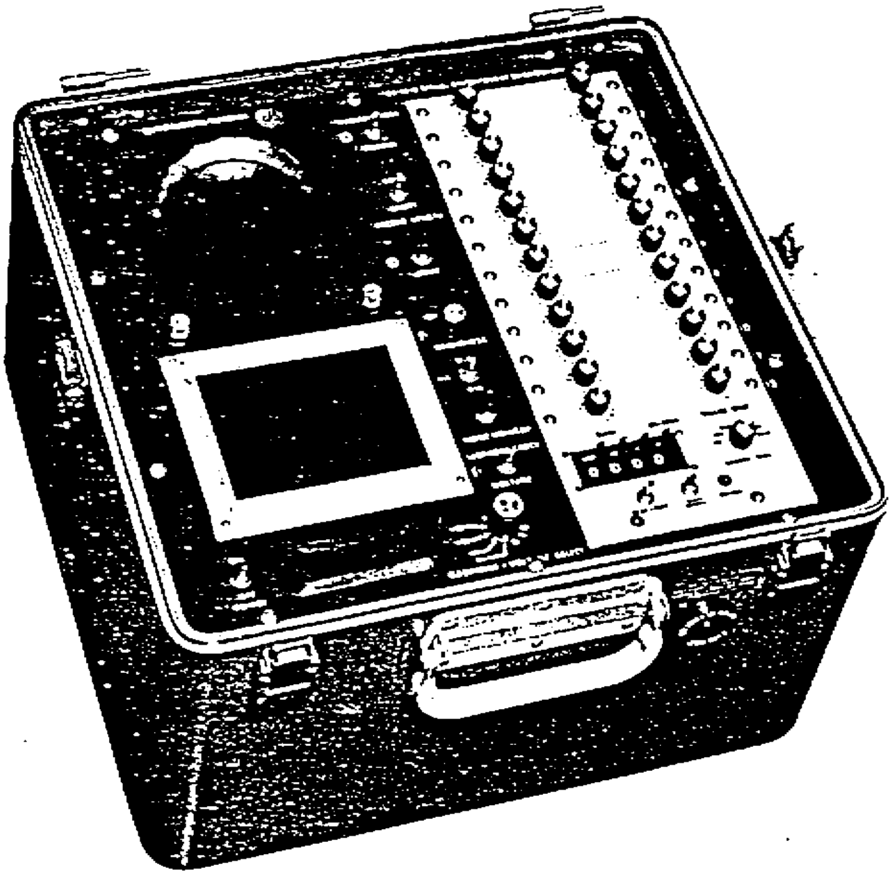
Figure 12

APPENDIX A

geoMetrics/nimbus

MULTICHANNEL SIGNAL
ENHANCEMENT SEISMOGRAPH
MODEL ES-1210

Preliminary Data Sheet



* *Signal enhancement* for greater sensitivity, improved waveform definition, and more accurate time measurements. Operates under high noise conditions and surveys to greater depths without explosives.

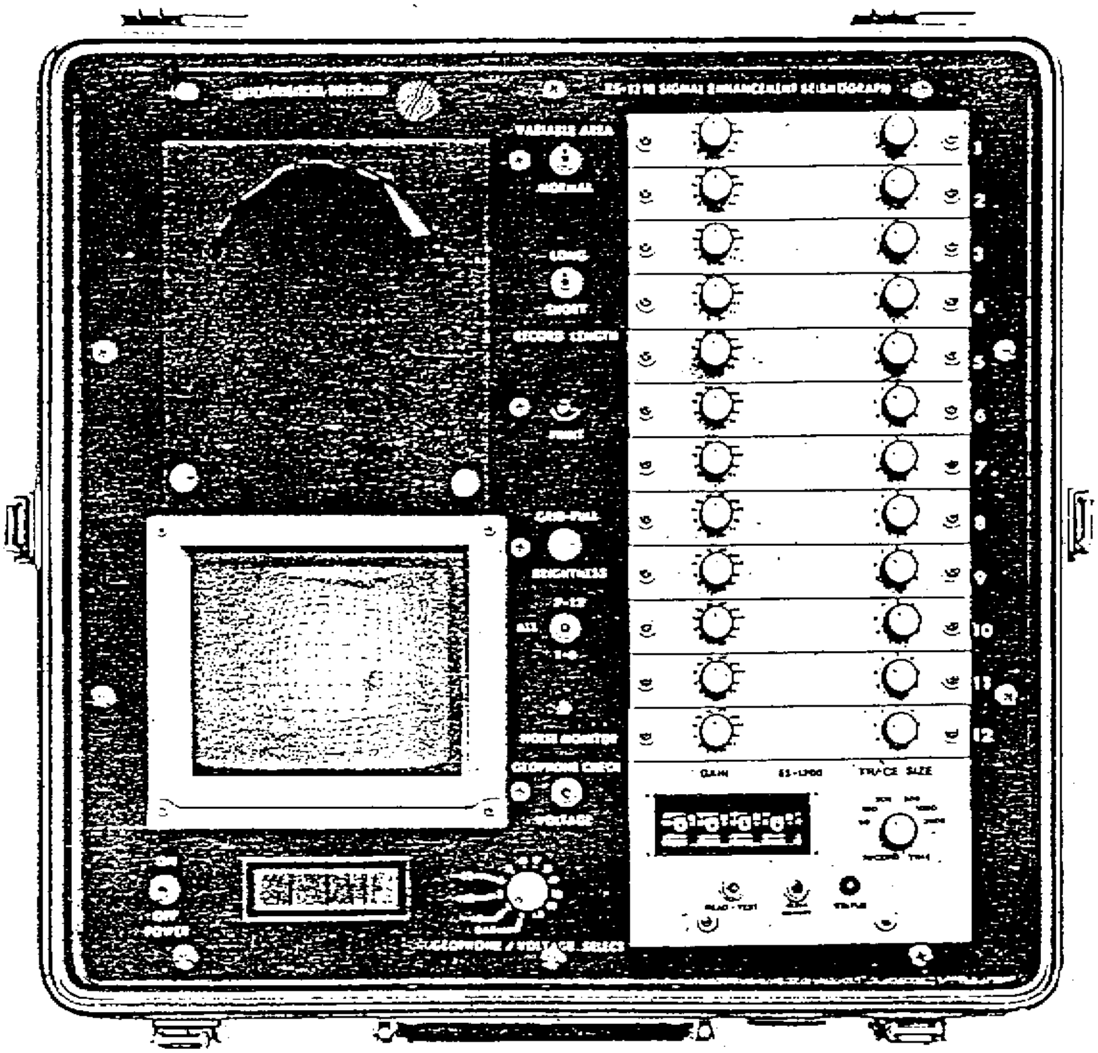
* *Multichannel oscillograph* provides permanent records on high-contrast, sunlight proof, reproducible paper with wiggle trace or variable area format.

* *Daylight-visible CRT monitor* displays the signal stored in memory.

* Compact, lightweight and portable. Ruggedly packaged in weatherproof case.

* Optional digital magnetic tape recorder for computer compatible data storage.

The Nimbus ES-1210 Multichannel Signal Enhancement Seismograph is unique in its combination of CRT display, signal enhancement and oscillograph recording in a single small field instrument. Simple to use yet powerful in performance, this new instrument is ideally suited for all shallow geologic investigations for mining, construction and geologic exploration.



CONTROLS AND FEATURES

Amplifier (input) GAIN is controlled by a 12-position switch, selectable from relative gain of 1 to 5000 in steps of 1-2-5-10 etc. Each amplifier has a 10 bit by 1024 sample memory which stores the digitized signal. Playback gain is controlled over a 20 to 1 range by the TRACE SIZE control. Pulling up the trace size control freezes the memory on that particular channel so that it will not further enhance or erase, thus saving the data while allowing operation on the other channels. Playback or display are not affected by memory freeze.

Enhancement control electronics include the RECORD LENGTH control, which selects total time of the record among 50, 100, 200, 500, 1000 or 2000 milliseconds. The record DELAY postpones the start of the record up to 9.999 seconds in one milliseconds increments, allowing you to look later in time, delete unnecessary leading portions of the signal, and maintain faster sampling rates for later events. CLEAR MEMORY controls erases the data stored in the memory. An interlock is provided (both READ and CLEAR must be used) to prevent accidental erasure of valid data. TEST provides a start command to take a record in lieu of hammer switch or blaster.

Signal enhancement is a term used to describe the stacking process used in the ES-1210. The seismic signals for each hammer blow or shot are digitized and stored in a computer-like memory in the instrument. Unlike conventional analog seismographs, the record is not made at the instant of the hammer impact or explosion. Instead, it is held indefinitely and printed at the operator's convenience. If the impact or explosion is repeated, the seismograph will add the new signal and the old one, storing the sum back in the memory. As this process is repeated, the signal will grow larger and larger, thus enhancing its appearance on the display or oscillograph record. Seismic noise in the earth, which provides the most significant limitation in depth penetration, is random and does not add in the signal enhancement process at the same rate that the true signal does. As a result, surveys can be performed to about three times the depth that could be realized without enhancement using an equivalent energy source.

Signal enhancement is also a significant improvement in making shear wave velocity measurements. These types of surveys are important because of the dynamic parameters of foundations can be calculated from shear wave velocities, liquid saturation can be discriminated from other conditions with equivalent P-wave velocities, and shear strength can be estimated. The most reliable shear wave studies are made with mechanical sources, which means that signal enhancement is often a requirement.

Signal enhancement provides other, less obvious advantages, even when using explosive sources. Since the playback gain of the signal stored in memory is adjustable, there is less guess work involved in getting good records. Multiple copies can be made without reshooting the blast. Since the frequency response is not limited by galvanometers and paper speed, a higher time resolution is available, an important factor when working in high-velocity materials.

The signal stored in the memory is displayed on the built-in CRT monitor, and the display will have the same appearance as the paper record. A paper record can be made as often as necessary, at will, without disturbing the data stored in memory. The trace size control can be changed to optimize the record for an application. The gain may be set high for sharp breaks on the P-wave arrivals, and a hard copy made. Then the gain can be turned down for better shear waves or reflections and another copy made.

Both the CRT and oscillograph record in conventional wiggle trace and variable area. A wiggle trace record, like that of a conventional seismograph, would be selected for refraction and shear wave studies. Variable area recording (often seen on examples of petroleum reflection records) is best for reflection because that presentation emphasizes coherent events and resembles geologic structure.

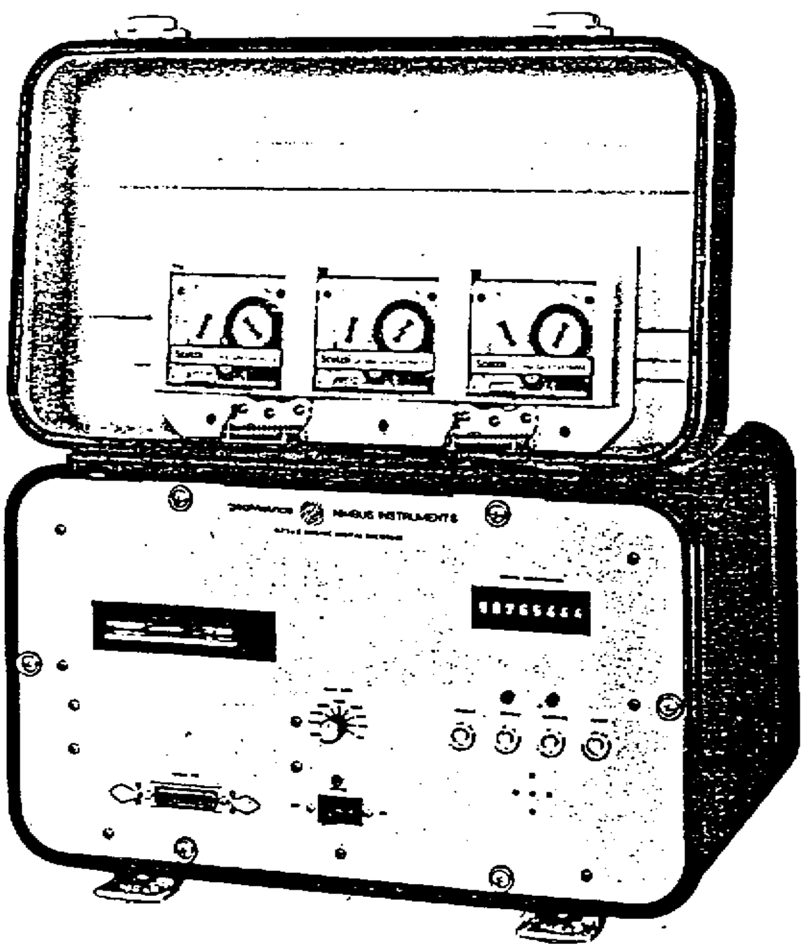
The CRT display is especially important in three other situations. When working in areas with significant background noise, the display gives an instant observation of the signal quality so that it is immediately known whether to repeat impacts, freeze specific channels, or erase and start over. The other use is in shallow reflections. The instant examination of all the channels simultaneously is important in recognizing these events in the record. The third use of the CRT display is in gain selection. With the NOISE MONITOR switch depressed real time signals are shown on the CRT and the gain setting for each channel can be chosen appropriately.

The CRT display is five inches (13 cm) diagonal measurement. It displays all 12 channels simultaneously or switch selected combinations of six channels as desired. It has a special light filter to allow direct viewing in sunlight without special hoods. The bezel will fit standard oscilloscope cameras so that photographs may be made of the display if desired. Timing lines may be superimposed on the CRT at will by pulling up on the BRIGHTNESS control. The timing line intervals vary, depending on the record length, so that appropriate resolution and clarity is maintained.

A digital voltmeter is provided to measure the battery voltage, internal power voltages, and individual geophone resistances. The NOISE MONITOR, when selected, couples the amplified geophone signals to the CRT display. This allows monitoring the instantaneous background noise so that records may be made during quiet periods.

The data stored in the memory may be accessed externally. An optional digital tape recorder, the G-724S, is available to provide computer compatible storage of the data. The G-724S will store 10 full records (120 channels) in a reduced resolution, 8-bit format, or you can store 5 records (60 channels) in the full 10-bit format. The G-724S serves as its own playback device, outputting the data in an RS-232 format which is directly interfaceable to most computers including desk top models.

G-724S Digital Recorder



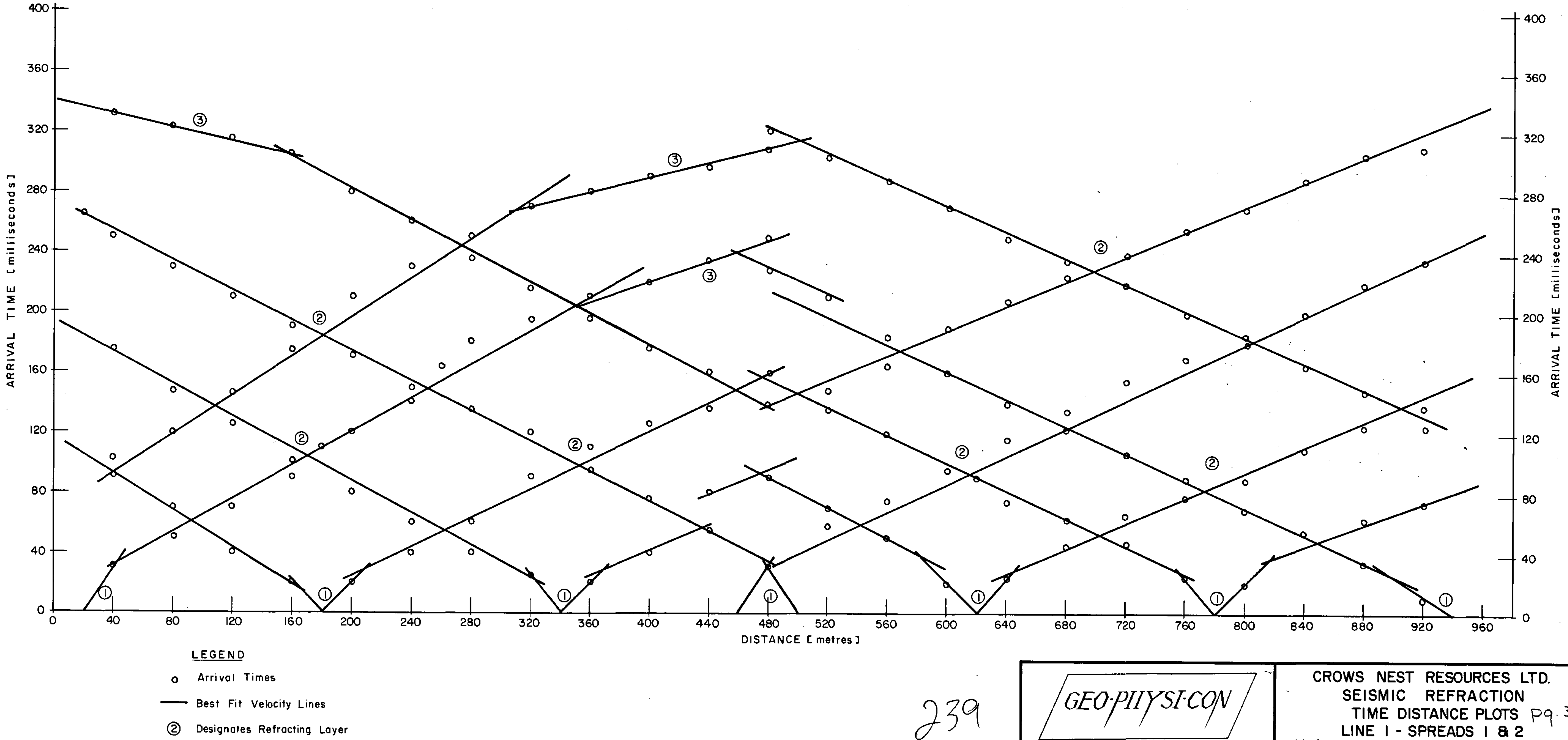
Nimbus ES-1210

SPECIFICATIONS

Basic refraction and reflection system includes: 12-channel exploration seismograph, 12-volt battery pack, 110/220 volt charger, power cord, hammer switch, and instruction manual.

Signal Enhancement:	samples, digitizes, and stores signal in a random access memory. Repeated signals are added while random noise is cancelled or limited.
Memory Size:	10 bits by 1024 words on each channel.
Sample Interval:	switch selectable 50, 100, 200, 500, 1000, or 2000 microseconds
Record Length:	switch selectable 50, 100, 200, 500, 1000, or 2000 milliseconds
CRT Display:	5" diagonal measurement CRT, daylight visible without hoods, switch selectable time lines, camera compatible, and displays wiggle trace or variable area record display.
Oscillograph:	permanent record of all 12 channels simultaneously on 4" wide electrosensitive paper. Record will not fade in light, and reproduces on copying machines.
Noise Monitor:	ambient vibrations displayed on CRT allowing timing of energy source during quiescent periods and the optimization of gain adjustments.
Timing:	crystal controlled, .01% accurate, time lines are switch selectable on CRT and high or low resolution on oscillographic record.
Precision Delay:	postpones start of record up to 9.999 seconds in one millisecond increments.
Digital Meter:	indicates battery voltage, geophone resistance on each channel power supply voltages.
Digital Output:	a panel connector to allow digital recording of signal stored in memory on optional digital recorder Model G-724S.
Record Initiation:	by contact closure, saturated NPN transistor, or negative 5-volt pulse.
Standard Size/Weight: (seismograph)	14 X 15 X 15 inches (36 X 38 X 40 cm) lid closed 38 pounds (17 kg)
Power Requirements:	12 volts, 3.5 amperes
Seismograph Case:	Heavy duty aluminum with lid and water tight seal.

APPENDIX B



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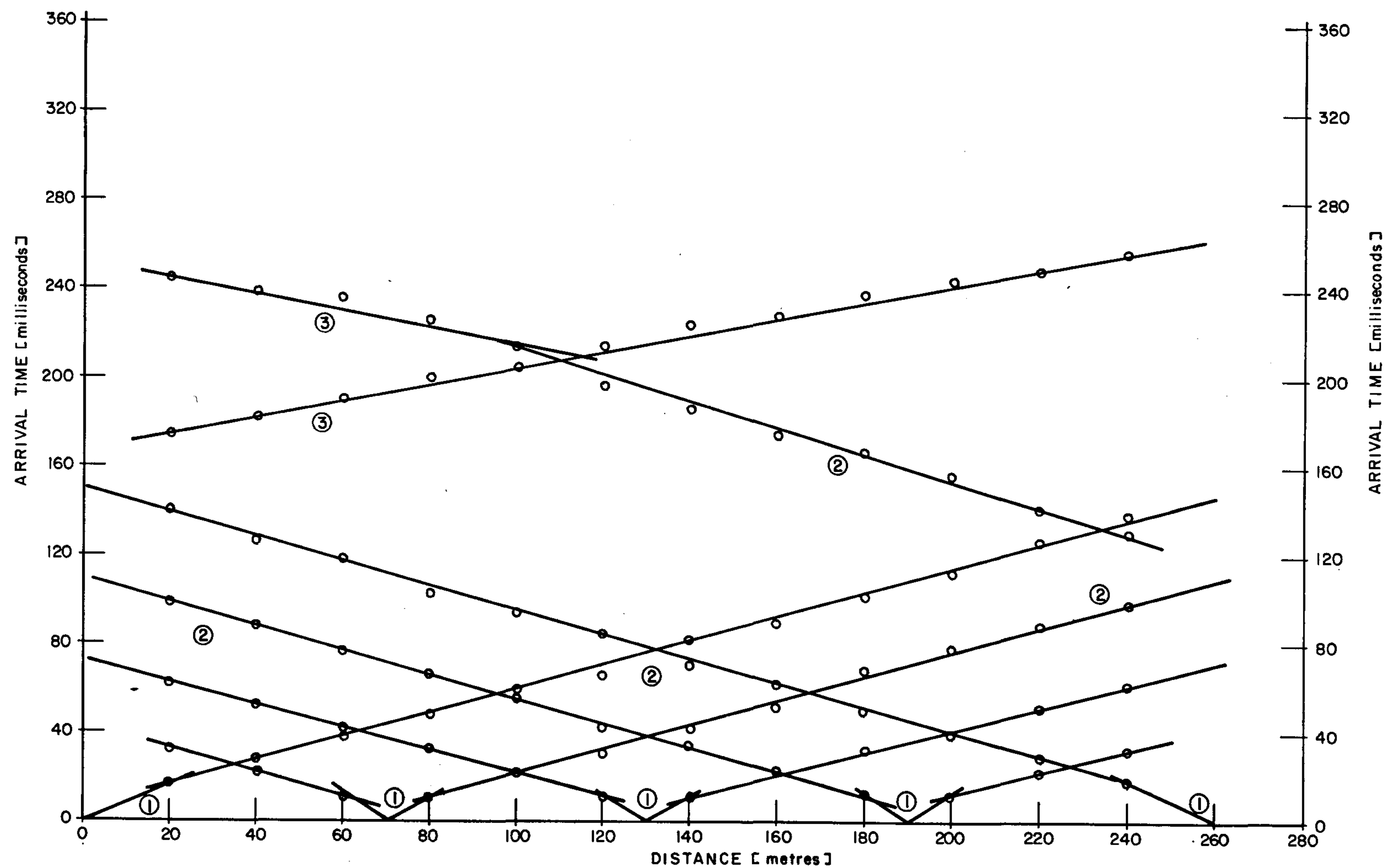
GEO-PHYSI-CON

CROWS NEST RESOURCES LTD.
SEISMIC REFRACTION
TIME DISTANCE PLOTS Pg. 35
LINE 1 - SPREADS 1 & 2

C 83-21

Figure B1



LEGEND

o Arrival Times

Best Fit Velocity Lines

② Designates Refracting Layer

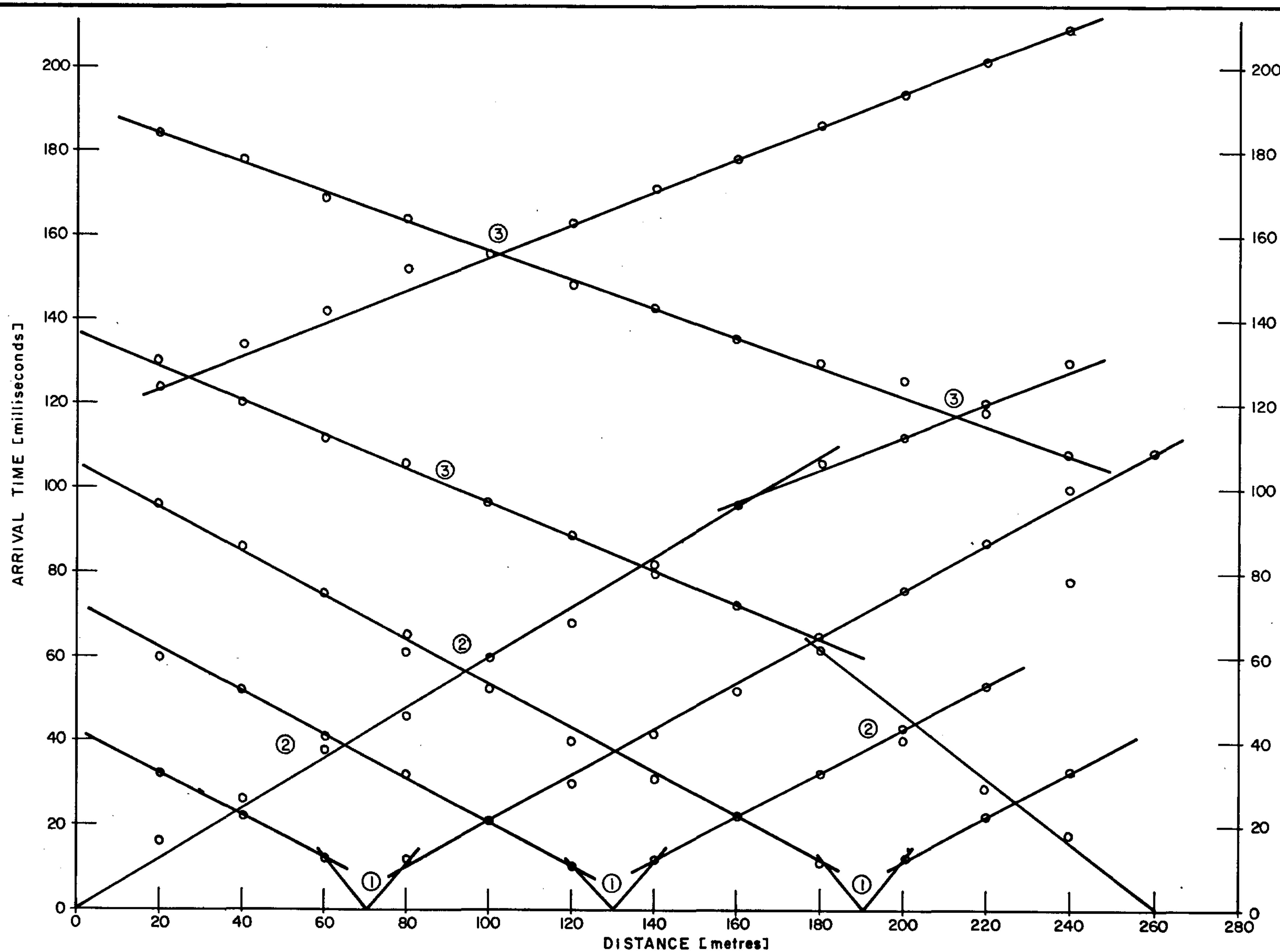
GEO-PHYSI-CON

CROWS NEST RESOURCES LTD.
SEISMIC REFRACTION
TIME DISTANCE PLOTS
LINE 2 - SPREAD I

pg. 36

C 83-21

Figure B2



LEGEND

o Arrival Times

Best Fit Velocity Lines

② Designates Refracting Layer

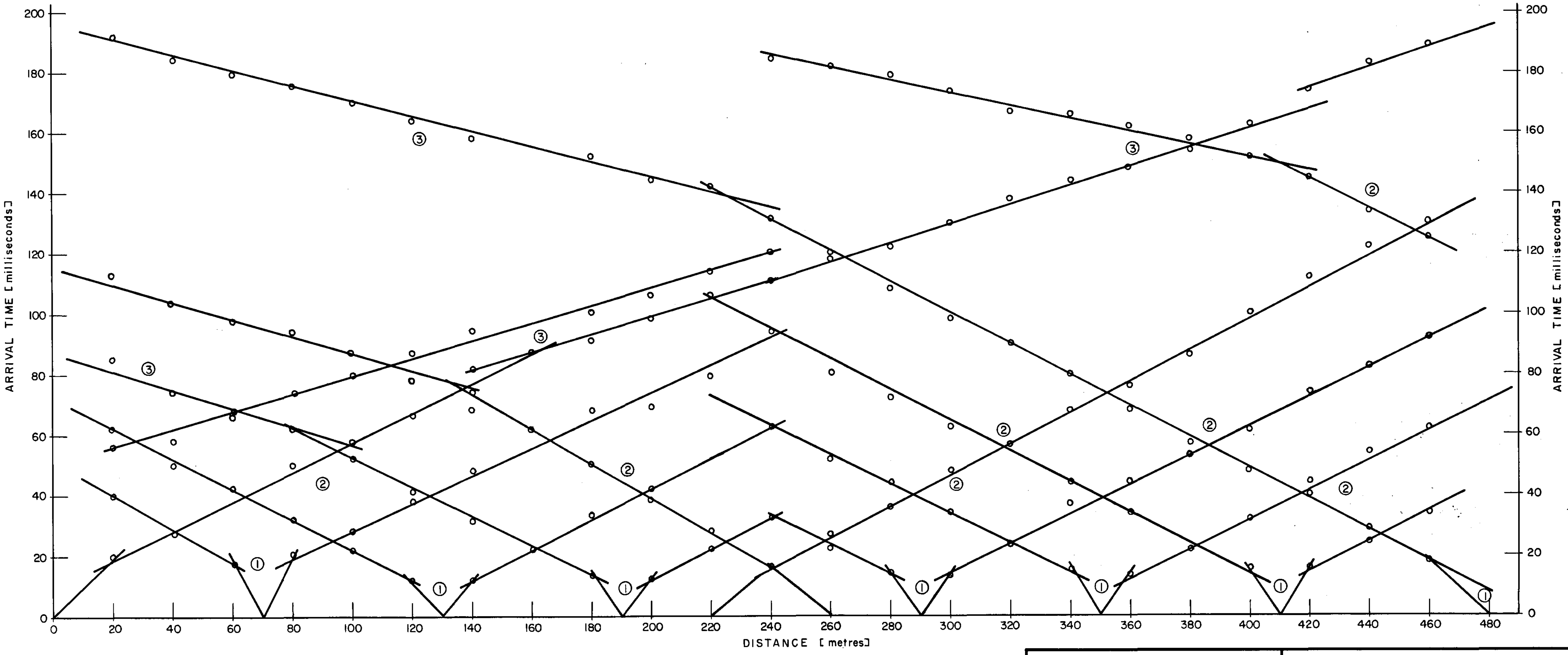
GEO-PHYSI-CON

CROWS NEST RESOURCES LTD.
SEISMIC REFRACTION
TIME DISTANCE PLOTS
LINE 2 - SPREAD 2

pg. 37

C 83-21

Figure B 3



LEGEND

o Arrival Times

— Best Fit Velocity Lines

② Designates Refracting Layer

GEO-PHYSI-CON

CROWS NEST RESOURCES LTD.
SEISMIC REFRACTION
TIME DISTANCE PLOTS pg. 38
LINE 2 - SPREADS 3 & 4

C 83-21

Figure B4

TK - TELKWA 83(3)A

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CONFIDENTIAL

GEOTECHNICAL CORE LOGS

E7/z.7

GEOTECHNICAL PROGRAM
TELKWA PROJECT
1983 DATA SUMMARY

LOCATION = TW83D-301

START OF CORE RUN	RECOVERY PERCENT	R.Q.D.	LITHOLOGY	BEDDING FRACTURES	JOINT FRACTURES	UNCLASSIFIED FRACTURES	MINOR FAULT FRACTURES	FAULT ZONE FRACTURES	TOTAL FRACTURES
4.57	32.8	.0	COAL						
			NTRK						
5.79	49.2	.0	COAL			6.			6.
			MDST	15.	2.	4.			21.
			NTRK						
8.23	52.5	6.2	MDST	19.	1.	1.			21.
			SLTS		1.				1.
11.28	26.9	.0	COAL	3.		35.			38.
			MDST	6.		30.			36.
14.33	92.6	25.9	COAL	8.	1.	23.			32.
			MDST	12.	5.				17.
16.76	85.2	29.5	COAL	5.	3.				8.
17.37	85.6	56.4	COAL	3.	1.				4.
			SLTS	19.	7.	3.			29.
20.42	100.0	63.9	SLTS	24.	4.	10.			38.
23.47	59.4	14.3	SLTS		4.	75.			79.
25.91	103.9	33.4	SLTS	31.	5.	20.			56.
28.96	85.2	35.8	SNDS	18.	7.	10.			35.
31.39	91.0	63.9	SNDS	10.	3.				13.
32.61	99.6	45.6	COAL	21.	5.	70.			96.
			MDST	13.	3.				16.
			SLTS	6.					6.
35.20	90.2	17.4	COAL	18.	1.	16.			35.
			MDST	12.	15.	14.			41.
38.25	101.6	28.5	MDST	25.	4.	11.		4.	44.
41.30	102.5	40.0	COAL	7.	1.	2.			10.
			MDST			28.		20.	48.
44.50	30.3	.0	MDST			30.			30.
46.48	53.3	.0	COAL			20.			20.
			MDST	6.				1.	7.
47.70	97.5	34.1	MDST	16.	5.	27.			48.
50.90	95.1	59.3	MDST	3.		8.			11.
53.95	97.4	61.3	MDST			9.			9.
57.00	99.0	77.4	MDST			27.			27.
60.05	101.3	72.0	MDST			17.			17.
63.09	100.0	56.4	MDST			21.			21.
66.14	95.1	73.8	MDST			9.			9.
			SLTS			10.			10.
			SNDS			10.			10.
69.19	100.3	82.0	SLTS	16.		4.			20.

GEOTECHNICAL PROGRAM
TELKWA PROJECT
1983 DATA SUMMARY

LOCATION = TW83D-302

START OF CORE RUN	RECOVERY PERCENT	R.Q.D.	LITHOLOGY	BEDDING FRACTURES	JOINT FRACTURES	UNCLASSIFIED FRACTURES	MINOR FAULT FRACTURES	FAULT ZONE FRACTURES	TOTAL FRACTURES
3.05	41.3	.0	NTRK						
			SLTS	4.	1.				5.
5.18	87.5	40.3	SLTS	13.	10.				23.
8.23	34.4	.0	COAL	5.	2.				7.
			NTRK						
9.45	42.6	.0	COAL	6.	2.				8.
10.06	73.6	16.5	COAL	3.					3.
			OTHR		4.				4.
10.97	94.1	20.3	COAL	5.					5.
			SLTS	15.	14.				29.
14.02	90.1	73.6	SLTS	14.	7.	10.			31.
17.16	94.5	54.7	MDST	7.	6.	3.			16.
			SLTS	9.	10.				19.
20.27	90.6	72.5	MDST						
			SLTS	15.	6.	8.			29.
23.47	100.3	53.1	COAL	7.		10.			17.
			MDST			11.			11.
			SLTS	12.	4.				16.
26.52	99.3	22.6	COAL	9.		8.			17.
			MDST			34.			34.
29.57	99.2	57.2	COAL						
			MDST	12.	7.				19.
32.00	76.0	33.6	COAL						
			MDST	3.	15.	1.			19.
35.66	95.1	42.3	MDST	5.	2.	20.			27.
38.71	99.7	78.0	MDST			13.			13.
41.76	101.0	93.8	MDST			13.			13.
44.81	94.1	77.6	MDST			10.			10.

GEOTECHNICAL PROGRAM
TELKWA PROJECT
1983 DATA SUMMARY

LOCATION = TW83D-303

START OF CORE RUN	RECOVERY PERCENT	R.Q.D.	LITHOLOGY	BEDDING FRACTURES	JOINT FRACTURES	UNCLASSIFIED FRACTURES	MINOR FAULT FRACTURES	FAULT ZONE FRACTURES	TOTAL FRACTURES
7.62	7.1	.0	SLTS			4.			4.
11.28	95.1	60.7	SLTS	6.					6.
11.89	96.7	40.0	COAL	4.	1.				5.
12.19	89.3	48.6	COAL	12.	2.				14.
			MDST	7.		2.			9.
14.33	85.5	36.8	COAL	5.	1.				6.
			MDST	48.	5.	3.			56.
17.37	60.0	6.6	MDST			21.			21.
			NTRK						
20.42	15.1	.0	MDST	6.	3.				9.
23.47	68.9	28.5	MDST	16.		13.			29.
26.52	106.6	27.9	COAL	4.	4.	6.			14.
			MDST			1.			1.
			SLTS	1.	3.				4.
27.74	89.6	51.4	COAL	14.	7.				21.
29.57	93.4	61.2	COAL	10.	6.				16.
			MDST	9.	4.				13.
32.61	91.8	78.4	SLTS	16.	9.	10.			35.
35.66	94.1	76.1	SLTS	12.	9.	10.			31.
38.71	88.5	41.3	SLTS	12.	15.	4.			31.
41.76	95.1	35.4	MDST			41.			41.
44.81	75.7	41.4	MDST			43.			43.
47.85	83.3	50.2	MDST			21.			21.

GEOTECHNICAL PROGRAM
TELKWA PROJECT
1983 DATA SUMMARY

LOCATION = TW83D-304

START OF CORE RUN	RECOVERY PERCENT	R.Q.D.	LITHOLOGY	BEDDING FRACTURES	JOINT FRACTURES	UNCLASSIFIED FRACTURES	MINOR FAULT FRACTURES	FAULT ZONE FRACTURES	TOTAL FRACTURES
5.18	62.0	.0	COAL	9.		15.			24.
			MDST			21.			21.
			SLTS			15.			15.
7.92	67.2	.0	COAL	6.	1.	10.			17.
8.53	88.5	19.7	COAL	9.					9.
9.14	101.4	67.3	COAL	7.					7.
			SLTS	12.	2.	1.			15.
11.28	97.0	50.8	SNDS	10.	10.	7.			27.
14.33	100.3	64.1	SNDS	10.	6.	8.			24.
17.37	99.0	40.3	SLTS	22.	8.				30.
			SNDS	6.	1.				7.
20.42	86.2	48.9	SLTS	13.		4.			17.
			SNDS	6.	1.	25.			32.
23.47	99.3	54.8	COAL	2.	4.				6.
			SNDS	21.	7.	6.			34.
26.52	94.9	35.0	COAL	6.	1.				7.
			MDST	7.					7.
27.89	85.7	41.1	COAL		5.				5.
			MDST	6.	2.				8.
29.57	95.7	29.9	COAL	2.	2.				4.
			MDST	31.	5.	3.			39.
32.61	96.7	13.8	MDST			127.			127.
35.66	82.0	21.3	COAL	5.	2.	2.			9.
			MDST		3.	22.			25.
38.71	68.0	28.7	COAL	19.	5.				24.
39.93	92.3	46.4	COAL	7.	1.	1.			9.
			MDST	9.	2.				11.
41.76	83.6	20.3	MDST	26.	5.	33.			64.
44.81	100.3	26.3	MDST			33.			33.
47.85	79.3	44.6	MDST			60.			60.
50.90	101.6	31.1	MDST			48.			48.
53.95	103.3	43.0	MDST			43.			43.
57.00	93.4	70.8	MDST	10.	2.				12.
			SNDS	3.	2.	8.			13.

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GEOTECHNICAL PROGRAM
TELKWA PROJECT
1983 DATA SUMMARY

LOCATION = TW83D-305

START OF CORE RUN	RECOVERY PERCENT	R.Q.D.	LITHOLOGY	BEDDING FRACTURES	JOINT FRACTURES	UNCLASSIFIED FRACTURES	MINOR FAULT FRACTURES	FAULT ZONE FRACTURES	TOTAL FRACTURES
.55	100.0	.0	OTHR			10.			10.
			SLTS	9.	4.	15.			28.
14.33	-1.0	.0	NDAT						
14.93	14.8	.0	MDST			5.			5.
			OTHR			40.			40.
16.76	23.4	10.0	COAL	3.	2.	5.		30.	40.
17.37	40.0	16.1	COAL			30.			30.
			MDST			31.			31.
20.42	88.5	36.4	MDST	9.	3.	9.			21.
			SNDS			14.			14.
23.47	4.9	.0	NTRK						
26.53	75.0	.0	MDST			59.			59.
			NTRK						
29.57	50.0	.0	NTRK						
30.33	51.3	.0	MDST			14.			14.
32.61	43.6	11.3	MDST			42.			42.
35.36	92.7	60.3	COAL	10.		5.			15.
			MDST	9.	1.	10.			20.
			SNDS		2.	20.			22.
38.53	83.2	38.2	COAL						
			MDST	8.					8.
			SNDS	10.	4.				14.
41.15	97.2	68.1	MDST		3.	23.			26.
44.35	87.3	70.4	COAL						
			MDST			14.			14.
47.73	93.2	38.3	COAL	30.	4.	1.			35.
50.84	95.8	41.2	COAL	21.					21.
			MDST	7.					7.
53.95	95.1	82.3	MDST	16.	3.				19.

GEOTECHNICAL PROGRAM
TELKWA PROJECT
1983 DATA SUMMARY

LOCATION = TW83D-306

START OF CORE RUN	RECOVERY PERCENT	R.Q.D.	LITHOLOGY	BEDDING FRACTURES	JOINT FRACTURES	UNCLASSIFIED FRACTURES	MINOR FAULT FRACTURES	FAULT ZONE FRACTURES	TOTAL FRACTURES
8.23	59.2	.0	SNDS	4.					4.
9.75	31.5	.0	COAL			8.			8.
10.67	59.6	.0	COAL			7.			7.
			NTRK						
12.80	54.9	.0	SLTS	10.		10.			20.
14.02	44.9	.0	SNDS	10.		50.			60.
16.45	66.1	10.4	SNDS	13.	2.	36.			51.
19.81	37.9	9.3	SLTS	10.		30.			40.
23.16	37.6	.0	COAL			60.			60.
			SLTS	8.	3.	30.			41.
26.52	98.4	42.6	COAL	2.					2.
			MDST	17.	7.				24.
			SNDS	5.	2.				7.
29.57	90.1	10.5	COAL	11.	2.	45.			58.
			MDST	12.	1.	15.		5.	33.
32.61	88.5	.0	COAL	13.	3.	20.			36.
			MDST	30.	1.	11.		1.	43.
35.66	75.7	6.6	MDST	32.	37.	30.		6.	105.
			OTHR						
38.71	66.6	.0	COAL	17.	6.				23.
			MDST	5.					5.
			SNDS	7.					7.
41.76	101.0	.0	SNDS	25.	7.	15.			47.
44.81	97.0	28.0	SNDS	23.	7.	24.		20.	74.
47.85	95.4	31.1	SLTS		3.	6.			9.
			SNDS	25.	5.	12.			42.
50.90	101.0	50.2	NDAT		1.				1.
			NTRK						
			SLTS	5.	1.				6.
			SNDS	15.	3.	50.			68.
53.95	101.0	64.6	SNDS	24.	1.	5.			30.
57.00	90.8	41.3	COAL	16.		10.			26.
			SLTS		1.				1.
			SNDS	9.	3.				12.
60.05	89.1	16.4	COAL	9.	1.				10.
			MDST			34.			34.
63.09	91.6	.0	MDST			15.		6.	21.
65.84	77.0	.0	COAL	9.	1.	6.			16.
			MDST	11.	5.	28.			44.
68.88	59.6	.0	COAL	14.	1.	12.			27.
			MDST	8.	2.			53.	63.
71.63	81.7	33.3	COAL	7.	1.				8.
			MDST	22.	5.				27.
75.29	99.7	68.4	MDST	19.	1.				20.
			NDAT		1.	6.			7.
78.33	98.0	74.4	NDAT	23.	2.				25.

GEOTECHNICAL PROGRAM
TELKWA PROJECT
1983 DATA SUMMARY

LOCATION = TW83D-306

START OF CORE RUN	RECOVERY PERCENT	R.Q.D.	LITHOLOGY	BEDDING FRACTURES	JOINT FRACTURES	UNCLASSIFIED FRACTURES	MINOR FAULT FRACTURES	FAULT ZONE FRACTURES	TOTAL FRACTURES
81.38	99.7	33.9	MDST			2.			2.
			NDAT	26.	1.				27.
84.42	98.7	.0	MDST			39.			39.

Printed on the Xerox 9700 E.P.S

GEOTECHNICAL PROGRAM
TELKWA PROJECT
1983 DATA SUMMARY

LOCATION = TW83D-307

START OF CORE RUN	RECOVERY PERCENT	R.Q.D.	LITHOLOGY	BEDDING FRACTURES	JOINT FRACTURES	UNCLASSIFIED FRACTURES	MINOR FAULT FRACTURES	FAULT ZONE FRACTURES	TOTAL FRACTURES
6.40	97.3	.0	MDST	15.	5.				20.
			OTHR			10.			10.
8.23	90.5	.0	MDST			28.			28.
11.28	70.7	.0	MDST			42.			42.
14.32	83.9	13.1	MDST			5.			5.
			SNDS			54.			54.
20.42	96.7	21.3	COAL	7.		10.			17.
			SLTS	12.	2.				14.
			SNDS			17.			17.
23.47	100.0	.0	COAL	2.		3.			5.
			SNDS	35.	3.	4.			42.
26.52	88.5	10.2	SNDS	31.	3.	43.		1.	78.
29.56	77.9	32.4	MDST			5.		30.	35.
			SNDS	8.	2.	10.		3.	23.
32.00	88.7	.0	COAL	6.		5.			11.
			MDST	12.	1.				13.
			SLTS	9.		3.		1.	13.
34.42	71.0	.0	COAL			25.			25.
34.75	86.7	.0	COAL			25.			25.
35.05	92.2	.0	COAL	12.		1.			13.
			MDST			70.			70.
37.49	80.6	.0	COAL	9.		4.			13.
37.80	78.3	.0	COAL	9.		15.			24.
38.40	93.5	.0	COAL	8.					8.
38.71	52.5	.0	COAL		1.				1.
39.32	97.7	.0	COAL	7.		10.			17.
			SLTS	25.	2.				27.
41.45	98.7	7.5	MDST	42.	5.				47.
44.50	100.3	9.5	MDST	23.	3.	8.			34.
			SNDS	10.	2.				12.
47.55	99.3	35.4	SLTS	29.	4.	4.			37.
			SNDS	2.					2.
50.59	88.9	12.8	MDST	22.	4.	23.			49.
			SLTS	3.	3.	3.			9.
53.64	96.7	.0	COAL	2.					2.
			MDST	20.				9.	29.
54.86	67.4	.0	COAL	6.		15.			21.
55.32	100.0	.0	COAL			32.			32.
			MDST	9.	3.	2.		100.	114.
56.59	83.6	.0	SLTS	8.	3.				11.
			SNDS	6.	6.				12.
58.52	77.0	.0	CBSH	5.			2.		7.
			COAL		1.	45.			46.
59.13	62.3	.0	CBSH			3.			3.
			COAL						
59.74	45.7	.0	CBSH			1.			1.

GEOTECHNICAL PROGRAM
TELKWA PROJECT
1983 DATA SUMMARY

LOCATION = TW83D-307

START OF CORE RUN	RECOVERY PERCENT	R.Q.D.	LITHOLOGY	BEDDING FRACTURES	JOINT FRACTURES	UNCLASSIFIED FRACTURES	MINOR FAULT FRACTURES	FAULT ZONE FRACTURES	TOTAL FRACTURES
59.74	45.7	.0	COAL			50.			50.
60.20	56.8	.0	COAL	25.	1.	200.			226.
			MDST	13.	1.	3.		100.	117.
62.79	98.7	.0	MDST		2.	28.		99.	129.
65.84	99.3	34.5	MDST	4.		2.		4.	10.
68.88	93.4	56.4	MDST	31.	1.	3.		8.	43.
71.93	81.6	26.6	COAL	22.		3.			25.
			MDST	14.		6.		10.	30.
74.98	75.0	.0	COAL	19.	1.	10.			30.
			MDST			3.			3.
			NTRK					100.	100.
77.42	69.7	.0	COAL	10.				25.	35.
			MDST	11.	3.			53.	67.
			NTRK					1.	1.
79.86	76.2	16.4	COAL	5.					5.
			MDST	11.				6.	17.
81.08	86.9	10.9	MDST	6.				31.	37.
			SNDS	20.	7.	20.			47.
83.82	89.0	6.3	COAL	4.		15.			19.
			MDST					50.	50.
			SNDS	25.	6.				31.
87.17	23.0	.0	COAL					1020.	1020.
90.22	100.0	.0	COAL	35.					35.
			MDST	20.	3.				23.
91.13	88.3	.0	COAL	7.		6.			13.
			MDST	4.		10.		57.	71.
93.27	77.0	.0	COAL	4.		25.			29.
			MDST	15.		13.		5.	33.
96.32	101.3	27.0	MDST	16.	3.				19.
			SLTS	28.	3.				31.
99.36	87.7	34.4	MDST	49.	15.	14.		30.	108.
105.46	100.0	27.9	MDST			12.		14.	26.
108.51	100.0	52.5	MDST			16.			16.

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TELKWA PROJECT
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LOCATION = TW83D-308

START OF CORE RUN	RECOVERY PERCENT	R.Q.D.	LITHOLOGY	BEDDING FRACTURES	JOINT FRACTURES	UNCLASSIFIED FRACTURES	MINOR FAULT FRACTURES	FAULT ZONE FRACTURES	TOTAL FRACTURES
11.28	6.6	.0	NTRK			25.			25.
12.80	50.0	.0	SNDS			63.			63.
14.32	77.2	.0	SLTS	10.					10.
15.24	110.0	70.0	COAL	3.	2.				5.
			SLTS	3.					3.
15.54	98.9	38.3	COAL	8.	1.				9.
			MDST			25.			25.
			SLTS	7.	4.	2.			13.
17.37	96.7	20.3	SNDS	25.	3.	32.			60.
20.42	86.3	10.9	CBSH			5.			5.
			MDST	29.		1.			30.
			SNDS	2.					2.
22.25	101.6	34.4	COAL	9.	2.				11.
22.86	86.5	.0	COAL	14.	3.				17.
			MDST	27.		16.			43.
25.60	124.6	77.0	COAL	8.					8.
26.21	87.0	37.0	COAL	6.					6.
26.67	103.3	63.9	COAL	8.					8.
27.28	93.9	50.9	COAL	7.	1.				8.
			MDST	15.	1.				16.
29.56	96.1	40.0	MDST	33.	1.	1.			35.
32.61	95.7	52.1	MDST	27.	2.	12.			41.
35.66	100.0	16.4	MDST	10.	1.				11.
			SLTS	31.	3.	37.			71.
38.71	93.8	.0	MDST	16.	2.	10.			28.
			SLTS	17.	5.	8.			30.
41.76	97.4	32.6	MDST	42.	6.	1.			49.
44.80	88.5	23.0	MDST	22.	5.	16.			43.
47.85	108.7	.0	COAL	16.	3.				19.
48.77	68.1	11.7	COAL	3.	1.				4.
			MDST	7.				57.	64.
50.90	90.2	10.2	COAL	16.	11.				27.
			MDST	22.	5.				27.
53.95	99.0	.0	MDST	45.	5.				50.
57.00	88.5	17.4	COAL	4.					4.
			MDST	15.	2.			50.	67.
			SNDS	10.	5.	3.			18.
60.04	88.3	.0	COAL	10.	1.	1.			12.
			MDST	5.			1.	50.	56.
60.81	55.3	12.4	COAL	16.	4.	17.			37.
63.09	60.0	.0	COAL	2.	3.			25.	30.
			MDST	100.	3.			103.	206.
			NTRK						
66.14	74.4	.0	MDST	15.				16.	31.
			NTRK						
69.19	37.7	.0	MDST	50.				23.	73.

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START OF CORE RUN	RECOVERY PERCENT	R.Q.D.	LITHOLOGY	BEDDING FRACTURES	JOINT FRACTURES	UNCLASSIFIED FRACTURES	MINOR FAULT FRACTURES	FAULT ZONE FRACTURES	TOTAL FRACTURES
72.24	65.0	.0	COAL					25.	25.
			MDST	25.				22.	47.
74.07	63.6	.0	COAL	4.				64.	68.
75.28	51.6	.0	COAL	2.				21.	23.
75.90	86.4	.0	COAL	2.				50.	52.
			MDST					17.	17.
78.33	58.7	11.1	COAL	2.				15.	17.
			MDST			5.		9.	14.
81.38	80.0	.0	COAL	3.					3.
			MDST	15.				60.	75.
			SNDS	22.					22.
84.43	92.1	43.3	COAL	15.	2.	10.			27.
			MDST	16.	2.				18.
87.48	99.0	56.9	COAL	6.					6.
			MDST	23.					23.
90.52	98.0	63.3	MDST	32.					32.

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LOCATION = TW83D-309

START OF CORE RUN	RECOVERY PERCENT	R.Q.D.	LITHOLOGY	BEDDING FRACTURES	JOINT FRACTURES	UNCLASSIFIED FRACTURES	MINOR FAULT FRACTURES	FAULT ZONE FRACTURES	TOTAL FRACTURES
8.84	79.1	.0	COAL	6.		6.			12.
			MDST			7.			7.
9.75	69.3	.0	COAL	5.	1.	6.			12.
			MDST			33.			33.
11.28	73.8	.0	COAL	3.	1.				4.
			MDST	4.	1.	9.			14.
13.11	82.6	.0	COAL	3.		8.			11.
			MDST	4.	1.	7.			12.
14.32	46.8	.0	MDST	3.					3.
			NTRK						
14.94	37.9	.0	MDST	18.	2.	25.			45.
17.37	33.5	.0	MDST	15.	3.	8.			26.
20.12	73.3	14.0	COAL	4.	2.				6.
			MDST	31.	4.	251.			286.
24.69	82.9	46.1	COAL	8.	3.				11.
25.45	61.5	.0	COAL	12.	2.	15.			29.
26.36	77.6	.0	COAL	8.	3.	10.			21.
			MDST	6.	8.				14.
28.50	69.6	.0	COAL	7.	2.				9.
28.96	95.6	42.5	COAL	4.	2.				6.
			MDST	8.		5.			13.
			SLTS	12.	3.	30.			45.
32.16	92.5	59.1	SLTS	24.	2.	20.			46.
35.51	91.2	.0	SLTS	32.	9.	6.			47.
38.71	96.7	.0	SLTS	25.	5.	300.			330.
40.54	95.9	54.1	SNDS	9.	2.	10.			21.
41.76	77.6	45.1	SNDS	16.	2.	10.			28.
44.80	88.9	45.1	COAL	10.	2.				12.
			SNDS	7.					7.
46.33	91.4	40.8	COAL	6.	4.				10.
			MDST	8.	2.	6.			16.
47.85	79.4	.0	COAL	10.	5.				15.
			MDST	5.	6.				11.
49.99	98.6	33.8	COAL	3.	1.				4.
			MDST	14.	7.				21.
52.12	90.7	32.2	MDST	14.	4.	25.			43.
53.95	92.3	42.1	MDST	15.	1.	59.			75.
55.78	40.2	.0	COAL	2.		3.			5.
			MDST	2.		40.			42.
57.00	11.2	.0	COAL			50.			50.
60.04	74.2	.0	COAL	4.	1.				5.
60.66	68.7	.0	COAL	6.	4.	32.			42.
			MDST	8.	1.	25.		25.	59.
62.48	84.6	15.4	MDST			102.			102.
			SLTS	33.	8.	20.			61.
65.99	92.8	.0	MDST			18.			18.

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START OF CORE RUN	RECOVERY PERCENT	R.Q.D.	LITHOLOGY	BEDDING FRACTURES	JOINT FRACTURES	UNCLASSIFIED FRACTURES	MINOR FAULT FRACTURES	FAULT ZONE FRACTURES	TOTAL FRACTURES
9.14	83.6	.0	COAL	4.	1.				5.
			SLTS	6.	1.				7.
9.75	63.9	.0	COAL	8.		20.			28.
10.36	70.5	22.5	SNDS	15.	3.	45.			63.
12.80	97.4	28.9	SNDS	21.	1.	13.			35.
14.32	85.2	.0	MDST	16.	8.	35.			59.
			SNDS	5.	1.	10.			16.
17.37	80.3	45.9	COAL	2.					2.
			MDST	3.	1.				4.
17.98	71.1	53.9	COAL	4.	2.				6.
18.74	85.8	.0	COAL	4.	3.	15.			22.
			MDST	18.	2.	20.			40.
20.42	83.6	.0	COAL	3.					3.
			MDST	6.					6.
21.03	100.0	.0	COAL	6.		25.			31.
21.49	82.2	48.9	COAL	5.					5.
21.94	88.5	54.1	COAL	3.	2.				5.
22.55	148.4	67.7	COAL	8.					8.
22.86	70.5	22.6	COAL	3.					3.
			MDST	19.	4.	25.			48.
25.66	83.6	43.0	MDST	12.			10.		22.
			SNDS	11.	3.	10.			24.
25.91	71.8	38.1	MDST	25.	1.	9.			35.
29.56	99.7	49.8	MDST	7.		3.			10.
			SLTS	6.	3.				9.
			SNDS	14.					14.
32.61	91.5	44.9	SNDS	20.	3.	7.			30.
38.71	96.1	46.9	COAL	7.					7.
			MDST	25.	4.	9.		20.	58.
42.06	98.4	77.0	COAL	5.					5.
42.67	98.6	12.2	COAL	8.	1.	6.			15.
			MDST	4.	18.		25.		47.
44.80	85.8	40.7	MDST	9.	1.	14.			24.
			SNDS	12.		2.			14.
47.55	90.2	.0	COAL	14.	4.				18.
			MDST	9.	5.	17.			31.
49.38	91.4	.0	COAL	13.	2.	12.			27.
			MDST			11.			11.
50.90	68.0	.0	COAL	15.				212.	227.
52.12	30.6	.0	COAL	6.	2.	50.		6.	64.
53.95	85.6	.0	COAL	4.	1.	25.			30.
			MDST	8.	4.	31.			43.
			SNDS	11.	5.	7.			23.
57.00	91.8	.0	SNDS	31.	22.	6.			59.
60.04	101.6	.0	SNDS	32.	22.				54.
63.09	76.7	.0	SNDS	24.	2.	30.			56.

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1983 DATA SUMMARY

LOCATION = TW83D-310

START OF CORE RUN	RECOVERY PERCENT	R.Q.D.	LITHOLOGY	BEDDING FRACTURES	JOINT FRACTURES	UNCLASSIFIED FRACTURES	MINOR FAULT FRACTURES	FAULT ZONE FRACTURES	TOTAL FRACTURES
66.14	97.4	13.4	SLTS	14.	2.				16.
			SNDS	28.	3.	4.			35.
69.19	40.3	.0	MDST	6.		200.		1.	207.
			SNDS	7.	3.	34.			44.
72.24	90.0	.0	COAL	10.	3.	2.			15.
72.54	82.1	.0	MDST	39.	5.	65.		6.	115.
75.28	68.9	.0	COAL	6.					6.
			MDST	34.	7.			4.	45.
78.33	24.6	.0	COAL					500.	500.
79.55	76.5	9.3	COAL	25.	4.				29.
			MDST	7.				26.	33.
81.38	101.0	43.3	COAL	1.					1.
			MDST	36.	1.				37.
84.43	103.0	63.9	MDST	28.	2.				30.
87.48	98.7	92.1	MDST	16.					16.

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1983 DATA SUMMARY

LOCATION = TW83D-311

START OF CORE RUN	RECOVERY PERCENT	R.Q.D.	LITHOLOGY	BEDDING FRACTURES	JOINT FRACTURES	UNCLASSIFIED FRACTURES	MINOR FAULT FRACTURES	FAULT ZONE FRACTURES	TOTAL FRACTURES
3.05	55.4	.0	SLTS	10.	1.	16.			27.
5.18	69.8	7.5	SNDS	35.	3.	9.			47.
8.23	70.1	.0	MDST	9.		42.			51.
			SNDS	15.	2.	4.			21.
10.67	60.7	.0	MDST	9.	3.	50.			62.
11.89	75.4	.0	COAL	9.		5.			14.
12.50	83.0	.0	COAL	5.	1.				6.
			MDST	31.	2.				33.
14.32	33.6	.0	COAL	4.	3.	10.			17.
15.54	27.9	.0	COAL	12.	2.	8.			22.
17.37	19.1	.0	COAL	9.	1.	15.			25.
19.20	54.1	.0	COAL	4.	6.	15.			25.
			MDST	6.				7.	13.
20.42	86.2	23.0	MDST	36.	3.	24.			63.

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LOCATION = TW83D-312

START OF CORE RUN	RECOVERY PERCENT	R.Q.D.	LITHOLOGY	BEDDING FRACTURES	JOINT FRACTURES	UNCLASSIFIED FRACTURES	MINOR FAULT FRACTURES	FAULT ZONE FRACTURES	TOTAL FRACTURES
4.27	92.3	.0	OTHR			10.			10.
			SLTS	13.	4.				17.
5.18	40.3	5.9	SLTS	14.	1.	10.			25.
8.23	30.5	.0	SNDS	10.	3.	15.			28.
11.28	36.1	.0	SLTS	13.		101.			114.
14.33	45.1	.0	SLTS	13.					13.
16.15	38.5	.0	SLTS	4.		50.			54.
17.37	41.3	4.9	COAL	5.	1.				6.
			MDST	9.	1.				10.
			SLTS	9.					9.
20.42	92.5	4.9	COAL	6.	3.				9.
			MDST	34.	15.	10.			59.
23.47	98.4	34.4	COAL	4.	1.				5.
			MDST	37.	4.				41.
26.52	87.9	.0	COAL	10.	1.				11.
			MDST	38.	12.				50.
29.57	34.8	.0	MDST	16.	7.	25.			48.
32.61	94.8	17.4	COAL	1.					1.
			MDST	34.	5.	3.			42.
35.66	93.1	28.9	MDST	27.	4.	13.			44.
38.71	95.7	22.0	MDST	20.	2.	22.			44.
41.76	94.2	22.0	MDST			33.			33.
44.81	91.4	22.7	MDST			29.			29.
47.85	87.2	27.2	MDST			27.			27.
50.90	99.3	31.8	MDST			60.			60.
53.95	109.9	17.9	MDST			81.			81.
56.69	93.5	35.6	MDST			42.			42.
			SNDS			3.			3.

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START OF CORE RUN	RECOVERY PERCENT	R.Q.D.	LITHOLOGY	BEDDING FRACTURES	JOINT FRACTURES	UNCLASSIFIED FRACTURES	MINOR FAULT FRACTURES	FAULT ZONE FRACTURES	TOTAL FRACTURES
6.70	38.7	.0	COAL	6.		6.			12.
7.32	56.7	.0	COAL	6.	1.	4.			11.
7.92	60.8	.0	COAL	6.	1.				7.
			MDST			36.			36.
9.45	75.4	.0	COAL	4.		10.			14.
			MDST			7.			7.
10.06	77.0	.0	COAL	10.	1.	25.			36.
10.67	68.9	.0	COAL	10.		7.			17.
11.28	50.7	.0	COAL	6.	1.				7.
			MDST	7.	4.	53.			64.
14.32	32.8	.0	MDST	14.	1.	49.			64.
17.37	96.1	.0	COAL	2.		6.			8.
			MDST	8.	5.	15.			28.
18.14	58.8	.0	COAL	10.	1.	31.			42.
20.42	83.6	4.3	COAL	6.	4.				10.
			MDST			45.			45.
			SNDS	10.	1.				11.
23.47	92.1	25.2	SNDS	19.	8.	10.			37.
26.52	94.1	18.7	SNDS	14.	7.	6.			27.
29.56	82.3	20.7	MDST			59.			59.
			SNDS	9.	4.	5.			18.
32.61	104.6	.0	MDST			20.			20.
			SNDS	9.		25.			34.
35.66	28.2	.0	COAL	5.		10.			15.
			MDST			112.			112.
38.71	16.4	.0	MDST					103.	103.
40.54	91.8	.0	MDST			19.			19.
41.76	36.7	.0	COAL	2.					2.
			MDST			25.		46.	71.
44.80	24.2	.0	MDST			25.			25.
45.42	21.7	.0	COAL			25.			25.
46.02	30.6	.0	COAL						
			MDST			6.			6.
47.85	94.1	.0	MDST			24.			24.
50.90	98.0	.0	COAL			20.			20.
			MDST			18.			18.
52.42	43.8	.0	COAL	3.	1.	20.			24.
			MDST			10.			10.
53.95	64.8	.0	COAL	6.		2.		10.	18.
			MDST			11.			11.
55.17	79.8	.0	COAL	12.	5.	3.			20.
57.00	95.4	32.6	COAL	7.	2.				9.
			MDST	2.		6.			8.
			SLTS	11.		6.			17.
60.04	99.7	73.4	SLTS	16.		1.			17.
			SNDS	8.	1.	3.			12.

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LOCATION = TW83D-313

START OF CORE RUN	RECOVERY PERCENT	R.Q.D.	LITHOLOGY	BEDDING FRACTURES	JOINT FRACTURES	UNCLASSIFIED FRACTURES	MINOR FAULT FRACTURES	FAULT ZONE FRACTURES	TOTAL FRACTURES
63.09	98.0	50.8	MDST		1.	20.			21.
			SLTS	4.	1.	2.			7.

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START OF CORE RUN	RECOVERY PERCENT	R.Q.D.	LITHOLOGY	BEDDING FRACTURES	JOINT FRACTURES	UNCLASSIFIED FRACTURES	MINOR FAULT FRACTURES	FAULT ZONE FRACTURES	TOTAL FRACTURES
5.18	12.1	.0	SLTS	11.		25.			36.
8.23	9.8	.0	SLTS	9.		30.			39.
11.28	20.7	.0	SLTS	13.		100.			113.
14.32	33.1	.0	SNDS	7.	3.	29.			39.
17.37	91.0	.0	SLTS	1.	2.	10.			13.
			SNDS	3.	2.				5.
19.81	12.5	.0	SLTS		1.	25.			26.
23.16	22.0	.0	NTRK						
26.21	25.9	.0	MDST			23.			23.
29.26	48.4	.0	MDST			28.			28.
31.39	18.0	.0	SLTS						
32.61	66.2	.0	COAL	1.	2.	15.			18.
			MDST	3.	11.	10.			24.
			SLTS	1.					1.
35.66	45.9	.0	MDST	2.		39.			41.
38.71	58.2	.0	COAL			6.			6.
			MDST					30.	30.
39.62	75.7	.0	COAL			21.			21.
			MDST					14.	14.
41.76	80.6	.0	COAL	25.	1.				26.
			MDST		2.	72.		10.	84.
44.80	83.9	.0	COAL	3.					3.
			MDST			23.			23.
45.42	40.7	.0	COAL	7.		10.			17.
			MDST			46.			46.
47.85	62.0	.0	COAL	10.					10.
			MDST			6.			6.
48.77	45.9	.0	COAL	10.	7.	10.			27.
49.99	67.0	.0	COAL	9.	1.	11.			21.
50.90	44.6	.0	COAL	3.	1.			30.	34.
51.82	69.5	.0	COAL					31.	31.
			MDST			4.		15.	19.
53.95	97.0	.0	MDST	8.	7.	3.			18.

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START OF CORE RUN	RECOVERY PERCENT	R.Q.D.	LITHOLOGY	BEDDING FRACTURES	JOINT FRACTURES	UNCLASSIFIED FRACTURES	MINOR FAULT FRACTURES	FAULT ZONE FRACTURES	TOTAL FRACTURES
9.45	83.6	.0	MDST	5.	3.	15.			23.
11.28	67.8	20.8	MDST	3.		60.			63.
13.11	69.0	.0	MDST	5.	8.	6.			19.
15.24	90.6	.0	MDST	4.	4.	5.			13.
17.37	98.4	26.9	MDST	6.	3.	16.			25.
20.42	85.2	13.4	MDST			24.			24.
23.47	100.0	.0	MDST			44.			44.
26.52	90.5	5.9	MDST	1.		17.			18.
29.56	79.0	.0	MDST			49.			49.
32.31	86.2	.0	MDST	18.	6.	62.			86.
35.51	64.7	4.7	SLTS	32.	16.	53.			101.
			SNDS	1.					1.
38.71	62.7	10.2	SLTS	11.	1.	28.			40.
			SNDS	7.	3.	20.			30.
41.15	97.7	.0	SNDS	23.	2.	3.			28.
44.20	131.7	26.7	COAL	1.					1.
			SNDS	15.		3.			18.
44.80	92.5	.0	COAL	4.		6.			10.
			MDST	27.	6.			15.	48.
47.85	95.1	5.6	MDST	46.	7.				53.
50.90	99.3	15.1	MDST	46.	12.				58.
53.95	88.2	.0	COAL	2.	2.				4.
			MDST	32.	8.				40.
56.24	66.7	.0	COAL	10.	3.	50.			63.
56.84	97.6	5.2	COAL	4.	3.				7.
			MDST	10.	1.				11.
			SLTS	29.	15.	10.			54.
59.74	87.6	.0	SLTS	28.	10.	6.			44.
			SNDS	9.		25.			34.
62.48	64.7	.0	MDST						
			SNDS	11.	2.				13.
64.01	24.6	.0	COAL						
			MDST						
64.14	82.0	.0	COAL	14.	2.				16.
64.62	61.5	.0	COAL	1.		20.			21.
			MDST						
65.53	18.0	.0	COAL					30.	30.
66.75	99.2	13.9	COAL	3.					3.
			MDST	21.	8.				29.
			SLTS	12.	3.				15.
69.19	91.8	43.3	MDST	9.	1.				10.
			SLTS	11.	6.	15.			32.
72.24	100.7	43.1	MDST	29.	9.				38.
75.28	99.0	15.1	MDST			46.			46.
78.33	92.8	23.3	MDST			45.			45.

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5.18	91.0	6.6	SLTS			24.			24.
			SNDS			10.			10.
7.62	85.5	23.0	SLTS			25.			25.
			SNDS			28.			28.
11.28	84.9	7.9	COAL	12.		3.			15.
			SLTS	14.					14.
12.80	92.8	.0	SLTS	23.	2.				25.
14.32	95.7	.0	SNDS	46.	6.	3.			55.
17.37	81.0	.0	MDST	9.	1.	20.			30.
			SNDS	22.	5.				27.
20.42	32.2	.0	MDST	13.		31.			44.
22.56	105.3	.0	COAL	5.					5.
			MDST	24.	1.				25.
24.08	61.3	22.6	COAL	9.	3.				12.
25.76	88.2	38.2	COAL	8.	2.	11.			21.
26.52	92.5	.0	COAL	4.	3.				7.
			SLTS	38.	1.				39.
29.56	91.5	.0	SLTS	43.	4.	1.			48.
			SNDS	10.	1.				11.
32.61	98.7	6.9	SLTS	63.	1.				64.
35.66	94.1	19.3	SNDS	41.	4.				45.
38.71	98.4	20.7	SNDS	44.	1.	31.			76.
41.76	91.8	3.9	COAL	1.		8.			9.
			MDST	20.					20.
			SLTS	29.	1.	6.			36.
44.80	98.7	.0	MDST	45.	1.	6.			52.
47.85	90.8	19.6	COAL	4.					4.
			MDST	16.					16.
49.38	120.0	.0	COAL	4.	3.				7.
49.68	100.0	.0	COAL	8.	2.				10.
50.14	96.1	13.1	COAL	4.					4.
			MDST	41.	3.	25.			69.
53.19	96.7	34.9	COAL	4.	1.				5.
			SLTS	11.		6.			17.
			SNDS	6.					6.
54.71	87.3	8.7	COAL	8.	1.				9.
			MDST	17.	3.			5.	25.
57.00	113.3	.0	COAL	5.	3.				8.
57.30	92.3	22.3	CBSH	21.	1.			20.	42.
			COAL	4.					4.
			MDST	24.					24.
60.04	113.1	26.8	COAL	3.					3.
			MDST	37.	3.				40.
61.57	82.0	37.7	COAL	7.	1.				8.
62.18	123.3	.0	COAL	6.					6.
62.48	93.1	32.5	COAL	2.					2.

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62.48	93.1	32.5	MDST	43.	2.				45.
65.68	90.9	51.6	MDST	29.					29.
68.88	109.0	67.2	COAL	3.					3.
			MDST	10.					10.
70.10	104.9	.0	COAL	19.					19.
70.71	68.5	.0	COAL	10.		16.			26.
71.63	60.0	.0	COAL	6.		6.			12.
71.93	94.1	.0	COAL	8.					8.
72.24	83.3	.0	COAL	4.		10.			14.
72.54	95.7	.0	COAL	9.		3.			12.
			MDST	3.					3.
73.00	97.4	.0	COAL	3.					3.
			MDST	17.					17.
73.76	78.9	38.2	COAL	11.					11.
74.52	89.5	.0	COAL	17.	1.	2.			20.
			NDAT			4.			4.
75.28	96.4	68.9	COAL						
			MDST	10.					10.
			NDAT	13.					13.
			SLTS	10.	1.				11.
78.33	97.4	60.7	SLTS	10.	1.	1.			12.
			SNDS	16.					16.
81.38	98.4	42.3	SNDS	37.	1.	30.			68.
84.43	87.9	35.4	SNDS	24.	10.	5.			39.

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3.35	39.9	.0	SLTS	2.	6.				8.
5.18	50.8	.0	SLTS	5.		15.			20.
6.40	29.9	.0	SLTS	1.	1.	10.			12.
7.47	23.1	.0	SLTS	7.	7.	20.			34.
11.28	21.7	.0	SLTS			50.			50.
14.32	97.7	11.1	SNDS	51.	16.	1.			68.
17.37	60.0	50.5	SLTS	12.	3.				15.
			SNDS	22.	4.				26.
20.42	94.8	23.3	SLTS			44.			44.
23.47	96.7	74.4	SLTS			30.			30.
26.52	94.4	72.7	SLTS	21.	1.				22.
29.56	94.1	35.1	SLTS	19.	11.				30.
32.61	95.7	16.4	SLTS	16.	24.	3.			43.
35.66	85.6	14.1	SLTS	28.	10.				38.
38.71	93.8	27.9	SLTS	22.	13.	16.			51.
41.76	99.3	31.6	SLTS	22.	5.				27.
44.80	77.0	.0	SLTS	11.	9.		25.		45.
47.85	96.4	.0	SLTS	12.	11.	44.			67.
50.90	75.7	17.7	SLTS	23.	12.	15.			50.
53.95	32.8	.0	SLTS					50.	50.
55.17	83.6	.0	COAL	5.		1.			6.
			SLTS	10.	8.	10.			28.
56.39	75.4	.0	COAL	4.	2.				6.
			MDST	13.	3.	16.			32.
			SNDS			50.			50.
59.44	98.6	.0	SNDS	8.	2.	22.	25.		57.
61.57	88.8	.0	SNDS	10.	13.	3.			26.
63.09	98.4	40.3	SLTS	4.	2.				6.
			SNDS	19.	5.				24.
66.14	89.2	7.9	MDST	16.	6.	50.			72.
			SLTS	15.	4.				19.
69.19	66.0	.0	MDST	23.	4.	30.			57.
71.63	86.1	.0	CBSH	5.					5.
			MDST	17.	3.				20.
72.85	59.0	.0	CBSH	2.					2.
			COAL			25.			25.
			MDST			14.			14.
74.07	26.7	.0	COAL			15.			15.
74.52	85.0	.0	COAL			25.			25.
			MDST	45.	7.	25.			77.
			SLTS	17.	9.				26.
77.72	78.7	.0	MDST	32.	5.	15.			52.
			SNDS	20.	1.	25.			46.
80.77	100.0	.0	SNDS	61.	4.	25.			90.
83.82	92.5	12.5	SNDS	28.	8.	30.			66.
87.17	98.7	20.9	COAL			5.			5.

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87.17	98.7	20.9	SLTS		8.	3.			11.
88.70	87.9	.0	COAL			10.			10.
			MDST	16.	11.	25.			52.
90.52	79.2	.0	COAL	4.		5.			9.
			MDST	8.	5.	25.			38.
92.35	57.4	.0	CBSH						
			COAL	3.		5.			8.
			MDST	6.					6.
			NDAT		2.				2.
93.57	97.7	.0	NDAT	56.	14.				70.
96.62	85.9	.0	COAL			5.			5.
			MDST	34.	8.	50.			92.
			SNDS	3.	4.				7.
99.67	69.2	.0	MDST			75.			75.
100.58	52.2	.0	MDST			18.			18.
101.50	79.5	.0	MDST	21.		15.			36.
102.72	84.9	.0	COAL	29.	2.	5.			36.
			MDST	18.	2.	34.			54.
			SLTS			19.			19.
105.76	100.3	.0	SLTS			47.			47.

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11.28	3.9	.0	OTHR						
14.32	40.7	8.9	SLTS	10.	4.				14.
17.37	94.8	44.3	SNDS	14.	11.				25.
20.42	98.4	52.8	SLTS	19.	3.				22.
23.47	94.4	36.1	SLTS	11.	9.				20.
			SNDS	13.	2.				15.
26.52	90.5	67.1	MDST	23.					23.
29.56	97.0	19.0	MDST	7.					7.
			SLTS	25.	1.	7.			33.
			SNDS		1.	1.			2.
32.61	51.6	17.5	MDST	14.		10.			24.
35.36	106.5	38.5	SLTS	19.	4.	40.			63.
38.10	97.0	67.2	SNDS	17.	3.	15.			35.
41.15	97.7	52.5	SNDS	19.		3.			22.
44.20	99.0	82.6	SNDS	14.	4.				18.
47.20	85.1	24.7	SLTS	8.		18.			26.
50.60	100.0	54.6	SLTS	17.	10.				27.
53.64	99.3	59.7	SLTS			22.			22.
56.69	100.0	43.0	SLTS	9.	9.				18.
			SNDS	4.	3.	3.			10.
59.74	92.8	85.3	SLTS	9.					9.
			SNDS	7.	1.				8.
62.94	92.5	78.4	SNDS	12.		1.			13.
66.14	102.3	94.4	SLTS	5.					5.
			SNDS	7.					7.
69.19	99.3	53.8	SLTS	4.					4.
			SNDS	15.	4.				19.
72.24	97.7	80.0	SNDS	14.	1.				15.
75.28	98.4	81.3	SLTS	20.	4.				24.
78.33	97.4	88.9	SLTS	17.					17.
81.38	99.3	86.2	SLTS	7.					7.
			SNDS	9.	4.				13.
84.43	101.0	86.9	SNDS	14.	2.				16.
87.48	95.3	68.6	COAL	5.					5.
			MDST	7.					7.
			SLTS	4.					4.
			SNDS	2.					2.
90.22	73.9	.0	COAL	4.		28.			32.
90.68	59.8	21.3	COAL	11.	2.				13.
91.90	82.0	.0	COAL	7.					7.
92.51	89.6	12.3	CBSH	5.	1.				6.
			COAL	14.		25.			39.
93.57	72.1	.0	COAL	10.	3.	10.			23.
94.18	44.3	.0	COAL			50.			50.
94.79	63.9	.0	COAL	5.		25.			30.
95.40	87.7	58.2	CBSH	6.					6.

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START OF CORE RUN	RECOVERY PERCENT	R.Q.D.	LITHOLOGY	BEDDING FRACTURES	JOINT FRACTURES	UNCLASSIFIED FRACTURES	MINOR FAULT FRACTURES	FAULT ZONE FRACTURES	TOTAL FRACTURES
95.40	87.7	58.2	COAL	2.					2.
			MDST	5.					5.
96.62	108.4	33.6	CBSH	11.					11.
			COAL	4.					4.
97.69	85.9	32.3	COAL	15.		1.			16.
			MDST	5.	1.				6.
99.67	99.3	53.9	MDST	16.	15.				31.
			SNDS	7.					7.
102.71	100.0	61.0	COAL	4.					4.
			MDST	8.					8.
103.94	94.5	42.9	CBSH	11.					11.
			COAL	5.					5.
			MDST			5.			5.
105.76	89.2	45.9	COAL	2.					2.
			MDST	22.	4.				26.
108.81	91.8	81.0	CBSH	4.					4.
			COAL	5.				1.	6.
			MDST	6.		5.			11.
			SLTS	5.					5.
			SNDS	1.					1.
111.86	100.0	80.3	SLTS	6.	5.				11.
			SNDS	5.					5.
114.91	101.0	76.4	SLTS	15.	4.				19.

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6.10	100.0	.0	COAL	5.		20.			25.
6.40	69.6	.0	COAL	2.					2.
			SLTS	13.	5.	40.			58.
8.08	35.6	.0	SNDS	12.	3.	30.			45.
10.97	58.3	.0	COAL	3.	2.	10.			15.
			NTRK						
			SLTS	8.	5.	50.			63.
13.56	65.6	.0	COAL	8.	1.	21.			30.
14.17	51.9	.0	COAL	5.	2.	1.			8.
			MDST	6.	4.	5.			15.
16.00	67.2	.0	COAL	8.	1.	15.			24.
16.61	32.6	.0	COAL	5.		5.			10.
17.07	47.5	.0	COAL	2.		10.			12.
17.68	91.6	21.9	COAL	6.	1.				7.
			MDST	29.	2.	3.			34.
20.42	97.1	13.9	MDST	33.	9.				42.
23.16	89.2	20.7	MDST	15.	2.				17.
			SNDS	22.	2.				24.
26.21	97.0	12.5	SLTS	15.	2.	5.			22.
			SNDS	24.	2.	3.			29.
29.26	88.2	.0	SLTS	12.	5.	3.			20.
32.61	69.5	.0	MDST	10.	2.	9.			21.
			SLTS	9.	9.	3.			21.
35.36	87.5	43.1	COAL	2.		4.			6.
			MDST	23.	5.				28.
38.40	91.8	27.9	COAL	8.	4.				12.
39.01	95.3	.0	COAL	5.	1.				6.
			MDST	14.	11.				25.
41.15	62.6	.0	MDST	10.	3.	8.			21.
42.06	72.1	.0	COAL	11.	1.				12.
			MDST	13.		12.		17.	42.
44.35	61.7	.0	COAL	2.				15.	17.
			MDST	16.	6.			25.	47.
45.42	56.6	.0	MDST	28.	1.	51.			80.
47.40	54.0	.0	MDST	25.	2.	20.			47.
50.90	63.5	.0	MDST	18.	6.				24.
53.34	32.8	.0	COAL						
			MDST	6.	2.				8.
55.78	39.3	.0	COAL	2.		10.		15.	27.
			MDST	9.	1.				10.
57.91	59.8	.0	COAL	8.				100.	108.
58.83	71.9	.0	COAL	14.		52.			66.
60.04	95.9	24.6	COAL	11.	6.				17.
61.26	103.8	19.7	COAL	6.					6.
			MDST	21.	6.	2.			29.
63.09	98.4	66.2	MDST	23.	1.	4.			28.

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66.14	95.4	48.5	MDST	24.	3.				27.
69.19	99.7	38.4	MDST	21.	8.	10.			39.
72.24	98.7	6.3	MDST			29.			29.
75.28	93.4	31.8	MDST			30.			30.

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3.35	52.7	.0	MDST			30.			30.
8.23	7.8	.0	MDST			25.			25.
10.67	84.2	.0	MDST			22.			22.
13.71	93.4	.0	MDST			122.			122.
16.76	86.0	.0	MDST			21.			21.
20.12	89.0	.0	MDST			12.			12.
			SNDS	6.		15.			21.
23.47	97.4	81.3	SLTS	6.	1.				7.
			SNDS	7.	4.				11.
26.52	98.4	19.4	SLTS	45.	7.				52.
29.56	90.2	14.8	SLTS	10.	13.				23.
32.61	101.3	43.9	SLTS	25.	11.				36.
35.66	97.4	60.7	SLTS	26.	5.	1.			32.
38.71	98.0	14.1	SLTS	28.	7.				35.
41.76	90.1	69.4	MDST	20.	1.				21.
44.80	90.2	65.6	MDST	10.	5.				15.
47.85	102.0	82.6	MDST	11.		8.			19.
50.90	90.5	11.5	MDST			33.			33.
53.95	100.0	42.0	MDST			26.			26.
57.00	90.8	46.1	MDST	12.	8.				20.
60.04	94.1	56.4	MDST	21.	4.				25.
63.09	96.4	69.8	MDST	11.		3.			14.
66.14	97.5	61.1	MDST	11.	6.				17.
68.58	92.8	54.7	MDST	15.	7.	1.			23.
71.78	86.9	8.3	MDST	34.	11.				45.
74.68	98.7	9.5	MDST	4.	2.			10.	16.
			SLTS	16.	2.	5.			23.
			SNDS	12.	1.	24.			37.
77.72	82.2	.0	SLTS	5.	4.				9.
			SNDS	14.	10.	1.			25.
81.38	64.1	.0	SNDS	12.	12.	4.			28.
84.42	97.7	.0	COAL	7.					7.
			MDST	7.				25.	32.
			SLTS	9.					9.
87.02	110.9	.0	COAL	2.	4.				6.
87.48	93.4	.0	COAL	4.	2.	51.		15.	72.
			MDST					50.	50.
88.39	88.0	.0	CBSH	1.	2.				3.
			MDST			14.			14.
89.31	70.2	.0	CBSH	4.	1.				5.
			MDST			23.			23.
90.52	96.1	.0	MDST	25.	9.				34.
93.57	97.8	.0	CBSH	10.	2.				12.
			COAL	4.					4.
			MDST			17.			17.
94.49	81.7	.0	MDST			42.		200.	242.

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96.62	62.0	.0	COAL						
			MDST	3.					3.
99.67	65.9	.0	COAL						
			MDST	13.					13.
100.58	55.9	.0	COAL	3.					3.
			MDST	10.					10.
102.71	62.0	4.6	SNDS	46.	6.				52.
105.76	99.0	10.5	SNDS	38.	7.				45.
108.81	98.0	12.5	SNDS	41.	23.				64.
111.86	89.5	17.7	SNDS	43.	3.	3.			49.
114.91	99.0	23.6	COAL	6.	1.				7.
			MDST			5.			5.
			SNDS	32.	3.				35.
117.96	92.1	10.9	COAL	26.	3.	1.			30.
			MDST	28.	1.				29.
121.00	96.4	.0	MDST	40.	7.				47.
124.05	101.3	.0	COAL	7.		25.			32.
			MDST	50.	4.				54.
127.10	73.8	4.3	CBSH	5.					5.
			COAL	11.	3.	40.			54.
			MDST	17.		3.			20.
130.15	86.6	22.6	CBSH	23.	10.	16.			49.
			COAL	10.					10.
			IGN			1.			1.
133.20	102.0	13.5	MDST	13.					13.
			SLTS	28.	1.	3.			32.
136.24	100.0	23.6	NDAT		1.	3.			4.
			SLTS	40.	2.				42.
139.29	95.4	26.6	MDST	30.					30.
			NDAT		2.				2.
142.34	99.0	8.9	NDAT	24.	7.	3.			34.
145.39	85.6	11.8	NDAT			23.			23.

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4.57	52.5	.0	MDST						
7.01	126.2	16.4	SNDS	15.	1.				16.
8.23	90.2	28.2	SNDS	21.		35.			56.
11.28	90.5	28.3	SNDS	28.	4.				32.
14.32	90.8	11.8	SLTS	19.	2.				21.
			SNDS	13.	1.				14.
17.37	97.4	21.6	SLTS	34.	3.				37.
20.42	97.4	14.1	SLTS	28.	8.				36.
23.47	100.0	24.6	MDST	19.	11.				30.
26.52	97.0	30.9	MDST	17.	10.				27.
29.56	95.7	39.0	MDST	26.	2.	6.			34.
32.61	100.0	28.2	MDST	17.	4.	11.			32.
35.66	89.2	.0	MDST	6.	20.				26.
38.71	98.0	16.1	SLTS	4.	34.	50.			88.
41.76	97.0	39.1	SLTS	22.	5.	1.			28.
44.80	99.3	48.5	SLTS	23.	9.				32.
47.85	97.7	52.5	SLTS	20.	8.				28.
50.90	98.0	37.0	SLTS	21.	8.	3.			32.
53.95	99.0	37.4	SLTS	22.	10.				32.
57.00	95.4	18.4	SLTS	23.	15.	6.			44.
60.04	98.0	.0	MDST	29.	19.	10.			58.
63.09	94.1	44.9	MDST	23.	6.				29.
66.14	101.0	35.4	MDST	27.	7.	20.			54.
69.19	89.5	58.7	MDST	18.	7.				25.
72.24	100.0	41.8	MDST	27.	7.	2.			36.
75.28	100.7	31.8	MDST	45.	3.	3.			51.
78.33	97.4	3.6	COAL	2.					2.
			MDST			84.			84.
			SNDS	1.	3.	11.			15.
81.38	82.6	13.4	COAL	4.	19.				23.
			MDST	16.	1.				17.
			SNDS	13.	5.				18.
84.43	58.0	18.4	MDST	3.	10.				13.
			SLTS	2.	3.			200.	205.
			SNDS	17.	7.				24.
87.48	70.5	.0	COAL	3.	6.	15.			24.
88.70	48.9	9.9	COAL	7.	1.	50.			58.
			NTRK						
			OTHR			10.			10.
90.52	80.3	.0	COAL	6.	2.				8.
			MDST	39.	12.	100.			151.
93.57	85.6	10.2	COAL	6.	2.	10.			18.
			MDST			32.			32.
			SLTS	30.	1.				31.
96.62	97.0	9.2	SLTS	48.	2.	31.			81.
99.67	99.0	15.4	MDST	42.					42.

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102.72	102.3	10.5	MDST	42.	8.	2.			52.
105.76	96.7	26.9	MDST	36.	2.				38.
108.81	100.0	.0	MDST	69.	3.	2.			74.
111.86	89.2	9.5	MDST			22.			22.
114.91	100.3	56.4	SLTS	27.		5.			32.
117.96	98.4	62.2	SLTS	22.					22.
121.00	99.7	77.0	SLTS	29.					29.

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7.01	92.6	.0	SLTS			15.			15.
8.23	96.4	.0	SLTS			42.			42.
11.28	96.1	.0	SLTS			38.			38.
14.32	91.1	.0	SLTS			58.			58.
17.37	94.8	.0	SLTS			31.			31.
20.42	95.1	.0	MDST			75.			75.
			SLTS		21.				21.
23.47	83.6	.0	MDST			37.			37.
26.52	75.8	.0	MDST	6.	18.	1.			25.
28.96	100.7	.0	MDST	3.	8.	69.			80.
32.00	97.4	.0	MDST			43.			43.
35.05	86.9	.0	MDST			50.			50.
38.10	56.1	.0	MDST	2.	2.	13.			17.
41.15	84.3	.0	MDST			56.			56.
44.20	101.3	.0	MDST			32.			32.
47.24	89.2	.0	MDST	4.	6.	34.			44.
50.29	98.4	.0	MDST			16.			16.
			NDAT		2.				2.
			SLTS	13.					13.
53.34	94.4	.0	NDAT	20.	5.	2.			27.
			SLTS			20.			20.
56.39	88.7	.0	SLTS	8.	10.				18.
59.13	90.1	.0	SLTS	5.	2.	10.			17.
60.04	98.0	13.4	MDST	24.	9.				33.
63.09	85.2	.0	MDST	23.	5.				28.
66.14	95.4	10.2	MDST	10.	8.	5.			23.
69.19	100.7	4.9	MDST	28.	4.	10.			42.
72.24	94.7	4.6	MDST			50.			50.
75.28	91.8	.0	MDST			102.			102.
78.33	98.4	.0	MDST			33.			33.
81.38	51.5	.0	MDST	1.	1.	107.			109.
84.43	81.6	.0	MDST			16.			16.
87.48	95.7	36.5	MDST			22.			22.
90.52	96.4	9.5	MDST			42.			42.
93.57	99.0	5.2	SLTS			48.			48.
96.62	101.6	35.7	SLTS			25.			25.
99.67	95.7	52.8	SLTS	11.	12.				23.
102.72	100.3	64.5	SLTS			27.			27.
105.76	99.3	15.7	SLTS	7.	4.	17.			28.
108.81	62.0	.0	COAL	1.		30.			31.
			MDST			10.			10.
			SLTS	6.					6.
109.73	30.3	.0	COAL	4.		30.			34.
110.95	53.8	.0	COAL	2.	1.	50.			53.
			SLTS	8.					8.
111.86	98.4	32.5	SLTS	8.	6.				14.

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114.91	97.7	41.6	SLTS	10.	13.				23.
117.96	91.1	.0	SLTS			22.			22.
121.00	101.0	.0	SLTS	6.	11.	38.			55.
124.05	100.0	12.8	SLTS	21.	20.				41.
127.10	95.4	.0	SLTS	17.	6.	9.	50.		82.
			SNDS	22.	1.	4.			27.
130.15	65.6	.0	SLTS	8.	4.				12.
133.20	93.5	11.0	COAL	2.	1.	2.			5.
			SLTS	15.	3.	5.			23.
134.72	60.7	19.7	COAL	2.	7.				9.
135.33	55.7	.0	COAL	2.	6.				8.
135.94	70.8	.0	CBSH	7.	6.	25.			38.
			COAL			10.			10.
			MDST	2.		15.			17.
137.31	93.9	.0	SNDS	21.	10.	15.			46.
139.29	101.3	5.6	SNDS	39.	5.				44.
142.34	96.1	.0	SNDS	54.	5.				59.
145.39	101.6	15.8	SNDS	36.	3.				39.
148.43	92.1	4.3	CBSH	1.					1.
			COAL			6.			6.
			SNDS	46.	3.				49.
151.48	100.0	10.3	COAL	5.	1.	10.			16.
			MDST	12.	3.				15.
152.55	95.6	23.4	CBSH	1.					1.
			COAL	8.	3.	2.			13.
			MDST			12.			12.
153.92	95.0	.0	CBSH			6.			6.
			COAL	8.	4.				12.
			MDST	24.	2.	81.			107.
157.12	96.6	11.2	CBSH	10.					10.
			COAL	3.		100.			103.
			MDST	39.	4.				43.
160.32	86.2	.0	CBSH	3.					3.
			MDST	20.	18.				38.
163.07	67.2	.0	COAL	11.					11.
163.68	107.9	32.9	COAL	8.	1.				9.
164.44	86.9	.0	CBSH	14.					14.
			COAL	14.	3.				17.
165.66	98.2	.0	CBSH	4.					4.
			COAL	3.	17.				20.
			MDST	21.					21.
167.33	97.5	.0	MDST	10.	8.	12.			30.
			SLTS	5.	18.	1.			24.
169.77	98.7	8.2	SLTS	26.		8.	5.		39.
172.82	96.7	20.0	SLTS			28.			28.
175.87	101.6	44.3	SLTS			21.			21.

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5.18	77.0	.0	MDST			500.			500.
			NTRK						
8.23	85.2	.0	MDST			537.			537.
11.28	95.4	.0	MDST			544.			544.
14.32	79.7	.0	MDST	12.	1.	532.			545.
17.37	75.4	.0	MDST			43.			43.
20.42	62.3	.0	MDST			321.			321.
23.47	74.5	.0	MDST			529.			529.
26.21	97.0	.0	MDST			551.			551.
29.26	83.2	.0	MDST			559.			559.
32.00	72.8	4.3	MDST			149.			149.
35.05	104.9	.0	MDST			125.			125.
35.66	105.2	.0	COAL			100.			100.
			MDST			552.			552.
			NTRK						
38.56	29.9	.0	COAL			200.			200.
40.23	14.8	.0	COAL			20.			20.
40.84	6.5	.0	COAL			3.			3.
41.76	54.6	.0	COAL			500.			500.
43.59	62.0	.0	COAL			500.			500.
44.80	68.9	.0	COAL	2.	3.	50.			55.
			SLTS	48.		43.			91.
47.85	25.2	.0	CBSH	5.		2.			7.
			COAL	2.	1.				3.
			SLTS	2.		25.			27.
49.99	100.0	.0	COAL			100.			100.
			MDST			530.			530.
51.51	101.2	.0	COAL						
			NTRK						
			SLTS	24.	21.	114.			159.
53.95	95.5	.0	COAL			20.			20.
			SLTS	39.	12.				51.
			SNDS	4.					4.
56.84	89.6	15.6	COAL	4.	3.	10.			17.
			SLTS	15.	4.				19.
57.61	97.1	.0	COAL	1.	3.				4.
			MDST			253.			253.
			SLTS	8.	5.				13.
60.04	101.3	.0	MDST			257.			257.
			SLTS	17.	9.				26.
63.09	97.4	.0	CBSH	11.	1.				12.
			COAL	13.	1.				14.
			MDST	16.	4.	12.			32.
64.62	75.8	.0	COAL	3.		100.			103.
65.53	102.2	5.1	CBSH			25.			25.
			COAL	2.		100.			102.

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65.53	102.2	5.1	MDST			48.			48.
68.27	101.0	.0	COAL	4.	2.	30.			36.
			MDST			12.			12.
			SLTS	35.	5.	200.			240.
71.32	96.4	.0	SLTS			152.			152.
74.37	85.1	.0	SLTS			151.			151.
77.72	99.0	4.9	SLTS			62.			62.
80.77	94.1	.0	SLTS			95.			95.
83.97	89.7	6.3	SLTS			32.			32.
87.17	98.4	7.5	SLTS			55.			55.
90.22	102.0	.0	SLTS			41.			41.
93.27	95.4	7.5	SLTS			42.			42.
96.32	94.4	10.5	SLTS			34.			34.
99.36	85.3	3.7	SLTS			46.			46.
102.56	97.2	.0	SLTS			68.			68.
105.76	98.2	.0	SLTS			123.			123.
108.51	97.0	10.8	SLTS			18.			18.
111.56	97.0	6.9	SLTS	3.	7.	19.			29.
114.60	94.8	43.0	SLTS	23.	4.				27.
117.65	92.8	17.0	SLTS	18.	4.	17.			39.
120.70	90.2	27.9	SLTS			19.			19.
123.75	98.4	.0	SLTS			82.			82.
126.80	97.0	.0	SLTS			53.			53.
129.94	88.4	.0	SLTS			51.			51.
133.20	92.2	.0	SLTS			46.			46.
135.64	94.7	27.3	SLTS			15.			15.
			SNDS			13.			13.
138.68	91.0	4.9	SNDS			66.			66.
141.12	95.1	5.2	SLTS			26.			26.
			SNDS	1.	4.	5.			10.

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4.00	100.0	.0	SNDS			20.			20.
4.12	60.0	.0	COAL	4.	2.				6.
4.42	33.3	.0	COAL			25.			25.
4.72	26.7	.0	COAL	3.	1.	25.			29.
5.79	54.1	.0	COAL			100.			100.
6.40	56.8	.0	CBSH	4.		10.			14.
			MDST	3.		500.			503.
8.23	82.2	.0	COAL	7.		100.			107.
			MDST	13.	3.	59.			75.
10.36	101.0	.0	SLTS	14.					14.
			SNDS	43.	7.	3.			53.
13.41	89.0	.0	SNDS	32.	4.	4.			40.
16.76	92.8	.0	SNDS	64.					64.
19.96	77.9	.0	SNDS	21.	5.				26.
21.18	59.0	.0	OTHR						
21.79	95.8	.0	SLTS	18.	7.				25.
			SNDS	30.	7.	3.			40.
23.47	115.0	.0	COAL	5.	7.				12.
			SNDS	33.		3.			36.
25.60	88.0	.0	COAL	6.		7.	50.		63.
			SLTS	32.	13.				45.
27.43	66.7	.0	COAL	10.	5.	30.			45.
			MDST	16.		35.			51.
28.96	97.5	.0	MDST	14.					14.
			SLTS	47.	7.	101.			155.
32.16	96.3	.0	COAL	9.	2.	20.			31.
			MDST			40.		200.	240.
			SLTS	19.	1.				20.
35.36	17.8	.0	COAL	2.		3.			5.
35.81	101.3	.0	COAL	18.	1.	40.			59.
36.57	73.8	.0	COAL	2.		3.			5.
			MDST	16.					16.
			SLTS	23.	5.				28.
38.71	112.4	6.9	MDST	25.		25.			50.
			SLTS	35.	4.	4.			43.
41.45	88.1	.0	MDST			93.			93.
44.80	100.0	.0	MDST			49.			49.
			SLTS			54.			54.
47.85	90.2	.0	SLTS			87.			87.
50.90	99.0	.0	SLTS			84.			84.
53.95	96.7	.0	SLTS			67.			67.
			SNDS			9.			9.

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6.40	94.5	7.7	SNDS	18.		6.			24.
8.23	50.5	.0	SNDS	11.		55.			66.
11.28	74.6	.0	COAL	4.	1.	4.			9.
			SLTS	17.	2.				19.
12.50	24.2	.0	COAL	6.		25.			31.
14.32	91.8	.0	COAL	1.					1.
			SLTS		3.	10.			13.
14.93	19.7	.0	COAL	4.	1.	20.			25.
			MDST	2.		10.			12.
17.37	64.3	4.6	COAL	2.		20.			22.
			MDST	22.	9.	45.			76.
20.42	94.4	.0	MDST	12.	5.	100.			117.
22.56	30.9	14.5	COAL	2.					2.
			MDST	2.	1.				3.
24.08	84.0	.0	MDST	3.					3.
			SNDS	16.	9.				25.
26.52	84.7	6.9	MDST	13.	1.	100.			114.
			SNDS	10.	5.				15.
29.26	94.4	33.4	SNDS	16.	6.	3.			25.
32.31	100.6	12.2	COAL	6.		20.			26.
			MDST	12.	2.				14.
			SLTS	11.	2.				13.
			SNDS	8.	2.	25.			35.
35.66	89.8	31.5	SLTS	18.	8.				26.
38.71	100.0	.0	SLTS	32.	8.	1.			41.
41.76	98.7	.0	COAL	4.		1.			5.
			SLTS	39.	8.	1.			48.
44.80	102.5	.0	COAL			10.			10.
			MDST			51.			51.
47.55	98.7	.0	COAL	7.	1.				8.
			MDST			36.			36.
50.60	95.9	.0	COAL	9.		21.			30.
51.82	92.0	.0	COAL	7.		12.			19.
			MDST			25.			25.
53.95	100.0	.0	MDST			89.			89.
57.00	86.5	.0	SLTS			46.			46.
60.04	99.3	16.7	SLTS			42.			42.
63.09	98.4	4.9	SLTS			56.			56.

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7.32	82.4	.0	SLTS	6.		20.			26.
8.23	19.7	.0	SLTS	9.		34.			43.
10.97	86.9	.0	SLTS	42.	9.	11.			62.
14.02	100.8	12.7	SLTS	20.	4.	30.			54.
			SNDS	9.	11.				20.
16.46	91.3	26.6	SLTS	9.		11.			20.
			SNDS	27.	8.	2.			37.
19.81	101.6	49.5	SLTS	28.	11.				39.
22.86	96.4	32.8	MDST	29.	2.				31.
			SLTS	2.					2.
25.91	101.6	35.4	MDST	31.	2.	3.			36.
28.96	101.0	29.9	MDST	33.	4.	30.			67.
32.00	96.4	23.9	MDST	41.	17.				58.
35.05	100.0	23.5	MDST	24.	2.		12.		38.
36.88	45.9	.0	COAL		2.	25.			27.
37.49	66.4	.0	COAL			15.			15.
			MDST	19.					19.
38.71	89.6	18.6	COAL	1.		26.			27.
			MDST	15.	4.	20.			39.
40.54	95.9	6.6	COAL	2.	13.	20.			35.
			MDST	28.	4.	20.			52.
			SLTS	4.	3.				7.
44.20	88.2	31.6	SLTS	15.	4.	26.			45.
			SNDS	16.	2.	5.			23.
47.24	148.4	.0	COAL	9.		6.			15.
47.55	91.0	12.8	CBSH	11.					11.
			COAL	4.	1.	60.			65.
			MDST	16.	2.				18.
50.90	97.4	35.0	SLTS	17.	9.				26.
53.64	99.3	54.6	MDST	13.		30.			43.
			SLTS	12.	4.				16.
56.70	102.0	28.9	MDST	26.	4.	33.			63.
59.74	95.9	16.6	MDST			68.			68.
62.94	97.5	77.5	MDST			19.			19.
66.14	100.3	71.1	SLTS			25.			25.
69.19	97.7	59.3	SLTS			26.			26.
72.24	100.7	80.3	SLTS			15.			15.
75.28	97.7	73.1	SLTS			16.			16.
78.33	100.0	69.5	SLTS			15.			15.
			SNDS	1.	2.				3.
81.38	97.4	71.5	SLTS			16.			16.
			SNDS	4.	2.				6.

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9.45	82.0	.0	SLTS	18.		50.			68.
11.28	75.7	.0	SLTS	30.		53.			83.
14.32	82.0	.0	SLTS	42.	8.				50.
17.37	94.3	.0	SLTS	19.	2.	50.			71.
19.81	66.9	.0	SLTS	33.	4.	28.			65.
23.47	39.3	.0	OTHR	25.		50.			75.
26.52	13.2	.0	OTHR			50.			50.
29.56	55.7	.0	OTHR			100.			100.
			SLTS	18.		50.			68.
32.61	61.7	.0	OTHR	12.		75.			87.
			SLTS	8.	2.	10.			20.
35.04	59.7	.0	OTHR	7.					7.
35.66	22.0	.0	OTHR	7.		15.			22.
37.48	26.2	4.1	MDST	11.		15.			26.
			OTHR	2.					2.
41.15	101.6	37.4	MDST	25.	2.	13.			40.
44.20	57.3	.0	MDST	13.	4.	26.			43.
46.33	99.3	10.5	MDST	11.	6.				17.
			SLTS	6.	1.				7.
47.85	76.5	14.2	SLTS	16.	2.	67.			85.
49.68	65.6	.0	MDST	26.		150.			176.
52.73	106.6	.0	MDST	50.	6.	25.			81.
54.56	62.4	.0	COAL	4.	2.				6.
			SLTS	22.	4.	10.			36.
56.69	89.5	18.4	CBSH	13.		10.			23.
			COAL	5.	8.				13.
			NTRK						
			SLTS	28.	2.	25.			55.
59.74	104.3	9.2	SLTS	53.	8.	3.			64.
62.79	23.9	.0	SNDS	7.		18.			25.
64.92	79.7	17.6	SLTS	5.		100.			105.
			SNDS	7.		2.			9.
66.45	58.6	.0	COAL	8.	1.				9.
			SLTS	4.		30.			34.
67.97	83.6	.0	SLTS	5.		25.			30.
68.58	81.6	.0	SLTS	11.		50.			61.
70.10	26.2	.0	SLTS			50.			50.
71.93	21.5	.0	NTRK						
			SLTS	5.		20.			25.
75.28	18.9	.0	COAL	2.					2.
			NTRK						
			OTHR						
78.03	101.6	15.7	CBSH	1.					1.
			COAL	6.	5.	10.			21.
			MDST	12.	1.				13.
			SLTS	27.	1.				28.

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81.08	95.6	49.4	SLTS	30.	5.				35.
84.28	95.9	15.3	SLTS	44.	1.				45.
87.48	102.0	.0	SLTS	54.	1.				55.
90.52	96.1	21.3	MDST	40.	5.				45.
93.57	100.7	.0	MDST	44.	3.	3.			50.
96.62	99.0	10.8	MDST	21.		2.			23.
			SLTS			50.			50.
99.67	98.4	.0	MDST			11.			11.
			SLTS			26.			26.

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4.88	78.7	.0	COAL	8.	12.				20.
5.49	62.3	.0	COAL	4.		10.			14.
6.10	56.6	.0	CBSH	5.		20.			25.
			COAL	9.		20.			29.
			MDST			10.			10.
7.92	67.2	.0	COAL	6.	4.	20.			30.
			MDST	9.	1.	10.			20.
9.14	79.4	.0	COAL	2.					2.
			MDST	29.					29.
11.28	28.4	.0	COAL	5.					5.
			MDST	10.	3.				13.
13.71	40.5	.0	MDST			10.			10.
			SLTS	26.	4.				30.
15.24	34.3	.0	SLTS	32.	4.				36.
17.37	83.8	.0	SLTS	26.	6.	4.			36.
19.66	98.4	.0	SLTS	5.					5.
			SNDS	37.	3.				40.
22.71	91.3	11.8	SNDS	35.		55.			90.
26.52	96.7	21.7	SNDS	29.	5.	12.			46.
28.96	96.4	17.3	CBSH	2.		3.			5.
			COAL	3.	2.				5.
			MDST	12.	3.				15.
			SNDS	22.	6.				28.
32.61	89.7	29.0	CBSH	3.	4.				7.
			COAL	10.	3.				13.
33.68	98.4	.0	CBSH	3.					3.
			COAL	3.	3.	20.			26.
			MDST	13.					13.
34.90	68.9	10.7	COAL	4.		15.			19.
			MDST	9.	2.				11.
36.12	97.6	6.6	COAL	4.					4.
			MDST	17.	9.				26.
37.79	55.4	.0	SLTS	4.	5.				9.
38.71	133.0	.0	CBSH	6.	3.				9.
			COAL	8.					8.
			MDST	4.					4.
			SLTS	4.	3.				7.
39.62	85.5	.0	COAL			150.			150.
			MDST			54.			54.
44.65	71.9	.0	COAL			15.			15.
			MDST			54.			54.
44.80	88.9	51.8	MDST	13.	1.				14.
			SLTS	11.	1.	1.			13.
47.85	94.4	17.4	SLTS	37.	3.	2.			42.
50.90	101.6	15.4	SLTS	30.	4.				34.
53.95	93.4	19.7	SLTS			2.			2.

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57.00	98.0	43.1	MDST	33.	1.	6.			40.
60.04	95.7	17.4	MDST			48.			48.
			SLTS			4.			4.
63.09	103.6	19.7	SLTS			50.			50.
66.14	100.3	39.7	SLTS			37.			37.
69.19	99.3	14.5	SLTS			24.			24.
72.24	96.4	16.4	SLTS			62.			62.
75.28	100.0	24.6	SLTS			39.			39.
78.33	98.7	20.7	SLTS			51.			51.
			SNDS	3.	3.	5.			11.
81.38	101.0	17.4	SLTS			39.			39.
84.43	101.0	11.8	SLTS			81.			81.

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7.62	95.1	.0	SLTS	57.	8.	21.			86.
10.67	72.3	.0	SLTS	37.	5.	20.			62.
13.41	82.3	.0	SLTS	38.	9.	25.			72.
16.46	74.1	.0	SLTS	39.	8.	51.			98.
19.51	80.3	.0	SLTS	73.	8.	4.			85.
23.47	95.4	.0	SLTS	91.	6.				97.
26.52	102.0	5.3	SLTS	78.	14.				92.
29.56	89.5	.0	SLTS	74.	12.				86.
32.61	98.7	.0	SLTS	76.	12.	1.			89.
35.66	100.7	.0	SLTS	81.	13.				94.
38.71	88.2	.0	SLTS	55.	18.	15.			88.
41.76	100.7	.0	MDST	59.	9.				68.
44.80	85.9	.0	MDST			103.			103.
47.85	102.5	.0	CBSH	3.	1.	6.			10.
			COAL	1.	2.				3.
			MDST			10.			10.
			SNDS			24.			24.
50.29	100.3	4.6	CBSH	3.					3.
			COAL	2.	4.				6.
			SLTS	32.	7.				39.
			SNDS	13.	3.				16.
53.34	89.3	.0	CBSH	10.					10.
			COAL	1.	3.	5.			9.
			SNDS	15.	2.	1.			18.
54.56	90.2	26.2	COAL	2.	7.	10.	1.		20.
			MDST			26.			26.
55.78	100.0	.0	COAL	9.	2.				11.
56.39	95.0	10.6	COAL	5.	4.				9.
			SLTS	45.					45.
59.59	100.0	.0	SLTS	63.	5.				68.
62.64	96.9	.0	SLTS	64.	4.	5.			73.
65.84	103.6	.0	SLTS	61.	1.	4.			66.
68.88	92.6	5.1	SLTS	58.	8.	1.			67.
72.24	94.7	.0	SLTS	27.	4.				31.
			SNDS	26.	8.				34.
75.28	52.5	.0	COAL	9.	2.				11.
			MDST	28.	1.				29.
			OTHR			50.			50.
77.72	103.6	3.6	COAL	2.					2.
			MDST	13.					13.
			SLTS	45.	1.	12.			58.
80.77	99.0	16.4	CBSH	4.					4.
			COAL	3.					3.
			SLTS	33.	5.	10.			48.
			SNDS	4.	1.				5.
83.83	88.9	.0	CBSH	2.					2.

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83.83	88.9	.0	COAL	12.	7.				19.
84.73	69.7	.0	COAL	11.	15.	20.			46.
85.95	81.0	.0	MDST			46.	5.		51.
87.48	67.1	5.3	SLTS	39.	5.				44.
89.76	101.3	14.4	SLTS	37.	14.	4.			55.
92.81	77.7	6.8	COAL	25.	8.				33.
			MDST	16.	5.				21.
			SLTS	2.	2.				4.
96.62	72.3	.0	MDST	20.	15.	22.			57.
98.75	100.7	.0	COAL	7.		20.			27.
			MDST			26.			26.
			SNDS	21.	4.	6.			31.
101.80	43.5	.0	COAL	3.		15.			18.
			SNDS	5.					5.
102.72	100.0	.0	COAL	10.	3.				13.
103.33	93.0	7.0	COAL	11.	9.	20.			40.
			MDST			10.			10.
			SLTS	23.	3.				26.
105.76	91.7	.0	COAL	7.	3.	60.			70.
			SLTS	51.	4.	1.			56.
108.05	100.3	.0	COAL	2.					2.
			MDST			7.			7.
			SLTS	39.	9.				48.
111.10	95.0	29.1	CBSH			5.			5.
			MDST			3.			3.
			SLTS	25.	7.				32.
114.30	96.7	23.5	COAL	23.	5.	10.			38.
			SLTS	5.		10.			15.
116.13	83.6	18.0	COAL	3.	1.				4.
			MDST			19.			19.
117.96	92.1	30.6	CBSH	10.					10.
			COAL	3.		5.			8.
			MDST	11.	3.	14.			28.
			NDAT		2.	10.			12.
121.00	88.5	.0	COAL	5.		10.			15.
			MDST	16.	3.	3.		8.	30.
			SNDS	4.	2.				6.
123.44	96.7	.0	SLTS	11.	9.	4.			24.
125.27	100.0	8.2	SLTS	23.	4.	3.			30.
127.10	94.4	7.5	SNDS	27.	14.		1.		42.
130.15	103.9	14.5	SNDS	33.	15.				48.
133.19	96.1	20.7	SNDS	32.	5.				37.
136.24	96.1	8.5	MDST			39.			39.
			SLTS	9.					9.
139.29	102.0	.0	COAL	19.	3.	22.			44.
			MDST	5.	1.				6.

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139.29	102.0	.0	SLTS	40.	3.				43.
142.34	77.4	3.9	CBSH	5.	2.				7.
			COAL	12.		5.			17.
			MDST			43.			43.
145.39	113.4	20.7	SLTS	43.	3.				46.
148.44	47.4	4.3	CBSH	18.	3.	25.			46.
			MDST			18.			18.
			SLTS	2.					2.
151.48	82.0	.0	CBSH	4.		25.			29.
			MDST			32.			32.
			OTHR						
153.31	90.2	32.8	CBSH	2.					2.
			COAL	5.	1.	10.			16.
			MDST			11.			11.
154.53	100.0	4.3	CBSH	9.	1.	1.			11.
			MDST			42.			42.
157.58	99.7	4.3	MDST			28.			28.
160.63	81.0	7.9	MDST	22.	2.				24.
163.68	102.0	39.8	MDST	2.	7.	17.			26.
166.72	101.0	31.8	MDST	24.	3.				27.
169.77	100.3	16.7	MDST	8.	2.	28.			38.
172.82	88.9	43.0	MDST			31.			31.
175.87	102.3	38.7	MDST			18.			18.
			SLTS			29.			29.
178.92	102.3	56.1	SLTS			26.			26.
181.96	105.1	63.6	SLTS			24.			24.
184.10	99.3	50.5	SLTS			20.			20.
187.15	123.0	100.0	SLTS			5.			5.
187.76	100.0	37.8	SLTS			34.			34.
190.80	100.7	72.5	SNDS	3.		14.			17.

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7.01	57.3	11.7	SLTS	18.					18.
8.23	99.0	18.4	SLTS	53.	3.				56.
11.28	96.4	3.9	SLTS	46.	9.				55.
14.32	104.9	10.7	SLTS	27.	1.				28.
15.54	82.5	8.2	SLTS	24.		1.			25.
17.37	98.5	23.6	SLTS	45.	2.				47.
20.12	93.4	4.4	SLTS	57.	2.	1.			60.
22.86	98.7	.0	SLTS	64.	11.				75.
25.91	96.1	.0	SLTS			41.			41.
28.96	98.4	.0	SLTS	40.	4.	2.			46.
32.00	95.7	4.9	SLTS	58.	3.				61.
35.05	101.3	.0	SLTS	68.	2.	1.			71.
38.10	96.7	.0	SLTS	41.	8.	2.			51.
41.15	97.0	.0	SLTS	55.	3.	3.			61.
44.50	97.7	6.2	SLTS	42.	2.				44.
47.55	94.4	4.1	NDAT		2.				2.
			SLTS	41.	3.				44.
50.75	89.1	.0	SLTS	64.	3.				67.
53.95	113.9	.0	SLTS	23.		28.			51.
56.39	92.5	.0	SNDS	44.	3.				47.
59.74	99.7	13.4	CBSH	23.	3.				26.
			SNDS	42.	1.				43.
62.79	96.7	4.9	SNDS	35.	1.				36.
65.84	99.7	28.3	SNDS	38.	1.	2.			41.
68.88	63.3	3.9	SNDS	32.	3.				35.
71.93	98.0	24.6	SNDS	16.	8.				24.
74.98	100.0	46.9	SNDS	1.	7.				8.
78.03	90.7	17.9	SNDS	13.	15.	1.			29.
81.38	91.1	.0	SNDS	39.	6.	1.			46.
84.43	99.0	.0	SNDS	37.	7.	20.			64.
87.48	101.0	31.9	SNDS	36.	4.	2.			42.
90.52	84.3	.0	CBSH	16.		50.			66.
			COAL	3.		50.			53.
			MDST			15.			15.
			SLTS	15.		2.			17.
			SNDS	15.	2.				17.
96.62	95.1	.0	MDST	35.		10.		100.	145.
			SNDS	4.					4.
98.62	96.7	4.9	MDST			11.			11.
			SLTS			45.			45.
			SNDS	9.					9.
99.67	92.8	.0	MDST			18.			18.
			SLTS			61.			61.
102.72	99.3	6.3	MDST			46.	25.		71.
			SLTS			6.			6.
105.76	97.4	29.5	MDST			44.			44.

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108.81	95.4	4.3	MDST			53.			53.
111.86	94.8	8.9	MDST			36.			36.
			SLTS			29.			29.
114.91	101.0	4.6	MDST			41.			41.
			SLTS			8.			8.
117.76	93.4	.0	MDST			34.	25.		59.
			SNDS			14.			14.
121.00	98.0	45.9	SNDS	24.	12.	1.			37.

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START OF CORE RUN	RECOVERY PERCENT	R.Q.D.	LITHOLOGY	BEDDING FRACTURES	JOINT FRACTURES	UNCLASSIFIED FRACTURES	MINOR FAULT FRACTURES	FAULT ZONE FRACTURES	TOTAL FRACTURES
11.28	30.7	.0	SLTS	18.	2.				20.
14.02	95.5	.0	SLTS	43.	14.				57.
17.37	79.4	.0	SLTS	14.		200.			214.
19.51	96.7	.0	SLTS	51.	1.	52.			104.
22.55	57.4	.0	SLTS	54.	11.	1.			66.
25.60	82.1	20.7	SLTS	38.		75.			113.
29.56	96.7	9.5	SLTS	39.	8.	25.			72.
32.61	95.7	27.9	SLTS	34.	4.	1.			39.
35.66	96.4	36.1	SLTS	35.	3.				38.
38.71	92.5	8.9	SLTS	40.	6.	3.			49.
41.76	97.0	13.8	SLTS	27.		10.			37.
			SNDS	21.	6.				27.
44.80	93.4	15.7	SLTS	34.	13.				47.
47.85	82.0	9.8	SLTS	25.	9.				34.
50.90	93.4	.0	MDST	8.	1.				9.
			SLTS	21.	4.				25.
52.42	129.4	.0	COAL			50.			50.
			MDST	3.		75.			78.
53.95	68.9	.0	COAL	4.	5.	20.			29.
			MDST	2.					2.
54.56	67.2	.0	COAL			50.			50.
55.17	90.2	29.5	SLTS	7.	3.				10.
55.78	95.1	.0	SLTS	20.	6.				26.
57.00	95.7	.0	SLTS	37.	7.	7.			51.
60.04	98.4	17.4	SLTS	34.	7.	5.			46.
63.09	98.0	38.7	SLTS	12.	5.				17.
			SNDS	19.	2.				21.
66.14	99.0	37.0	SLTS	31.	1.	4.			36.
			SNDS	2.		10.			12.
69.19	96.7	28.5	MDST	10.					10.
			SLTS	24.	1.	2.			27.
72.24	91.8	62.3	MDST	8.					8.
72.85	104.9	26.2	COAL	10.	2.				12.
73.46	83.5	36.3	COAL	2.	4.				6.
			MDST	5.					5.
			SLTS	16.	1.				17.
75.28	101.6	49.2	SLTS	35.		10.			45.
78.33	112.0	74.9	COAL	3.					3.
			SLTS	15.	3.				18.
80.16	41.3	.0	COAL	5.		25.			30.
81.08	41.8	.0	COAL			100.			100.
81.99	101.6	27.9	COAL	6.	1.	25.			32.
82.60	92.9	.0	MDST	32.	3.	25.			60.
84.43	95.1	30.5	MDST	20.	2.				22.
			SLTS	19.	1.				20.
87.48	89.7	54.0	COAL	5.					5.

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87.48	89.7	54.0	SLTS	14.	3.				17.
89.61	78.3	13.0	COAL	14.	2.	25.			41.
90.53	100.3	16.8	COAL	8.	4.				12.
			MDST			45.			45.
93.57	99.6	13.1	COAL	5.				25.	30.
			MDST			35.		25.	60.
96.01	99.7	11.1	COAL	2.	1.	50.			53.
			MDST	3.	2.				5.
			SLTS	32.	8.				40.
99.06	65.6	16.9	COAL			20.			20.
			SLTS	8.	11.				19.
100.89	72.1	21.9	CBSH			5.			5.
			COAL	3.	4.				7.
			MDST	11.	4.				15.
102.72	98.7	32.6	SLTS	33.	6.	8.			47.
105.76	85.9	17.6	COAL	21.	3.	20.			44.
			SLTS	15.	8.				23.
108.66	63.6	.0	COAL	3.	3.	104.			110.
109.73	95.3	12.2	COAL	6.	2.				8.
			MDST	33.	3.				36.
111.86	87.9	13.4	MDST	46.	6.	7.			59.
114.91	96.1	42.3	MDST	14.	3.	20.			37.
			SLTS	15.		10.			25.
117.96	108.0	38.3	CBSH	2.					2.
			COAL	3.		200.			203.
			MDST	12.	4.				16.
			SLTS	18.	3.				21.
120.70	83.6	3.0	COAL	30.	14.	30.			74.
			MDST	17.	12.	37.			66.
124.05	92.5	19.0	MDST			11.			11.
			SNDS	18.	29.	55.			102.
127.10	99.0	58.0	SNDS	33.	16.	11.			60.
130.15	90.2	28.2	SNDS	30.	6.	48.			84.
133.20	93.7	13.8	COAL	5.	1.	10.			16.
			MDST	45.	4.				49.
136.24	96.4	59.0	COAL	14.	4.				18.
			MDST			29.			29.
139.29	92.8	9.5	MDST			35.		50.	85.
142.34	95.7	4.3	MDST	10.	3.	33.			46.
			SLTS	19.	9.				28.
145.39	64.1	11.6	COAL	17.	2.	40.			59.
			MDST	16.		22.			38.
			SNDS	4.					4.
148.59	123.4	7.0	COAL	4.					4.
			MDST	21.	8.				29.
			SLTS	12.	2.				14.

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151.03	94.4	26.9	COAL	3.					3.
			MDST	20.					20.
			SLTS	12.	1.				13.
154.23	25.4	.0	COAL	14.		20.			34.
155.45	18.7	.0	COAL	4.	1.	5.			10.
156.36	73.8	12.3	COAL			20.			20.
			MDST	9.	6.				15.
157.58	100.0	56.7	MDST	16.	2.				18.
			SNDS	8.					8.
160.63	91.8	80.0	SLTS	7.	1.	1.			9.
			SNDS	3.		4.			7.
163.68	95.4	40.1	COAL	6.					6.
			MDST	16.	2.	5.			23.
			SLTS	6.	2.				8.
166.72	99.3	30.5	COAL	4.	1.	5.			10.
			MDST	5.					5.
			SLTS	20.	1.	4.			25.
169.77	96.7	21.6	SLTS	24.	10.				34.
172.82	101.0	32.5	SLTS	40.	4.				44.
175.87	102.3	19.7	SLTS	44.	2.				46.
178.91	92.7	23.6	SLTS	15.					15.
180.14	90.5	6.9	MDST	9.	1.	12.			22.
183.18	89.8	4.9	MDST			33.			33.
186.23	92.8	7.2	MDST			31.			31.

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18.59	91.5	.0	MDST			65.			65.
20.12	96.7	12.3	SLTS	11.	2.				13.
			SNDS	17.	2.	10.			29.
22.55	96.4	27.4	SLTS	25.	6.	10.			41.
			SNDS	7.	2.				9.
25.91	103.0	5.7	SLTS	29.	7.				36.
28.55	100.7	4.3	SLTS	24.	9.				33.
31.70	93.1	26.2	SLTS	28.	6.				34.
			SNDS			6.			6.
34.75	101.0	34.9	SNDS			28.			28.
37.79	99.0	46.6	SNDS			47.			47.
40.84	99.0	.0	SLTS	10.	4.	71.			85.
43.89	99.0	47.2	SLTS	27.	14.				41.
46.94	93.1	43.3	SLTS	28.	3.	10.			41.
50.29	97.7	12.1	SLTS	36.	11.	1.			48.
53.34	99.3	4.9	SLTS	31.	13.				44.
56.39	98.0	16.7	SLTS	35.	2.	22.			59.
59.74	99.0	7.5	SLTS	28.	9.	2.			39.
62.79	100.0	23.3	SLTS	34.	12.	25.			71.
65.94	101.6	4.6	MDST			48.			48.
68.88	89.9	22.6	MDST			23.			23.
			SNDS	8.	3.	10.			21.
72.24	49.2	6.0	MDST	6.					6.
			SNDS			106.			106.
74.07	62.0	.0	SLTS	18.					18.
75.28	96.7	21.6	SLTS	46.	5.				51.
78.33	101.3	11.1	SLTS	36.	10.	20.			66.
			SNDS	5.					5.
81.38	87.2	13.1	COAL	1.					1.
			MDST	8.		120.			128.
			SNDS	14.	4.				18.
84.12	22.6	.0	COAL			10.			10.
84.43	94.8	5.6	MDST			43.			43.
			SLTS	17.	5.				22.
			SNDS	13.	1.				14.
86.56	97.8	29.3	SNDS	13.	1.				14.
87.48	100.0	9.2	MDST	13.					13.
			SLTS	21.					21.
			SNDS	24.	5.				29.
90.52	100.0	.0	COAL			15.			15.
			MDST	8.					8.
90.83	37.7	.0	COAL	2.				50.	52.
			SNDS	4.					4.
91.44	88.2	.0	MDST	4.	1.				5.
			SLTS	23.	3.				26.
			SNDS	8.	1.				9.

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92.96	-1.0	.0	COAL						
93.27	95.4	.0	MDST	34.	4.			10.	48.
94.79	102.7	19.7	SNDS	17.	9.	20.			46.
96.62	77.9	.0	MDST					100.	100.
			SNDS	13.					13.
97.84	41.0	.0	COAL			100.			100.
98.45	32.3	.0	COAL			20.			20.
98.76	91.2	.0	COAL			10.			10.
			SLTS	14.	5.				19.
99.67	98.7	17.7	SLTS	44.	5.				49.
			SNDS		1.				1.
102.72	83.2	6.9	SLTS	38.	7.		15.		60.
			SNDS	10.					10.
105.76	109.8	.0	COAL			2.			2.
			SLTS	59.	5.	50.			114.
108.51	26.7	.0	COAL			15.			15.
108.81	26.2	.0	COAL			50.			50.
109.42	69.6	.0	CBSH	20.					20.
			COAL	5.	3.	20.			28.
			MDST	3.				50.	53.
110.34	62.6	.0	COAL			15.			15.
			SLTS	8.				25.	33.
			SNDS	9.					9.
111.25	23.0	.0	COAL			15.			15.
111.86	73.8	.0	COAL			50.			50.
112.47	94.7	6.6	SLTS	28.	4.			100.	132.
			SNDS			3.			3.
114.91	88.0	.0	SLTS	23.	2.				25.
			SNDS	9.		25.			34.
117.65	70.6	.0	COAL	3.		20.			23.
			MDST	8.		100.	100.		208.
			SNDS	8.					8.
119.18	54.9	.0	COAL	2.		2.	100.		104.
120.09	16.5	.0	COAL			50.			50.
121.00	96.7	.0	SNDS	61.	5.				66.
124.05	96.1	.0	SNDS	28.	6.		20.		54.
127.10	88.5	15.4	SNDS	21.	20.				41.
130.15	93.7	19.4	SNDS	37.	5.				42.
133.19	98.0	32.5	SNDS	41.	3.				44.
136.24	92.8	45.6	SNDS	34.	7.				41.
139.29	45.9	.0	MDST					500.	500.
			SNDS	24.	7.	30.			61.
142.31	94.4	5.9	MDST			19.		700.	719.
			SNDS			13.			13.
145.39	102.3	46.9	SNDS			27.			27.
148.44	101.0	51.3	SNDS	8.	21.				29.

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151.48	95.4	14.8	MDST	3.				100.	103.
			SNDS	29.	8.				37.
154.53	96.4	8.9	COAL			5.			5.
			MDST			100.			100.
			SLTS	9.	4.				13.
			SNDS	44.	6.				50.
157.58	90.8	13.4	SLTS	2.			1.		3.
			SNDS	54.	4.				58.
160.63	92.8	26.2	SNDS	39.	16.	10.			65.

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10.67	100.3	.0	SLTS	46.	5.				51.
13.72	53.4	.0	MDST	28.	1.				29.
17.37	114.5	.0	MDST	28.	4.				32.
19.51	84.8	.0	MDST	39.	1.	2.			42.
23.47	102.3	4.9	MDST	52.	1.	3.			56.
26.52	98.0	9.9	MDST	45.	2.				47.
29.56	99.7	12.8	MDST	34.	2.				36.
			SLTS	15.					15.
32.61	98.4	.0	SLTS	18.	8.				26.
			SNDS	25.	18.				43.
35.66	93.8	.0	COAL	5.	4.				9.
			MDST	33.	8.				41.
			SLTS	15.	4.				19.
			SNDS	5.		4.			9.
38.71	90.8	21.6	SNDS	39.	7.				46.
41.76	107.4	23.0	COAL	16.	2.	100.			118.
			MDST	21.	9.				30.
44.20	95.6	5.9	MDST	43.	5.				48.
47.40	89.8	8.8	CBSH	8.		1.			9.
			COAL	13.	2.	3.			18.
48.77	53.8	19.8	COAL	2.	2.				4.
49.68	82.8	18.9	COAL	2.		3.			5.
			MDST	10.	1.	1.			12.
			SLTS	7.		1.			8.
50.90	72.5	13.8	SLTS	32.	5.				37.
53.95	93.4	17.7	SLTS	41.	6.		15.		62.
57.00	99.7	8.6	SLTS	22.	5.				27.
			SNDS	26.	4.				30.
60.04	148.4	11.5	SNDS	33.	2.	1.			36.
61.26	80.3	.0	SLTS	31.	6.				37.
63.09	94.5	14.3	COAL	3.		2.			5.
			MDST	5.	2.				7.
			SLTS	8.	1.				9.
64.00	90.2	.0	MDST	18.		3.			21.
			SLTS	11.	5.				16.
65.84	87.4	6.6	COAL	9.	6.				15.
			MDST	21.	6.		25.		52.
67.66	105.9	7.8	COAL	5.	3.				8.
			MDST	28.	6.				34.
69.19	99.3	8.5	MDST	11.	4.				15.
			SLTS	29.	10.				39.
72.24	105.7	35.7	COAL	2.					2.
			SLTS	16.	2.				18.
			SNDS	13.	3.				16.
74.68	69.7	.0	COAL	10.				100.	110.
75.90	80.0	.0	COAL	5.				100.	105.

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START OF CORE RUN	RECOVERY PERCENT	R.Q.D.	LITHOLOGY	BEDDING FRACTURES	JOINT FRACTURES	UNCLASSIFIED FRACTURES	MINOR FAULT FRACTURES	FAULT ZONE FRACTURES	TOTAL FRACTURES
76.50	101.6	.0	COAL	18.	3.				21.
77.72	68.5	.0	COAL	5.	1.				6.
78.64	104.4	.0	COAL	5.					5.
			MDST	29.			1.		30.
			SLTS	9.	1.				10.
80.47	74.6	.0	COAL	10.	5.				15.
81.69	81.4	6.0	COAL	16.	4.				20.
			MDST	6.	1.				7.
83.52	94.2	9.1	CBSH	6.	1.		3.		10.
			MDST	17.	3.				20.
84.73	95.3	.0	COAL	10.	6.				16.
			MDST	3.	1.				4.
			SLTS	22.	5.				27.
87.48	96.7	29.6	SLTS	11.	3.				14.
			SNDS	9.	8.				17.
90.52	102.0	.0	SLTS	37.	7.				44.
			SNDS	12.	8.				20.
93.57	92.8	19.7	SLTS	53.	7.				60.
96.62	101.8	27.4	COAL	14.	1.	2.			17.
			MDST	39.	1.				40.
99.36	100.3	40.1	SLTS	41.	2.				43.
102.41	100.0	30.5	SLTS	20.	2.				22.
			SNDS	12.	3.				15.
105.46	101.1	.0	COAL	3.					3.
			SNDS	9.	8.				17.
106.38	92.6	.0	COAL	32.	13.				45.
108.81	97.4	12.8	CBSH	1.					1.
			COAL	3.	1.				4.
			MDST	43.	6.		30.		79.
111.86	97.4	20.3	MDST	11.	4.				15.
			SLTS	26.	6.	4.			36.
114.91	116.4	45.9	COAL						
			SLTS	5.	5.				10.
115.52	88.9	12.7	CBSH	1.					1.
			COAL	12.	7.				19.
			MDST			18.			18.
117.96	98.6	.0	MDST			33.			33.
			SLTS			18.			18.
120.09	88.5	.0	COAL	2.					2.
			MDST			33.			33.
121.92	81.2	15.5	COAL	17.	2.	1.			20.
			MDST				30.		30.
124.05	98.0	54.1	MDST				30.		30.
			SNDS	29.	10.				39.
127.10	99.3	.0	SNDS	49.	12.		1.		62.
130.15	100.7	8.2	SNDS	37.	23.				60.

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133.20	95.7	7.2	SNDS	19.	19.				38.
136.24	97.7	3.6	SNDS	44.	3.				47.
139.29	92.5	4.9	SNDS	58.	10.				68.
142.34	100.7	.0	SNDS	61.	7.				68.
145.39	92.8	.0	SNDS	39.	12.				51.
148.44	99.7	.0	CBSH	7.					7.
			COAL	26.	3.	101.			130.
			MDST			229.			229.
			SNDS	16.	2.				18.
151.48	79.0	.0	CBSH	7.					7.
			COAL	3.		100.			103.
			MDST	42.	10.	34.			86.
154.53	92.2	.0	CBSH			29.			29.
			COAL			150.			150.
			MDST	31.	1.	109.	25.		166.
156.97	93.8	12.8	SLTS	44.	1.	1.			46.
160.17	98.1	3.7	SLTS	55.	12.				67.
163.37	100.0	.0	SLTS	56.	8.	2.			66.
166.42	95.7	.0	MDST			54.			54.
169.47	99.7	12.1	MDST			19.			19.
			SLTS			44.			44.
172.52	101.6	7.9	SLTS			46.			46.
175.56	98.1	30.0	SLTS			56.			56.
178.76	91.6	9.4	SLTS			73.			73.
181.96	100.0	6.9	SLTS			61.			61.
185.01	85.9	25.9	SLTS			49.			49.
			SNDS			17.			17.

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10.36	75.0	.0	SNDS	12.		10.			22.
11.28	97.7	.0	COAL	19.	6.	11.			36.
			SLTS	36.	4.				40.
			SNDS	15.		8.			23.
14.32	89.8	.0	COAL	3.					3.
			SLTS	44.	10.	3.			57.
17.37	103.3	5.6	NTRK						
			SLTS	44.	4.				48.
			SNDS	8.	3.	2.			13.
20.42	28.4	.0	SNDS	3.	2.	50.			55.
22.25	104.1	.0	SNDS	23.	7.	3.			33.
23.47	98.7	.0	SLTS	41.	1.				42.
			SNDS	20.	2.	1.			23.
26.52	92.1	.0	COAL	13.		51.		200.	264.
			MDST	35.		10.			45.
			SLTS	26.	2.				28.
29.56	83.6	17.0	COAL	44.		252.			296.
32.61	102.0	17.4	SLTS	53.	1.	20.			74.
35.66	98.4	13.8	SLTS	42.	6.	1.			49.
			SNDS	4.					4.
38.71	98.0	8.9	SLTS	15.	3.				18.
			SNDS	34.	2.				36.
41.76	101.0	10.9	SLTS	58.	3.	6.			67.
44.80	98.0	.0	SLTS	40.	7.				47.
			SNDS	6.					6.
47.85	99.7	.0	SLTS	28.	6.				34.
			SNDS	4.	5.				9.
50.90	98.0	5.9	SLTS	36.	3.				39.
53.95	95.1	5.2	MDST	63.	3.				66.
57.00	96.4	30.3	CBSH	4.					4.
			COAL	3.	14.	10.			27.
			MDST	18.					18.
60.04	100.7	.0	CBSH	3.					3.
			COAL	3.	1.				4.
			MDST	8.	19.				27.
63.09	97.7	.0	MDST			31.			31.
66.14	95.7	.0	MDST			31.			31.
69.19	101.6	.0	MDST			9.			9.
			SLTS	23.	17.				40.
			SNDS	11.	4.				15.
75.28	94.1	15.1	COAL			10.			10.
			SLTS	14.	20.				34.
78.33	89.2	4.9	COAL	7.	2.	110.			119.
			MDST	6.	3.				9.
			SLTS	9.	6.	13.			28.
81.38	86.7	18.2	COAL	2.	1.	10.			13.

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81.38	86.7	18.2	SLTS	9.	8.				17.
84.43	95.1	11.5	SLTS	26.	6.				32.
87.48	96.1	15.4	SNDS	12.	7.				19.
90.53	98.0	24.9	SNDS	19.	13.				32.
93.57	94.1	28.9	SNDS	14.	9.				23.
96.62	83.6	15.0	SLTS	10.	4.	20.			34.
			SNDS	5.					5.
98.75	91.1	25.6	MDST	11.		13.			24.
			SLTS	4.					4.
101.80	92.5	9.8	MDST	7.		25.	90.		122.
104.85	93.4	28.5	MDST	15.		6.	50.		71.

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3.96	73.8	.0	SLTS	8.		50.			58.
5.18	61.5	.0	SLTS	24.	5.	50.			79.
7.62	77.9	.0	SLTS	13.		50.			63.
8.84	90.2	.0	SNDS			34.			34.
11.28	77.3	.0	COAL	6.		20.			26.
			SLTS	18.		27.			45.
			SNDS	17.		20.			37.
14.32	83.9	.0	COAL	10.	2.	1.			13.
			SLTS	49.	2.	200.			251.
			SNDS			50.			50.
17.37	87.5	23.0	COAL	26.	5.	15.			46.
			MDST	28.	3.				31.
20.42	95.7	.0	COAL	8.	2.	1.			11.
			SLTS	63.	4.				67.
23.47	93.1	3.9	SLTS	67.	4.				71.
26.52	96.4	.0	SLTS	75.	2.	2.			79.
29.56	100.3	.0	SLTS	74.	2.				76.
32.61	92.1	.0	SLTS	63.	1.	4.			68.
35.66	101.0	.0	SLTS	41.	5.	50.			96.
			SNDS	22.		6.			28.
38.71	98.0	12.1	COAL	3.					3.
			SLTS	48.	3.				51.
41.76	85.9	4.6	COAL	18.	5.				23.
			MDST			14.			14.
			SLTS	20.		3.			23.
44.80	95.4	25.9	COAL	1.	2.				3.
			SLTS	35.					35.
			SNDS	12.		3.			15.
47.85	82.0	.0	CBSH	5.					5.
			COAL	25.	3.	151.			179.
			MDST	25.					25.
50.90	99.0	10.5	MDST	67.	9.	2.			78.
53.95	98.4	34.8	COAL	3.	2.				5.
			MDST	26.					26.
			SLTS	18.	1.	1.			20.
57.00	87.8	22.4	COAL	15.		12.			27.
			SLTS	29.	4.		1.		34.
60.04	88.2	8.5	COAL	18.	4.	15.			37.
			MDST	3.			6.		9.
61.57	94.1	.0	CBSH	5.					5.
			COAL	16.	1.				17.
			MDST			18.			18.
63.09	97.0	16.7	CBSH	9.					9.
			COAL	14.	3.				17.
			MDST	33.					33.
66.14	100.7	14.1	SLTS	26.	2.				28.

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66.14	100.7	14.1	SNDS	34.	4.				38.
69.19	95.1	4.3	SLTS	33.	3.				36.
			SNDS	21.					21.
72.24	95.4	24.3	SLTS	13.	2.				15.
			SNDS	22.		3.			25.
75.28	102.6	28.5	SNDS	33.		4.			37.
78.33	101.3	34.4	SNDS	40.					40.
81.38	101.3	16.7	SNDS	39.	2.	2.			43.
84.43	87.7	5.3	COAL	7.	1.				8.
			MDST	28.		50.			78.
			SNDS	8.					8.
86.67	31.6	.0	COAL	3.				100.	103.
88.39	80.4	.0	COAL	15.	3.	20.		25.	63.
89.92	82.6	.0	COAL	3.	5.	1.			9.
			MDST	3.				100.	103.
91.13	78.4	.0	COAL	7.					7.
			MDST	26.		30.			56.
92.66	91.8	6.9	CBSH			20.			20.
			COAL	8.		10.			18.
			MDST			62.			62.
			OTHR	4.					4.
95.71	90.1	.0	CBSH	20.	3.				23.
96.62	79.9	.0	COAL	9.					9.
			MDST			14.	50.		64.
99.06	76.2	.0	COAL	10.		20.			30.
			MDST	20.			15.		35.
101.50	88.5	.0	COAL	8.					8.
			MDST			28.	15.		43.
102.72	100.0	18.4	MDST			11.			11.
			SLTS	45.	7.				52.
105.76	99.3	21.3	SLTS	45.	3.				48.
108.81	94.4	43.0	MDST	18.	2.				20.
111.86	100.3	35.7	MDST			22.			22.
114.91	100.3	39.3	MDST			31.			31.
117.96	103.3	8.9	MDST			4.			4.
			SLTS			53.			53.
121.00	97.4	.0	SLTS			36.			36.
124.05	99.0	35.4	SLTS			29.			29.

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8.23	85.2	.0	SLTS			38.			38.
11.28	87.6	.0	SLTS			128.			128.
14.02	98.4	.0	SLTS			131.			131.
17.07	83.6	.0	SLTS			21.			21.
17.68	82.1	.0	SLTS			49.			49.
20.42	105.7	.0	SLTS			29.			29.
21.64	60.1	.0	SLTS			31.			31.
23.47	95.1	.0	SLTS			32.			32.
26.52	92.1	.0	SLTS			51.			51.
29.56	90.2	.0	SLTS			19.			19.
32.61	93.4	.0	SLTS			39.			39.
35.66	94.4	.0	SLTS			30.			30.
38.71	92.1	.0	SLTS			15.			15.
			SNDS			32.			32.
41.76	97.4	26.6	SNDS			33.			33.
44.80	95.1	.0	SLTS			45.			45.
			SNDS			10.			10.
47.85	96.1	.0	SLTS			52.			52.
50.90	88.5	.0	SLTS			70.			70.
53.95	91.8	7.5	SLTS	56.	15.	3.	50.		124.
57.00	78.3	.0	COAL			15.			15.
			MDST			22.			22.
			SLTS	22.	3.	50.			75.
60.04	66.2	.0	COAL	1.	5.	43.			49.
			MDST			61.	75.		136.
63.09	96.7	.0	SLTS	9.	2.				11.
			SNDS	35.					35.
66.14	13.1	.0	MDST				25.		25.
66.75	91.0	19.7	CBSH			5.			5.
			COAL	19.	1.	50.			70.
			MDST			15.			15.
			SLTS	11.					11.
69.19	93.4	.0	MDST			15.			15.
69.80	98.4	41.0	COAL	3.					3.
			MDST	7.	2.				9.
70.41	88.5	.0	COAL	5.					5.
			MDST			33.			33.
			SLTS	12.	3.				15.
72.24	95.7	9.2	SLTS	65.	4.				69.
75.28	104.3	12.5	SLTS	50.	1.	2.			53.
81.38	99.0	.0	SLTS	47.	4.	28.			79.
84.43	98.4	.0	MDST			32.			32.
			SLTS			46.			46.
87.48	100.0	.0	SLTS			36.			36.
			SNDS			36.			36.
90.52	100.0	.0	SNDS			63.			63.

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93.57	99.0	7.9	SNDS			56.			56.
96.62	100.7	13.1	SNDS			64.			64.
99.67	96.7	37.7	SNDS			35.			35.
102.11	97.7	60.7	SNDS	27.	2.	26.			55.
105.16	101.0	33.2	SNDS	31.	1.	20.			52.
108.70	97.4	8.9	SNDS			57.			57.

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7.32	96.7	.0	SLTS	17.	3.				20.
7.92	79.8	.0	SLTS	71.	3.				74.
11.28	52.6	.0	CBSH						
			MDST	12.					12.
			SLTS	8.		1.			9.
13.41	83.6	.0	MDST	11.					11.
			SLTS	41.	3.				44.
16.46	78.7	.0	COAL						
			SLTS	45.	1.				46.
18.29	82.2	.0	SLTS	27.		2.			29.
19.81	90.1	.0	SLTS	49.	3.				52.
23.16	79.5	.0	SLTS	34.	1.				35.
25.60	90.7	.0	CBSH	3.		200.			203.
			SLTS	35.					35.
27.74	85.7	.0	CBSH			32.			32.
			SLTS			16.			16.
29.56	98.4	.0	OTHR			45.			45.
32.61	99.3	.0	OTHR			102.			102.
35.66	101.0	.0	OTHR			52.			52.
38.71	114.8	.0	OTHR			11.			11.
39.32	93.9	.0	OTHR			47.			47.
41.76	96.7	.0	OTHR			52.			52.
44.80	99.3	5.9	SNDS	47.	4.	1.			52.
47.85	97.4	4.3	OTHR			22.			22.
			SNDS	3.	3.	20.			26.
50.95	101.0	.0	OTHR			39.			39.
53.95	95.7	.0	OTHR			48.			48.
57.00	102.6	.0	OTHR			46.			46.
60.04	99.3	.0	OTHR			48.			48.
63.09	99.3	.0	OTHR			39.			39.
66.14	96.1	.0	SNDS			77.			77.
69.19	99.7	8.9	SNDS	38.	11.	1.			50.
72.24	90.1	.0	OTHR			36.			36.
			SNDS	9.	4.	2.			15.
75.28	92.8	.0	OTHR			65.			65.
78.33	95.4	.0	SLTS			66.			66.
81.31	100.3	.0	SLTS			76.			76.
84.43	92.5	.0	CBSH			50.			50.
			MDST			27.		50.	77.
			SLTS			45.			45.
87.48	86.2	.0	CBSH					50.	50.
			COAL			3.			3.
			MDST			36.		100.	136.
89.00	82.2	.0	COAL					20.	20.
			MDST					100.	100.
			SLTS			29.			29.

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90.52	83.6	.0	CBSH					200.	200.
			COAL					525.	525.
			MDST			66.		100.	166.
			SLTS			10.			10.
93.57	96.4	16.7	CBSH	1.		4.			5.
			COAL	9.					9.
			MDST			29.			29.
			SLTS	28.	6.				34.
96.62	100.3	37.0	SLTS	39.	2.				41.
99.67	99.0	21.3	MDST	39.	5.	1.			45.
102.72	97.1	29.2	MDST			43.			43.
105.46	95.1	18.4	MDST			47.			47.
108.51	100.7	14.1	MDST			10.			10.
			SLTS			52.			52.
111.56	102.3	53.0	SLTS			35.			35.
114.60	96.1	52.5	SLTS			29.			29.
117.65	102.0	49.8	SLTS			60.			60.
120.70	87.5	48.2	SLTS			43.			43.

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START OF CORE RUN	RECOVERY PERCENT	R.Q.D.	LITHOLOGY	BEDDING FRACTURES	JOINT FRACTURES	UNCLASSIFIED FRACTURES	MINOR FAULT FRACTURES	FAULT ZONE FRACTURES	TOTAL FRACTURES
7.01	91.2	.0	SLTS	30.	1.	1.			32.
7.92	100.0	.0	SLTS	105.	3.				108.
10.97	94.4	.0	SLTS	113.	11.				124.
14.17	92.2	.0	SLTS	107.	6.				113.
17.37	97.9	.0	SLTS	78.	11.	3.			92.
20.27	97.7	.0	SLTS	74.	6.	1.			81.
23.32	94.4	.0	SLTS	79.	8.	2.	50.		139.
26.52	84.9	.0	SLTS	81.	2.				83.
			SNDS	51.	2.				53.
29.57	92.8	5.9	COAL	2.					2.
			SLTS		1.	1.			2.
			SNDS	38.		9.			47.
32.61	94.4	16.4	COAL	2.		4.			6.
			SLTS	39.		29.	50.		118.
			SNDS	17.	2.				19.
35.66	94.4	32.2	CBSH			14.			14.
			COAL			100.			100.
			SLTS			5.			5.
			SNDS	14.	3.				17.
38.70	19.8	.0	SLTS			50.			50.
39.01	91.3	.0	MDST			9.			9.
			SLTS			25.		50.	75.
			SNDS	55.	8.				63.
41.76	99.3	.0	SLTS					999.	999.
44.81	99.3	.0	SLTS	6.				999.	1005.
47.85	101.0	4.2	SLTS	59.	3.	1.			63.
50.90	98.4	.0	SLTS	77.	4.	3.			84.
53.95	98.4	.0	SLTS	18.		20.			38.
			SNDS	33.	6.	20.			59.
57.00	100.3	.0	GOUG					999.	999.
			SNDS	37.	5.				42.
60.04	92.6	.0	GOUG					999.	999.
61.26	84.2	.0	GOUG					999.	999.
63.09	60.7	.0	GOUG					750.	750.
			SNDS	8.		1.			9.
64.31	75.4	.0	SNDS	46.	1.	1.			48.
66.14	99.3	.0	SLTS	57.	1.	1.			59.
			SNDS	32.	5.				37.
69.19	46.2	.0	COAL					50.	50.
			GOUG					100.	100.
			MDST					200.	200.
			SLTS	8.		20.			28.
72.24	99.0	.0	SLTS	61.	14.	1.			76.
75.29	92.4	10.5	GOUG					25.	25.
			SLTS	52.	4.				56.
78.33	96.4	.0	GOUG					1499.	1499.

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78.33	96.4	.0	NTRK						
81.38	82.5	.0	SNDS	36.	4.				40.
84.12	99.3	.0	SLTS	19.	29.				48.
87.17	96.4	.0	SLTS	38.	11.				49.
90.22	95.2	.0	SLTS					999.	999.
93.57	101.3	.0	SLTS	61.	2.				63.
96.62	96.7	10.2	SLTS	50.					50.
99.67	98.7	14.1	SLTS	42.	1.	1.			44.
102.72	95.4	5.6	SLTS	63.	8.			50.	121.
105.76	101.6	.0	SLTS	56.	16.	1.			73.
108.81	101.3	6.6	SLTS	49.	9.				58.
111.86	97.4	28.9	SLTS	36.	10.				46.
114.91	93.1	8.9	SLTS	16.	15.	14.		20.	65.
117.96	93.1	.0	SLTS			52.			52.
121.01	101.0	7.9	SLTS			68.			68.
124.05	91.1	16.1	SLTS			55.			55.
127.10	96.4	.0	SLTS			47.			47.
130.15	89.5	.0	COAL					25.	25.
			GOUG					999.	999.
132.44	67.7	.0	COAL	6.	3.	1.		999.	1009.
134.11	87.3	.0	COAL					200.	200.
			SLTS	35.	13.	2.			50.
136.24	98.0	23.9	SLTS	55.	9.				64.
139.29	101.0	8.2	SLTS	1.	4.	1.			6.
			SNDS	49.	8.				57.
142.34	91.5	8.2	SLTS	53.	5.			15.	73.
145.39	82.3	.0	COAL	12.	1.			150.	163.
			MDST	3.		6.			9.
			SLTS					200.	200.
148.44	96.1	38.5	MDST	8.	2.				10.
			SNDS	39.	4.	1.			44.
151.48	73.4	4.3	COAL					300.	300.
			MDST	53.	6.	20.			79.
			SNDS	3.					3.
154.53	94.8	.0	COAL	1.	2.	50.			53.
			SLTS	43.	22.	10.			75.
157.58	97.7	.0	SLTS	41.	5.				46.
			SNDS	28.	3.				31.
160.63	13.1	.0	OTHR						
163.68	90.2	.0	SNDS	56.	10.				66.
166.12	100.7	.0	SNDS	17.	11.	5.			33.
169.16	101.6	.0	CBSH					20.	20.
			COAL	6.	3.	20.		50.	79.
			MDST			100.			100.
			SLTS	9.	2.				11.
			SNDS	13.	10.				23.

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172.21	94.5	5.8	CBSH	38.	2.				40.
			COAL	12.	5.		10.		27.
			MDST					50.	50.
174.96	114.2	.0	COAL	12.	3.				15.
			MDST			28.		50.	78.
176.17	91.3	17.8	COAL	5.					5.
			MDST	37.	6.	200.			243.
178.92	100.3	22.4	MDST	38.	4.				42.
			SLTS	42.	9.	2.			53.
181.96	99.0	.0	MDST	57.	7.				64.
185.01	102.5	.0	COAL	6.		10.			16.
			MDST	43.	2.	31.			76.
187.45	79.3	4.9	COAL	33.	4.	1.			38.
			MDST	16.	1.				17.
190.50	93.4	4.9	CBSH	2.		100.			102.
			COAL	11.	3.				14.
			MDST	29.		28.			57.
			NTRK						
193.55	88.5	15.3	COAL	10.					10.
			MDST			39.			39.
195.38	97.3	39.0	COAL	4.					4.
			MDST	12.	6.	25.			43.
197.20	100.7	23.9	SLTS	41.	1.				42.
200.25	100.7	53.1	SLTS	42.		1.			43.
203.30	99.7	50.8	MDST	41.					41.
206.35	95.1	31.8	MDST			46.			46.
209.40	103.0	14.8	MDST			59.			59.
212.44	92.8	15.7	MDST			51.			51.

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8.23	92.8	61.6	SNDS	30.	1.	20.			51.
11.28	78.6	7.2	MDST	16.		46.			62.
			SNDS	17.		20.			37.
14.32	65.4	.0	COAL	10.		4.			14.
			MDST		2.	85.			87.
16.46	48.5	5.1	MDST			21.			21.
			SNDS	17.	3.	30.			50.
19.20	78.7	.0	MDST			58.			58.
22.25	41.4	.0	MDST					60.	60.
23.12	76.6	6.0	SNDS			30.		3.	33.
25.60	91.8	23.0	SNDS	6.		56.			62.
28.65	75.4	7.9	COAL	3.		4.			7.
			MDST	26.				40.	66.
			SNDS	9.	9.				18.
31.70	87.2	46.6	SNDS	30.	7.				37.
35.05	90.2	36.3	SNDS	30.	7.	15.			52.
38.71	86.9	11.7	COAL						
			MDST	6.		40.			46.
			SLTS	25.		10.			35.
40.84	90.2	21.3	COAL	20.	2.	60.			82.
			MDST	15.		40.			55.
			SNDS	5.	4.				9.
43.28	98.4	.0	GOUG						
			MDST	13.		2.	3.		18.
44.50	38.8	.0	COAL	5.		50.			55.
			LC						
46.02	92.9	.0	SLTS	15.		20.		16.	51.
47.85	88.5	.0	GOUG						
			SLTS			8.			8.
50.90	100.0	.0	MDST						
			SLTS	12.					12.
53.95	79.8	.0	SLTS	6.		60.			66.
55.78	106.6	.0	SLTS	10.	5.	40.			55.
57.00	97.0	13.2	SNDS	33.	2.	19.			54.
60.04	93.4	11.1	SLTS	56.	17.	70.			143.
63.09	93.4	.0	COAL						
			MDST	18.	3.	51.			72.
63.70	92.9	.0	COAL	50.	10.	80.			140.
65.53	93.9	.0	COAL	15.	3.				18.
			MDST	34.	2.	20.			56.
67.66	86.9	.0	MDST	26.	12.	20.			58.
69.19	98.7	.0	MDST	86.		61.			147.
72.23	98.4	.0	MDST	76.	10.	32.			118.
75.28	28.7	.0	MDST			80.			80.
77.72	105.1	.0	MDST	10.					10.
			NTRK						

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79.86	92.1	.0	MDST			50.		50.	100.
81.38	89.2	3.9	COAL	8.					8.
			MDST			57.			57.
			NTRK						
84.43	95.1	.0	MDST			68.			68.
			SNDS			65.		20.	85.
87.48	96.7	10.9	SNDS	35.	18.	40.		25.	118.
90.52	101.6	.0	COAL	1.	1.				2.
			GOUG						
			MDST	45.	7.	132.			184.
			NTRK						
			SNDS			10.			10.
93.57	91.8	7.9	MDST	55.		25.		50.	130.
96.62	97.7	.0	MDST			98.			98.
99.67	109.3	.0	MDST	15.	10.	100.			125.
101.50	72.1	.0	MDST			15.			15.
102.72	105.3	.0	MDST			80.			80.
104.24	98.7	19.7	MDST			39.			39.
105.76	91.8	4.6	MDST			70.		45.	115.
108.81	91.8	4.9	MDST			90.		80.	170.

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START OF CORE RUN	RECOVERY PERCENT	R.Q.D.	LITHOLOGY	BEDDING FRACTURES	JOINT FRACTURES	UNCLASSIFIED FRACTURES	MINOR FAULT FRACTURES	FAULT ZONE FRACTURES	TOTAL FRACTURES
6.10	76.5	.0	MDST			37.			37.
8.23	98.4	.0	MDST			68.			68.
11.28	100.3	.0	MDST			90.			90.
14.32	92.5	.0	MDST			156.			156.
17.37	95.1	.0	MDST			115.			115.
20.42	98.4	7.2	MDST			177.			177.
23.47	99.7	.0	MDST			109.			109.
26.52	92.2	.0	MDST			140.			140.
28.96	88.8	.0	MDST			122.			122.
32.00	85.2	.0	MDST			294.			294.
35.05	101.6	.0	SLTS			300.			300.
38.10	101.6	.0	SLTS			110.			110.
41.15	87.5	.0	COAL	15.	20.	30.			65.
			MDST			16.			16.
			SLTS			80.			80.
44.35	103.3	3.9	COAL			17.			17.
			SLTS	45.	35.	17.			97.
47.40	90.6	7.8	SLTS	63.	1.	40.			104.
			SNDS			20.			20.
50.60	98.7	6.6	MDST	30.		32.			62.
			SNDS	50.	5.	30.			85.
53.64	82.1	.0	MDST	80.	1.				81.
57.00	71.0	.0	COAL	13.		60.			73.
			MDST	10.	4.			8.	22.
58.83	97.5	9.9	COAL	6.	2.				8.
			MDST	40.		100.			140.
60.04	103.3	.0	COAL	25.	5.	160.			190.
			MDST			91.			91.
62.79	65.8	9.9	COAL	25.	12.				37.
64.31	88.5	8.7	COAL	10.	4.				14.
			MDST	60.	8.	40.			108.
66.14	95.7	.0	MDST	90.	29.	1.			120.
69.19	101.6	.0	MDST	160.		148.			308.
			SNDS	2.					2.
72.28	92.1	.0	COAL	10.	15.			50.	75.
			SNDS	20.	6.				26.
74.52	104.2	.0	MDST	50.		200.		155.	405.
77.11	100.0	.0	MDST	200.				80.	280.
80.16	84.4	.0	MDST	22.	3.				25.
81.38	102.2	73.0	COAL	16.	3.	20.			39.
			MDST	18.					18.
82.75	78.7	.0	COAL	20.	16.	10.			46.
83.97	78.4	.0	COAL	25.	8.	60.			93.
			MDST			5.			5.
85.50	81.2	.0	MDST			165.			165.
87.47	97.8	.0	MDST		28.	40.			68.

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89.31	56.6	.0	COAL	6.	5.	100.			111.
90.37	95.0	4.4	COAL	10.	3.	20.			33.
			MDST			73.			73.
			SNDS	34.					34.
93.57	100.0	10.8	SNDS	52.	10.	50.			112.
96.62	95.9	11.1	COAL	10.		200.			210.
			MDST	40.		20.			60.
			SNDS	30.	10.	30.			70.
99.06	101.0	4.9	COAL	81.	1.				82.
			MDST	5.		42.			47.
102.11	101.3	9.9	MDST	57.	10.	30.			97.
105.15	89.6	4.5	MDST	60.	10.	1.			71.
108.51	101.3	.0	MDST	70.	15.	20.			105.
111.57	99.0	.0	MDST			120.			120.
114.60	99.3	.0	MDST			55.			55.
			SLTS			8.			8.
117.65	86.6	6.0	SLTS			148.			148.
121.00	101.6	3.9	SLTS			47.			47.
124.05	94.4	4.9	SLTS			152.			152.
127.10	96.1	13.1	SLTS			86.			86.

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9.45	80.9	28.4	SLTS	16.	4.				20.
11.28	92.8	5.3	SLTS	44.	7.				51.
14.32	98.0	3.9	SLTS	62.	8.	2.			72.
17.37	98.0	10.5	SLTS	57.	4.				61.
20.42	96.4	13.4	SLTS	60.	7.	2.			69.
23.47	101.6	8.5	SLTS	51.	6.	2.			59.
26.52	100.0	16.8	SLTS	39.	9.				48.
29.56	83.0	3.6	SLTS	64.	4.	1.			69.
32.61	73.0	.0	SLTS	7.	2.	33.			42.
35.05	100.3	.0	SLTS	63.	9.	4.			76.
38.10	95.7	9.2	SLTS			39.	20.		59.
41.15	96.7	22.6	SLTS			96.			96.
42.20	89.8	9.9	SLTS	57.	14.	2.			73.
47.24	100.7	21.3	SLTS	43.	7.	1.			51.
50.29	83.9	15.7	SLTS	48.	1.				49.
			SNDS			9.			9.
53.34	96.2	.0	SNDS			89.			89.
57.00	95.7	.0	SNDS			107.			107.
60.04	89.2	.0	SNDS	58.	5.	42.			105.
63.09	97.0	24.3	SNDS	50.	5.	1.			56.
66.14	101.6	64.3	SNDS	25.	3.				28.
69.19	94.7	30.3	SLTS	23.	8.				31.
			SNDS	14.	1.				15.
72.23	91.8	9.5	COAL	5.	2.	20.			27.
			MDST			39.			39.
			SLTS	40.	2.				42.
75.28	94.4	6.1	COAL	9.	2.	15.			26.
			MDST			28.			28.
77.42	101.1	34.1	COAL	13.	2.				15.
78.33	96.7	15.7	COAL	9.	2.				11.
			SLTS	39.	4.				43.
81.38	94.1	11.1	SLTS	36.	9.				45.
84.43	92.5	7.5	SLTS	55.	2.				57.
			SNDS	13.					13.
87.48	91.5	15.4	MDST	7.	2.				9.
			SNDS	54.	4.				58.
90.52	60.1	.0	COAL	8.			75.		83.
			NTRK						
			SNDS	5.	1.	25.			31.
91.44	62.9	.0	CBSH	8.					8.
			COAL			20.			20.
			MDST	29.	3.				32.
93.57	82.5	.0	COAL		3.		5.		8.
			MDST		3.				3.
95.40	90.2	29.5	CBSH	5.					5.
			COAL	8.	3.				11.

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96.62	94.8	11.3	CBSH	4.					4.
			COAL	16.	3.				19.
			NTRK						
			SLTS	25.	1.		25.		51.
98.75	66.8	18.7	SLTS	21.	3.	2.			26.
100.89	133.9	16.9	SLTS	41.	10.				51.
102.72	93.4	.0	COAL	14.	6.	25.			45.
103.94	90.7	39.0	COAL	14.	5.		20.		39.
			MDST	9.					9.
105.76	86.9	.0	COAL	2.	2.		15.		19.
			MDST	53.					53.
107.29	65.8	.0	COAL	9.	4.				13.
			MDST	8.					8.
108.81	93.1	20.0	SLTS	11.	2.				13.
			SNDS	24.	4.	3.			31.
111.56	102.3	25.3	SNDS	46.	6.				52.
114.60	100.3	38.7	SNDS	51.	10.				61.
117.65	100.3	10.8	SLTS	48.	10.				58.
			SNDS	6.					6.
120.70	101.3	10.5	SLTS	49.	8.				57.
123.75	85.8	4.7	COAL	10.	1.				11.
			MDST			70.			70.
			SLTS						
126.49	95.1	22.6	COAL	8.	9.	1.			18.
			MDST			54.			54.
129.54	101.0	.0	MDST			67.			67.
132.59	90.1	.0	COAL	4.	1.				5.
			MDST			40.			40.
134.11	75.1	.0	MDST			53.			53.
136.24	108.2	.0	COAL			15.			15.
			MDST			49.			49.
138.07	76.2	.0	MDST			36.			36.
139.29	92.8	27.9	COAL	17.	1.	10.			28.
			MDST	21.		12.			33.
142.34	89.5	13.8	COAL	10.	2.	10.			22.
			MDST	11.		48.			59.
			SLTS	25.					25.
145.39	95.7	15.7	SLTS	87.	8.	1.			96.
148.44	99.3	24.7	SLTS	48.	3.				51.
151.48	98.0	29.8	SLTS	39.	3.				42.
154.53	100.3	24.3	SLTS	15.		28.			43.
157.58	99.3	10.2	SLTS			51.			51.
160.63	95.7	4.3	SLTS			62.			62.
163.68	88.2	20.7	SNDS			51.			51.
166.72	100.7	48.5	SNDS			36.			36.
169.77	100.0	58.7	SNDS			25.			25.

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START OF CORE RUN	RECOVERY PERCENT	R.Q.D.	LITHOLOGY	BEDDING FRACTURES	JOINT FRACTURES	UNCLASSIFIED FRACTURES	MINOR FAULT FRACTURES	FAULT ZONE FRACTURES	TOTAL FRACTURES
10.36	87.0	.0	SLTS	12.		50.			62.
11.28	87.6	.0	SLTS	47.	9.	3.			59.
14.02	79.2	.0	SLTS	27.	15.				42.
15.85	87.8	.0	SLTS			44.			44.
19.20	100.3	11.1	SLTS			61.			61.
22.25	83.6	.0	SLTS			60.			60.
25.00	98.4	.0	SLTS	36.	12.	14.			62.
28.04	83.6	13.6	SLTS	31.	9.				40.
30.18	88.1	11.1	SLTS	36.	6.	3.			45.
32.61	63.3	9.8	SLTS	33.	5.				38.
35.66	28.2	.0	SLTS	16.	3.				19.
38.71	195.4	.0	SLTS	86.	9.				95.
40.23	91.5	.0	SLTS	36.	5.				41.
41.76	242.9	16.5	SLTS	38.	10.				48.
42.67	95.3	.0	SLTS	31.	11.				42.
44.81	90.1	.0	SLTS	75.	5.				80.
47.85	97.7	.0	SLTS	63.	2.	3.			68.
50.90	98.0	.0	SLTS	73.	5.	4.			82.
53.95	98.7	5.2	SNDS			92.			92.
57.00	99.0	28.9	SNDS	44.	6.				50.
60.04	95.9	.0	COAL	7.		15.			22.
			SLTS	63.	8.	51.			122.
62.48	90.6	.0	COAL	1.	2.	10.			13.
			SLTS	31.	11.	100.			142.
64.92	86.3	.0	COAL			50.			50.
			SLTS	37.	4.				41.
66.75	67.2	.0	SLTS	28.	2.	1.			31.
			SNDS	3.					3.
69.19	91.8	19.7	SNDS	28.	7.	11.			46.
72.24	88.2	3.9	SNDS	56.	5.	5.			66.
75.29	96.1	.0	COAL	1.		2.			3.
			SLTS	16.	3.	50.			69.
			SNDS	32.	9.				41.
78.33	97.7	.0	SLTS	71.	21.				92.
81.38	98.9	.0	SLTS	40.	4.				44.
			SNDS	35.	3.				38.
84.12	73.2	.0	COAL	7.		26.			33.
			MDST	23.		4.			27.
85.95	73.2	15.7	COAL	10.	4.				14.
87.48	91.1	.0	MDST	66.	7.	45.			118.
90.53	80.3	.0	GOUG					500.	500.
93.57	95.6	.0	COAL					250.	250.
			SLTS	23.	3.	3.			29.
95.40	34.9	.0	COAL			50.		100.	150.
			GOUG					500.	500.
98.15	71.7	.0	COAL	8.	2.	2.			12.

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START OF CORE RUN	RECOVERY PERCENT	R.Q.D.	LITHOLOGY	BEDDING FRACTURES	JOINT FRACTURES	UNCLASSIFIED FRACTURES	MINOR FAULT FRACTURES	FAULT ZONE FRACTURES	TOTAL FRACTURES
98.75	82.0	.0	COAL		1.	3.			4.
			GOUG					100.	100.
			SLTS	13.	2.				15.
100.58	100.9	.0	SLTS						
			SNDS	22.	8.				30.
102.72	98.0	.0	SNDS	33.	5.	4.			42.
105.77	98.0	.0	SNDS	45.	8.				53.
108.81	98.7	.0	GOUG					20.	20.
			SNDS	34.	4.	1.			39.
111.86	164.5	.0	COAL	2.					2.
			GOUG					100.	100.
112.17	86.0	22.3	COAL	5.	8.				13.
			MDST			100.			100.
113.38	82.4	.0	COAL	2.	1.				3.
			SLTS	43.	4.				47.
114.91	96.1	.0	CBSH	5.					5.
			COAL	3.	2.				5.
			MDST			42.			42.
			SLTS	46.	5.				51.
117.96	51.3	.0	COAL	1.	12.	15.			28.
			MDST	5.		25.	25.		55.
119.48	85.4	.0	CBSH	8.					8.
			COAL	7.	1.	1.			9.
			MDST			79.			79.
122.83	79.5	.0	COAL	10.	1.	1.			12.
			MDST			22.			22.
124.05	97.4	.0	SLTS	81.	10.				91.
127.10	98.0	.0	SLTS	80.	3.	3.			86.
130.15	101.6	.0	MDST	74.	9.				83.
133.20	95.7	.0	MDST			48.			48.
136.25	96.7	.0	GOUG					500.	500.
			MDST			7.			7.
139.29	99.7	.0	SLTS			77.			77.
142.34	101.6	.0	SLTS			70.			70.
145.39	97.7	.0	SLTS			62.			62.

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START OF CORE RUN	RECOVERY PERCENT	R.Q.D.	LITHOLOGY	BEDDING FRACTURES	JOINT FRACTURES	UNCLASSIFIED FRACTURES	MINOR FAULT FRACTURES	FAULT ZONE FRACTURES	TOTAL FRACTURES
26.52	78.9	.0	SLTS						
28.04	19.7	.0	SLTS						
28.65	48.9	.0	COAL						
			SLTS	11.					11.
29.57	57.6	.0	SLTS			15.			15.
32.00	90.2	18.9	SLTS	14.		3.			17.
			SNDS	9.					9.
34.44	75.4	4.3	SLTS	3.					3.
37.49	100.0	12.3	SLTS	9.	3.	1.			13.
38.71	29.5	.0	COAL			10.			10.
			SLTS	3.					3.
39.32	82.0	.0	COAL						
			SLTS	26.	3.	3.			32.
41.76	85.8	39.3	COAL	9.					9.
			SLTS	11.					11.
43.59	47.5	.0	COAL	2.		50.			52.
			MDST			4.			4.
44.81	77.3	.0	COAL	3.		10.			13.
			SLTS	6.					6.
47.85	80.7	26.6	COAL			2.			2.
			SLTS	12.	8.				20.
50.90	72.1	19.7	CBSH	4.					4.
			COAL			30.			30.
			SLTS			4.			4.
52.12	91.3	.0	COAL			25.			25.
			SLTS	10.		11.			21.
53.95	92.8	39.5	SLTS	7.		3.			10.
55.47	82.6	22.0	SLTS	24.	4.				28.
58.52	44.9	.0	COAL			50.			50.
			SLTS			7.			7.
59.59	64.8	.0	COAL	6.		15.			21.
			MDST			11.			11.
60.50	103.3	25.0	COAL	13.		17.	20.		50.
61.42	92.7	.0	COAL	7.	2.	51.			60.
			SLTS	7.	2.	1.			10.
62.79	97.4	9.8	SLTS	36.	5.	2.			43.
65.84	90.5	11.5	MDST			13.			13.
68.27	94.3	18.9	MDST			19.			19.
70.71	101.3	8.5	SLTS	29.	2.	1.			32.
72.24	98.0	23.9	SLTS	28.	4.	1.			33.
75.29	95.6	.0	COAL	14.					14.
			SLTS	1.		3.			4.
76.20	109.9	.0	COAL	6.		35.			41.
			SLTS	16.	4.		25.		45.
77.11	66.6	.0	COAL	11.		25.			36.
			MDST	8.	1.	13.			22.

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START OF CORE RUN	RECOVERY PERCENT	R.Q.D.	LITHOLOGY	BEDDING FRACTURES	JOINT FRACTURES	UNCLASSIFIED FRACTURES	MINOR FAULT FRACTURES	FAULT ZONE FRACTURES	TOTAL FRACTURES
80.16	104.1	28.7	MDST	7.	3.				10.
81.38	83.6	4.6	CBSH				10.		10.
			COAL	10.			10.		20.
			MDST	4.	1.	18.			23.
84.43	100.4	42.0	MDST			1.			1.
			OTHR			4.			4.
			SNDS	3.	4.	13.			20.
87.17	84.3	18.4	MDST			29.			29.
			SLTS	2.	1.				3.
			SNDS	1.					1.
90.22	112.7	22.1	MDST			120.			120.
92.66	92.5	34.1	MDST			176.			176.
95.86	76.8	.0	CBSH	4.					4.
			COAL	4.	3.	5.			12.
			MDST	7.					7.
97.54	115.5	28.6	CBSH	2.					2.
			MDST	6.		25.			31.
99.67	72.4	24.3	COAL	3.	2.	10.			15.
			MDST	9.	1.				10.
101.19	81.9	.0	COAL	17.	2.	1.			20.
102.57	90.0	32.5	COAL	5.					5.
			MDST			25.	25.		50.
105.46	90.6	.0	CBSH	6.	1.				7.
			MDST			21.			21.
107.59	41.6	.0	COAL			50.			50.
			MDST						
108.36	94.4	62.3	CBSH	1.					1.
			COAL	8.		1.			9.
			SLTS			26.			26.
111.57	86.1	47.0	CBSH	5.		10.			15.
			SLTS			15.			15.
113.08	84.7	46.4	CBSH	15.		15.			30.
			SLTS			7.			7.
114.91	91.5	29.8	CBSH	7.					7.
			MDST			37.			37.
			OTHR			5.			5.
			SLTS			1.			1.
			SNDS			1.			1.
117.96	89.8	33.6	OTHR			28.			28.
120.40	97.7	44.4	SLTS	6.		15.			21.
			SNDS	6.	1.	4.			11.
123.44	93.2	12.5	CBSH	37.					37.
			MDST			36.	50.		86.
			SLTS	2.		4.			6.
126.80	88.5	26.6	MDST			88.			88.
129.84	91.1	47.3	MDST			12.			12.

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START OF CORE RUN	RECOVERY PERCENT	R.Q.D.	LITHOLOGY	BEDDING FRACTURES	JOINT FRACTURES	UNCLASSIFIED FRACTURES	MINOR FAULT FRACTURES	FAULT ZONE FRACTURES	TOTAL FRACTURES
129.84	91.1	47.3	OTHR			13.			13.
			TUFF			5.			5.
133.20	102.0	70.2	TUFF			20.			20.

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START OF CORE RUN	RECOVERY PERCENT	R.Q.D.	LITHOLOGY	BEDDING FRACTURES	JOINT FRACTURES	UNCLASSIFIED FRACTURES	MINOR FAULT FRACTURES	FAULT ZONE FRACTURES	TOTAL FRACTURES
21.34	100.0	29.7	SLTS	3.		6.			9.
23.16	89.1	7.1	SLTS	18.	1.	11.			30.
25.00	101.7	.0	SLTS	6.	3.	7.			16.
25.60	74.3	6.5	COAL	19.	4.	3.			26.
			OTHR						
27.74	95.6	25.3	COAL	14.					14.
28.65	72.1	.0	COAL	7.	4.			50.	61.
29.87	74.7	.0	COAL	13.					13.
30.78	59.0	.0	COAL	7.		10.		50.	67.
			MDST	48.					48.
32.00	97.8	13.0	COAL	12.	1.				13.
			MDST			6.			6.
32.92	84.9	.0	MDST	13.		59.			72.
34.44	59.0	22.1	COAL	5.					5.
			MDST	5.	2.				7.
35.66	95.4	.0	MDST	21.	2.	1.	20.		44.
37.18	82.4	37.3	MDST	10.					10.
38.71	103.3	21.3	MDST	13.					13.
39.32	83.1	34.4	MDST	11.	2.				13.
41.15	85.2	32.8	COAL		1.				1.
			MDST	10.					10.
42.37	54.6	.0	COAL	12.	3.	51.			66.
44.20	78.9	.0	COAL	3.	3.	20.			26.
			MDST	8.					8.
			SLTS	10.	1.	5.			16.
47.24	91.1	40.0	SLTS	19.	2.	7.			28.
50.29	100.3	21.3	COAL	5.	3.	30.			38.
			MDST	17.		11.			28.
			SLTS			8.			8.
53.34	92.1	4.3	SLTS			44.			44.
56.39	101.0	17.0	SLTS			42.			42.
59.44	99.0	.0	SLTS			63.			63.
62.48	92.9	17.6	MDST	23.	20.	4.			47.
65.84	99.0	10.5	MDST			44.			44.
68.84	98.7	21.7	MDST			19.			19.
			SLTS			20.			20.
71.92	93.5	20.5	SLTS			39.			39.
75.28	90.5	40.3	SLTS			30.			30.
78.33	102.0	50.2	SLTS			29.			29.
81.38	104.6	18.7	SLTS			53.			53.
84.43	99.7	28.2	SLTS			35.			35.
87.48	92.8	16.4	SLTS			50.			50.
90.52	104.4	49.5	SLTS			30.			30.
			SNDS			11.			11.
93.27	91.8	24.9	SNDS			43.			43.
96.32	97.0	34.2	SNDS			35.			35.

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START OF CORE RUN	RECOVERY PERCENT	R.Q.D.	LITHOLOGY	BEDDING FRACTURES	JOINT FRACTURES	UNCLASSIFIED FRACTURES	MINOR FAULT FRACTURES	FAULT ZONE FRACTURES	TOTAL FRACTURES
99.36	84.9	12.5	SLTS			45.			45.
102.41	97.4	15.7	SLTS			48.			48.

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7.62	65.6	.0	SLTS			23.			23.
9.45	30.6	.0	SLTS			20.			20.
11.28	32.1	.0	SNDS	23.					23.
14.33	89.5	.0	SNDS	53.	4.	4.			61.
17.37	53.6	.0	COAL			20.			20.
			MDST	29.	2.				31.
			SNDS	5.	2.				7.
19.20	78.2	.0	COAL	8.		73.			81.
			SNDS	40.	6.	3.			49.
21.95	100.0	.0	SNDS	35.	4.				39.
23.47	35.0	.0	COAL			100.			100.
			MDST			7.			7.
25.30	35.2	.0	MDST			11.			11.
26.52	45.9	.0	COAL					500.	500.
			MDST			5.			5.
27.74	72.6	.0	COAL	4.		2.		50.	56.
			MDST	22.		35.			57.
			SLTS	97.	11.				108.
32.16	83.6	.0	SLTS	85.	2.	1.			88.
35.51	119.3	.0	SLTS	75.	12.				87.
38.10	100.3	4.9	MDST			47.			47.
			SLTS	31.	4.				35.
41.45	70.5	28.9	MDST			32.			32.
44.81	17.8	4.9	SLTS			26.			26.
47.85	244.3	95.9	SLTS			49.			49.
49.07	163.9	114.8	SLTS			22.			22.

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START OF CORE RUN	RECOVERY PERCENT	R.Q.D.	LITHOLOGY	BEDDING FRACTURES	JOINT FRACTURES	UNCLASSIFIED FRACTURES	MINOR FAULT FRACTURES	FAULT ZONE FRACTURES	TOTAL FRACTURES
6.70	71.9	.0	SLTS	5.	2.				7.
8.23	60.7	.0	SLTS	6.	3.	1.			10.
			SNDS	29.	1.				30.
11.28	99.3	23.7	SNDS	42.	2.				44.
14.32	94.7	6.1	SLTS	16.	2.				18.
			SNDS	29.	2.	1.			32.
16.76	4.3	.0	COAL			10.			10.
17.22	93.4	.0	COAL			50.			50.
			SLTS	7.					7.
			SNDS	40.	5.				45.
19.96	89.4	25.9	SNDS	46.	1.	3.			50.
23.16	100.0	38.7	SNDS	33.	2.				35.
26.21	101.0	19.3	SLTS	43.					43.
			SNDS	7.					7.
29.26	92.2	.0	SLTS	78.	4.				82.
32.46	96.5	.0	MDST	62.		18.			80.
35.05	77.0	51.9	COAL	18.	4.				22.
36.88	93.5	.0	COAL	11.	2.				13.
			MDST			4.			4.
			SLTS	11.					11.
38.56	93.1	3.7	SLTS	53.					53.
41.76	100.0	.0	SNDS	69.	2.	2.			73.
44.80	98.4	10.5	SNDS	45.	2.	1.			48.
47.85	101.3	23.9	SNDS	54.		3.			57.
50.90	69.3	.0	SNDS	37.					37.
53.64	96.1	.0	CBSH	15.	1.				16.
			MDST	19.	1.				20.
			SLTS	22.		1.			23.
56.39	105.6	7.5	MDST	61.					61.
59.44	93.3	38.3	COAL	5.	6.	1.			12.
60.04	93.4	4.9	COAL		3.				3.
			MDST	84.					84.
63.09	90.8	23.9	COAL	10.	1.	10.			21.
			MDST	27.		26.			53.
			SLTS	2.					2.
			SNDS	6.					6.
66.14	89.4	4.4	CBSH	6.	4.				10.
			COAL	9.	2.	10.			21.
			MDST			61.			61.
68.88	99.0	.0	MDST			83.			83.
71.93	134.8	53.3	COAL	10.	3.				13.
			MDST			15.			15.
72.85	96.7	11.1	MDST	37.		12.			49.
75.28	100.7	24.6	COAL	3.					3.
			MDST	60.	2.				62.
78.33	95.7	16.4	COAL	29.	5.	1.			35.

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START OF CORE RUN	RECOVERY PERCENT	R.Q.D.	LITHOLOGY	BEDDING FRACTURES	JOINT FRACTURES	UNCLASSIFIED FRACTURES	MINOR FAULT FRACTURES	FAULT ZONE FRACTURES	TOTAL FRACTURES
78.33	95.7	16.4	MDST	22.	1.				23.
81.38	93.4	19.3	CBSH	3.					3.
			COAL	22.	9.				31.
			MDST			30.			30.
84.43	82.3	12.1	COAL	3.					3.
			MDST	25.		5.			30.
			SLTS	17.	1.				18.
87.48	100.3	45.4	SLTS	42.	5.	3.			50.
90.52	103.0	15.1	SLTS	16.					16.
			SNDS	48.	1.				49.
93.57	102.0	18.4	SLTS	33.	7.	4.			44.
			SNDS	24.					24.
96.62	100.0	.0	SLTS	78.	6.				84.
99.67	87.6	4.0	COAL	6.	1.	500.			507.
			MDST	3.	1.				4.
			SLTS		6.				6.
			SNDS	19.	1.				20.
102.41	81.0	.0	COAL	8.	3.	1.			12.
			SLTS	21.	1.	1.			23.
103.78	78.3	5.6	COAL	1.			1.		2.
			MDST			66.		50.	116.
105.76	30.4	.0	COAL						
			SLTS						
106.68	40.9	16.2	COAL	24.	1.				25.
111.86	100.0	47.5	COAL	9.					9.
112.47	82.0	.0	COAL	16.					16.
			MDST			51.			51.
114.30	101.0	8.9	SLTS	56.	3.	1.			60.
117.35	103.0	14.1	SLTS	53.	5.	3.			61.
120.40	102.0	50.3	MDST	39.	1.				40.
123.44	95.1	11.1	MDST	28.	2.	30.			60.
126.49	102.3	44.6	MDST			51.			51.
129.54	92.2	.0	SLTS			73.			73.
132.89	103.3	11.5	SLTS			43.			43.
135.94	100.3	51.1	SLTS			43.			43.
138.99	89.0	23.3	SLTS			65.			65.

CONFIDENTIAL
COAL ANALYSES

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Appendix 6

~~CONFIDENTIAL~~

INCREMENTAL ANALYSIS BY HOLE

AIR DRIED BASIS

TW81R-101

SEAM	TOP	BOT	SAMPLE	ATYP	SG	YIELD	ASH	RESMOIST	VOL	CARB	KCAL	SULF	FSI
1	167.90	168.79	1	RAW	.00	.00	10.70	.69	.00	.00	.00	.00	.00
1	167.90	168.79	1	WASH	1.60	75.00	5.92	.64	30.73	62.71	7871.00	.57	5.00

Printed on the Xerox 9700 E.P.S

TW81R-104

SEAM	TOP	BOT	SAMPLE	ATYP	SG	YIELD	ASH	RESMOIST	VOL	CARB	KCAL	SULF	FSI
10	12.13	13.00	2	RAW	.00	.00	25.43	.72	.00	.00	.00	.00	.00
10	12.13	13.00	2	WASH	1.60	65.00	6.44	.65	35.64	57.27	7739.00	2.30	6.50
9	20.33	21.48	3	RAW	.00	.00	17.10	.75	.00	.00	.00	.00	.00
9	20.33	21.48	3	WASH	1.60	79.00	7.34	.60	35.67	56.39	7637.00	1.41	4.50
8	23.40	25.82	4	RAW	.00	.00	19.59	.66	.00	.00	.00	.00	.00
8	23.40	25.82	4	WASH	1.60	76.00	8.68	1.26	29.21	60.85	7327.00	.66	1.00

TWB1R-105

SEAM	TOP	BOT	SAMPLE	ATYP	SG	YIELD	ASH	RESMOIST	VOL	CARB	KCAL	SULF	FSI
9	34.44	35.15	6	RAW	.00	.00	13.76	.95	.00	.00	.00	.00	.00
9	34.44	35.15	6	WASH	1.60	85.00	7.61	.68	33.78	57.93	7535.00	1.77	2.00
8	36.24	38.09	7+8	RAW	.00	.00	16.11	1.00	.00	.00	.00	.00	.00
8	36.24	38.09	7+8	WASH	1.60	77.00	7.09	.72	31.93	60.26	7565.00	1.42	2.50
6	94.80	97.50	9+10	RAW	.00	.00	56.91	.82	.00	.00	.00	.00	.00
6	94.80	97.50	9+10	WASH	1.60	22.00	20.45	.91	25.85	52.79	6376.00	.53	2.50

TW81R-107

SEAM	TOP	BOT	SAMPLE	ATYP	SG	YIELD	ASH	RESMOIST	VOL	CARB	KCAL	SULF	FSI
6	20.62	28.23	11-17	RAW	.00	.00	12.18	1.22	.00	.00	.00	.00	.00
6	20.62	28.23	11-17	WASH	1.60	81.00	6.80	1.87	26.36	64.97	7307.00	.52	.00
1	131.16	133.17	18+19	RAW	.00	.00	16.48	.70	.00	.00	.00	.00	.00
1	131.16	133.17	18+19	WASH	1.60	68.00	7.03	1.52	26.03	65.42	7599.00	1.39	2.50
1	134.35	139.00	20-22	RAW	.00	.00	30.78	.66	.00	.00	.00	.00	.00
1	134.35	139.00	20-22	WASH	1.60	48.00	11.96	1.05	25.99	61.00	7586.00	.97	3.00
0	160.90	161.30	23+24	RAW	.00	.00	32.99	.90	.00	.00	.00	.00	.00
0	160.90	161.30	23+24	WASH	1.60	53.00	11.91	.70	29.21	58.18	7308.00	1.07	3.50

TW81R-112

SEAM	TOP	BOT	SAMPLE	ATYP	SG	YIELD	ASH	RESMOIST	VOL	CARB	KCAL	SULF	FSI
10	98.00	98.60	1+2	RAW	.00	.00	21.37	1.09	.00	.00	.00	.00	.00
10	98.00	98.60	1+2	WASH	1.60	77.00	12.14	.90	30.50	56.46	7037.00	1.78	1.50
9	104.60	105.40	3+4	RAW	.00	.00	16.62	.98	.00	.00	.00	.00	.00
9	104.60	105.40	3+4	WASH	1.60	80.00	9.05	.77	33.61	56.57	7418.00	2.44	1.50
8	107.10	109.00	5+6	RAW	.00	.00	14.68	1.07	.00	.00	.00	.00	.00
8	107.10	109.00	5+6	WASH	1.60	82.00	8.29	.98	30.28	60.45	7430.00	1.35	1.00
7	127.70	128.70	7+8	RAW	.00	.00	15.07	.99	.00	.00	.00	.00	.00
7	127.70	128.70	7+8	WASH	1.60	88.00	8.02	1.04	30.63	60.31	7498.00	1.36	3.00
6	134.30	136.90	9+10	RAW	.00	.00	11.10	1.04	.00	.00	.00	.00	.00
6	134.30	136.90	9+10	WASH	1.60	79.00	6.19	2.09	28.57	63.15	7544.00	.75	1.00
5	145.10	147.60	11+12	RAW	.00	.00	15.84	1.15	.00	.00	.00	.00	.00
5	145.10	147.60	11+12	WASH	1.60	88.00	6.09	1.57	29.24	63.10	7611.00	.56	1.50
4	151.75	153.20	13+14	RAW	.00	.00	8.35	1.12	.00	.00	.00	.00	.00
4	151.75	153.20	13+14	WASH	1.60	91.00	5.33	1.72	29.11	63.84	7663.00	.98	1.50
3	160.10	161.60	15+16	RAW	.00	.00	25.85	.90	.00	.00	.00	.00	.00
3	160.10	161.60	15+16	WASH	1.60	65.00	5.24	1.45	29.67	63.64	7908.00	.70	1.50
2	168.40	170.10	17+18	RAW	.00	.00	14.65	.98	.00	.00	.00	.00	.00
2	168.40	170.10	17+18	WASH	1.60	85.00	5.62	1.40	29.95	63.03	7673.00	.53	1.00
5	192.50	194.80	19+20	RAW	.00	.00	42.54	.80	.00	.00	.00	.00	.00
5	192.50	194.80	19+20	WASH	1.60	47.00	9.73	1.19	27.94	61.14	7416.00	1.16	1.00
4	202.20	203.40	21+22	RAW	.00	.00	14.25	.82	.00	.00	.00	.00	.00
4	202.20	203.40	21+22	WASH	1.60	83.00	10.31	1.21	27.58	60.90	7318.00	1.07	1.00
3	209.10	209.80	23+24	RAW	.00	.00	31.97	.73	.00	.00	.00	.00	.00
3	209.10	209.80	23+24	WASH	1.60	63.00	16.49	.86	28.63	54.02	6911.00	1.67	1.00
3	210.40	212.25	25+26	RAW	.00	.00	21.92	.74	.00	.00	.00	.00	.00
3	210.40	212.25	25+26	WASH	1.60	77.00	9.29	1.01	29.25	60.45	7513.00	.83	3.00
2	217.65	218.55	27+28	RAW	.00	.00	13.47	.92	.00	.00	.00	.00	.00
2	217.65	218.55	27+28	WASH	1.60	80.00	6.19	1.17	28.87	63.77	7786.00	.64	1.50

TW82D-201

SEAM	TOP	BOT	SAMPLE	ATYP	SG	YIELD	ASH	RESMOIST	VOL	CARB	KCAL	SULF	FSI
1	129.40	134.56	57	RAW	.00	.00	20.60	.72	24.46	54.22	6464.00	.00	-1.00
1	129.40	134.56	57	WASH	1.60	80.00	16.36	1.01	24.70	57.93	6918.00	.00	3.00
Q	141.70	142.60	58	RAW	.00	.00	38.27	.67	23.31	37.75	4706.00	.00	-1.00
Q	141.70	142.60	58	WASH	1.60	48.00	18.62	1.01	25.17	55.20	6586.00	.00	1.50

TW82D-202

SEAM	TOP	BOT	SAMPLE	ATYP	SG	YIELD	ASH	RESMOIST	VOL	CARB	KCAL	SULF	FSI
3	57.01	57.44	26	RAW	.00	.00	17.08	.75	26.44	55.73	6763.00	.00	-1.00
3	57.01	57.44	26	WASH	1.60	78.00	10.87	.99	28.32	59.82	7291.00	.00	1.00
3	58.46	59.50	27	RAW	.00	.00	21.38	.76	24.74	53.12	6301.00	.00	-1.00
3	58.46	59.50	27	WASH	1.60	77.00	9.93	1.24	26.18	62.65	7323.00	.00	1.00
2	66.69	70.27	28	RAW	.00	.00	27.91	.83	23.46	47.80	5751.00	.00	-1.00
2	66.69	70.27	28	WASH	1.60	67.00	9.22	1.16	27.05	62.57	7397.00	.00	1.50

TW82D-204

SEAM	TOP	BOT	SAMPLE	ATYP	SG	YIELD	ASH	RESMOIST	VOL	CARB	KCAL	SULF	FSI
Q	193.24	194.70	22	RAW	.00	.00	22.05	.73	27.79	49.43	6250.00	.00	-1.00
Q	193.24	194.70	22	WASH	1.60	71.00	7.66	1.10	31.86	59.38	7427.00	.00	5.50
Q	210.60	213.05	23	RAW	.00	.00	9.52	.78	28.12	61.58	7339.00	.00	-1.00
Q	210.60	213.05	23	WASH	1.60	89.00	5.27	1.18	28.89	64.66	7690.00	.00	2.00
Q	319.10	321.20	24	RAW	.00	.00	16.34	.91	28.93	53.82	6609.00	.00	-1.00
Q	319.10	321.20	24	WASH	1.60	78.00	8.97	-.98	29.21	60.84	7433.00	.00	3.00

TW82R-205

SEAM	TOP	BOT	SAMPLE	ATYP	SG	YIELD	ASH	RESMOIST	VOL	CARB	KCAL	SULF	FSI
1	136.32	141.25	50	RAW	.00	.00	53.67	.66	13.89	31.78	3420.00	.00	-1.00
1	136.32	141.25	50	WASH	1.60	15.00	19.26	.61	13.70	66.43	6816.00	.00	.50

TW82R-206

SEAM	TOP	BOT	SAMPLE	ATYP	SG	YIELD	ASH	RESMOIST	VOL	CARB	KCAL	SULF	FSI
1	189.88	193.90	49	RAW	.00	.00	43.90	.68	13.58	41.84	4433.00	.00	-1.00
1	189.88	193.90	49	WASH	1.60	35.00	23.57	.72	14.44	61.27	6422.00	.00	.50

TW82R-207

SEAM	TOP	BOT	SAMPLE	ATYP	SG	YIELD	ASH	RESMOIST	VOL	CARB	KCAL	SULF	FSI
1	138.08	141.79	30-37	RAW	.00	.00	65.04	.66	14.00	20.30	2006.00	.00	-1.00
1	138.08	141.79	30-37	WASH	1.60	9.00	11.30	.48	19.76	68.46	7642.00	.00	7.00

TW82D-208A

SEAM	TOP	BOT	SAMPLE	ATYP	SG	YIELD	ASH	RESMOIST	VOL	CARB	KCAL	SULF	FSI
6	6.34	9.58	356	RAW	.00	.00	44.72	.90	20.49	33.89	4116.00	.84	-1.00
6	6.34	9.58	356	WASH	.00	.00	7.46	1.14	29.05	62.35	7476.00	.65	2.50
6	10.68	11.28	355	RAW	.00	.00	19.41	.99	29.74	49.86	6393.00	2.97	-1.00
6	10.68	11.28	355	WASH	.00	.00	10.52	.96	30.56	57.96	7306.00	2.04	2.50
3	25.68	26.10	354	RAW	.00	.00	11.23	.87	30.15	57.75	7244.00	2.13	-1.00
3	25.68	26.10	354	WASH	.00	.00	8.68	.82	30.03	60.47	7505.00	1.74	5.00
3	26.50	27.08	353	RAW	.00	.00	15.06	.92	25.43	58.59	6883.00	2.67	-1.00
3	26.50	27.08	353	WASH	.00	.00	10.40	1.04	26.29	62.27	7281.00	1.69	1.00
2	31.56	31.90	351	RAW	.00	.00	28.34	1.40	23.57	46.69	4793.00	2.62	-1.00
2	31.56	31.90	351	WASH	.00	.00	13.40	1.13	30.46	55.01	7109.00	1.59	3.50
2	32.84	33.50	352	RAW	.00	.00	28.04	1.75	27.79	42.42	5462.00	.68	-1.00
2	32.84	33.50	352	WASH	.00	.00	10.63	1.90	29.03	58.44	7182.00	.81	1.50
1	132.01	137.12	05	RAW	.00	.00	17.93	.55	26.96	54.56	6644.00	.00	-1.00
1	132.01	137.12	05	WASH	1.60	75.00	9.75	.97	24.70	64.58	7443.00	.00	4.00
1	217.30	223.50	06	RAW	.00	.00	14.78	.79	26.02	58.41	6980.00	.00	-1.00
1	217.30	223.50	06	WASH	1.60	79.00	8.59	.87	26.85	63.69	7556.00	.00	4.50
1	224.44	224.82	14	RAW	.00	.00	25.90	.78	24.66	48.66	5813.00	.00	-1.00
1	224.44	224.82	14	WASH	1.60	65.00	12.34	.98	26.40	60.28	7186.00	.00	4.50
1	225.71	227.08	07	RAW	.00	.00	17.56	.87	26.00	55.57	6631.00	.00	-1.00
1	225.71	227.08	07	WASH	1.60	73.00	10.17	.90	27.23	61.70	7398.00	.00	5.50
1	233.41	234.41	13	RAW	.00	.00	35.18	.69	22.11	41.81	4981.00	.00	-1.00
1	233.41	234.41	13	WASH	1.60	78.00	18.57	.86	24.86	55.71	6613.00	.00	3.50

TW82R-209

SEAM	TOP	BOT	SAMPLE	ATYP	SG	YIELD	ASH	RESMOIST	VOL	CARB	KCAL	SULF	FSI
1	93.82	97.73	38-40	RAW	.00	.00	68.50	.53	15.28	15.69	.00	.00	-1.00
1	93.82	97.73	38-40	WASH	.00	.00	14.53	1.49	21.59	62.39	.00	.00	.00

TW82D-210

SEAM	TOP	BOT	SAMPLE	ATYP	SG	YIELD	ASH	RESMOIST	VOL	CARB	KCAL	SULF	FSI
2	40.12	44.35	01	RAW	.00	.00	17.57	.74	25.21	56.48	6583.00	.00	-1.00
2	40.12	44.35	01	WASH	1.60	76.00	9.30	1.11	27.01	62.58	7342.00	.00	1.50
Q	158.30	158.70	03	RAW	.00	.00	36.36	.65	23.48	39.51	4718.00	.00	-1.00
Q	158.30	158.70	03	WASH	1.60	45.00	19.35	.96	24.97	54.72	6472.00	.00	3.00
Q	163.83	164.43	04	RAW	.00	.00	46.94	.62	20.90	31.54	3820.00	.00	-1.00
Q	163.83	164.43	04	WASH	1.60	34.00	17.64	1.06	26.51	54.79	6628.00	.00	5.00

TW82R-211

SEAM	TOP	BOT	SAMPLE	ATYP	SG	YIELD	ASH	RESMOIST	VOL	CARB	KCAL	SULF	FSI
1	18.08	21.95	42-45	RAW	.00	.00	41.13	.55	18.36	39.96	4640.00	.00	-1.00
1	18.08	21.95	45	WASH	1.60	33.00	12.09	.71	22.61	64.59	7471.00	.00	6.00
1	31.00	32.00	46	RAW	.00	.00	42.85	.56	18.73	37.86	4316.00	.00	-1.00
1	31.00	32.00	46	WASH	1.60	27.00	14.60	1.01	21.87	62.52	7135.00	.00	5.00
1	43.00	45.00	47	RAW	.00	.00	52.96	.85	17.49	28.70	3312.00	.00	-1.00
1	43.00	45.00	47	WASH	1.60	15.00	14.25	.99	23.25	61.51	7169.00	.00	7.50
1	48.76	50.00	48	RAW	.00	.00	61.91	.82	14.90	22.37	2354.00	.00	-1.00
1	48.76	50.00	48	WASH	1.60	11.00	16.82	1.01	22.42	59.75	6935.00	.00	7.50

TW82R-212

SEAM	TOP	BOT	SAMPLE	ATYP	SG	YIELD	ASH	RESMOIST	VOL	CARB	KCAL	SULF	FSI
4	22.82	24.91	41	RAW	.00	.00	45.90	.83	17.83	35.44	4151.00	.00	-1.00
4	22.82	24.91	41	WASH	1.60	46.00	15.25	.92	23.41	60.42	7049.00	.00	1.00
2	36.58	38.54	61	RAW	.00	.00	32.89	.84	22.41	43.86	5218.00	.00	-1.00

TW82D-213

SEAM	TOP	BOT	SAMPLE	ATYP	SG	YIELD	ASH	RESMOIST	VOL	CARB	KCAL	SULF	FSI
2	16.54	19.97	29	RAW	.00	.00	16.32	.93	26.14	56.61	6776.00	.00	-1.00
2	16.54	19.97	29	WASH	1.60	78.00	8.52	1.03	27.40	63.05	7522.00	.00	2.50

TW82D-214

SEAM	TOP	BOT	SAMPLE	ATYP	SG	YIELD	ASH	RESMOIST	VOL	CARB	KCAL	SULF	FSI
9	178.57	179.40	51	RAW	.00	.00	12.02	.80	30.52	56.66	7354.00	.00	-1.00
9	178.57	179.40	51	WASH	1.60	87.00	7.48	.99	31.35	60.18	7770.00	.00	4.00
8	188.28	190.76	52	RAW	.00	.00	35.09	.67	21.20	43.04	5122.00	.00	-1.00
8	188.28	190.76	52	WASH	1.60	57.00	9.79	.66	26.58	62.97	7493.00	.00	3.00
6	224.50	228.40	53	RAW	.00	.00	18.94	.51	26.26	54.29	6695.00	.00	-1.00
6	224.50	228.40	53	WASH	1.60	74.00	6.22	.67	30.06	63.05	7900.00	.00	5.50
4	236.52	241.25	54	RAW	.00	.00	17.95	.63	27.05	54.37	6614.00	.00	-1.00
4	236.52	241.25	54	WASH	1.60	68.00	9.83	.56	27.72	61.89	7507.00	.00	4.50
3	244.88	245.68	55	RAW	.00	.00	17.08	.59	27.02	55.31	6686.00	.00	-1.00
3	244.88	245.68	55	WASH	1.60	80.00	9.09	.55	29.01	61.35	7479.00	.00	4.50
2	246.74	249.18	56	RAW	.00	.00	33.87	.72	22.80	42.61	5061.00	.00	-1.00
2	246.74	249.18	56	WASH	1.60	56.00	10.75	1.06	24.85	63.34	7352.00	.00	1.50

TW82D-215

SEAM	TOP	BOT	SAMPLE	ATYP	SG	YIELD	ASH	RESMOIST	VOL	CARB	KCAL	SULF	FSI
1	79.84	80.82	25	RAW	.00	.00	13.23	.66	23.97	62.14	7283.00	.00	-1.00
1	79.84	80.82	25	WASH	1.60	84.00	10.03	.94	23.86	65.17	7625.00	.00	3.50

TW82D-216

SEAM	TOP	BOT	SAMPLE	ATYP	SG	YIELD	ASH	RESMOIST	VOL	CARB	KCAL	SULF	FSI
7	19.91	21.05	08	RAW	.00	.00	10.61	1.04	27.92	60.43	7359.00	.00	-1.00
7	19.91	21.05	08	WASH	1.60	90.00	6.50	1.05	29.03	63.42	7715.00	.00	2.00
6	21.64	25.55	09	RAW	.00	.00	18.36	1.05	27.10	53.49	6508.00	.00	-1.00
6	21.64	25.55	09	WASH	1.60	72.00	6.86	1.21	28.30	63.63	7653.00	.00	2.50
5	27.66	29.50	10	RAW	.00	.00	12.12	.98	28.67	58.23	7160.00	.00	-1.00
5	27.66	29.50	10	WASH	1.60	86.00	6.66	1.05	29.01	63.28	7681.00	.00	3.50
4	36.12	37.18	11	RAW	.00	.00	10.09	.91	26.88	62.12	7358.00	.00	-1.00
4	36.12	37.18	11	WASH	1.60	91.00	8.25	1.11	26.49	64.15	7526.00	.00	1.50
2	48.17	52.13	12	RAW	.00	.00	24.94	.86	24.43	49.77	6083.00	.00	-1.00
2	48.17	52.13	12	WASH	1.60	66.00	10.01	1.38	27.38	61.23	7419.00	.00	3.00

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SEAM	TOP	BOT	SAMPLE	ATYP	SG	YIELD	ASH	RESMOIST	VOL	CARB	KCAL	SULF	FSI
6	35.15	35.72	15	RAW	.00	.00	20.60	.87	23.89	54.64	6407.00	.00	-1.00
6	35.15	35.72	15	WASH	1.60	71.00	13.95	1.01	25.71	59.33	7018.00	.00	1.00
6	46.95	48.37	16	RAW	.00	.00	9.03	.91	25.77	64.29	7430.00	.00	-1.00
6	46.95	48.37	16	WASH	1.60	90.00	5.91	.96	27.69	65.44	7702.00	.00	2.00
6	49.56	50.08	17	RAW	.00	.00	21.00	.73	26.84	51.43	6378.00	.00	-1.00
6	49.56	50.08	17	WASH	1.60	68.00	12.29	.69	30.38	56.64	7249.00	.00	6.50
4	52.82	54.56	18	RAW	.00	.00	10.15	.74	27.98	61.13	7349.00	.00	-1.00
4	52.82	54.56	18	WASH	1.60	91.00	8.41	.77	28.53	62.29	7527.00	.00	2.50
3	59.93	61.32	19	RAW	.00	.00	10.58	.75	26.88	61.79	7373.00	.00	-1.00
3	59.93	61.32	19	WASH	1.60	89.00	8.36	.96	27.31	63.37	7567.00	.00	2.00
4	62.08	62.66	20	RAW	.00	.00	19.05	.65	26.00	54.30	6603.00	.00	-1.00
4	62.08	62.66	20	WASH	1.60	73.00	10.72	.63	27.29	61.36	7387.00	.00	3.50
2	72.48	76.01	21	RAW	.00	.00	16.97	.65	25.57	56.81	6737.00	.00	-1.00
2	72.48	76.01	21	WASH	1.60	76.00	9.53	1.03	26.41	63.03	7424.00	.00	2.50

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SEAM	TOP	BOT	SAMPLE	ATYP	SG	YIELD	ASH	RESMOIST	VOL	CARB	KCAL	SULF	FSI
5	118.86	119.12	20	RAW	.00	.00	41.60	.79	21.60	36.01	4527.00	1.35	-1.00
5	118.86	119.12	20	WASH	1.60	46.00	18.62	1.19	26.08	54.11	6629.00	1.29	1.00
5	120.16	120.76	21	RAW	.00	.00	56.12	.74	16.96	26.18	3165.00	.28	-1.00
5	120.16	120.76	21	WASH	1.60	30.00	15.44	1.33	26.70	56.53	6883.00	.52	1.00
4	123.43	124.46	22	RAW	.00	.00	27.33	.73	26.40	45.54	5682.00	.62	-1.00
4	123.43	124.46	22	WASH	1.60	61.00	13.70	1.90	27.78	56.62	6966.00	.62	1.00
3	139.39	139.85	23	RAW	.00	.00	24.37	.60	27.04	47.99	6099.00	3.07	-1.00
3	139.39	139.85	23	WASH	1.60	59.00	11.69	.88	29.08	58.35	7288.00	1.88	1.00
3	141.39	142.42	24	RAW	.00	.00	15.79	.61	27.12	56.48	6803.00	.86	-1.00
3	141.39	142.42	24	WASH	1.60	79.00	9.21	1.19	27.28	62.32	7443.00	.70	1.00
Q	144.55	144.92	25	RAW	.00	.00	33.46	.55	27.16	38.83	4884.00	1.85	-1.00
Q	144.55	144.92	25	WASH	1.60	34.00	17.00	1.17	26.30	55.53	6768.00	1.38	1.00
O	148.78	149.11	26	RAW	.00	.00	36.85	.54	24.24	38.37	4971.00	1.27	-1.00
Q	148.78	149.11	26	WASH	1.60	55.00	18.89	.88	28.60	53.39	6662.00	1.42	1.00
2	151.15	152.10	27	RAW	.00	.00	14.71	.45	29.30	55.54	6860.00	.66	-1.00
2	151.15	152.10	27	WASH	1.60	82.00	8.34	.85	29.45	61.36	7524.00	.60	2.50
2	152.57	153.68	28	RAW	.00	.00	24.47	.65	24.67	50.21	6051.00	.50	-1.00
2	152.57	153.68	28	WASH	1.60	72.00	12.99	1.05	27.10	58.86	7074.00	.53	1.50
2	154.82	155.34	29	RAW	.00	.00	17.88	.50	28.72	52.90	6621.00	2.89	-1.00
2	154.82	155.34	29	WASH	1.60	78.00	10.71	.98	29.44	58.87	7330.00	1.26	2.50
1	275.50	277.19	30	RAW	.00	.00	13.61	.59	28.48	57.32	7128.00	1.50	-1.00
1	275.50	277.19	30	WASH	1.60	83.00	9.67	.92	29.26	60.15	7530.00	.77	5.00
1	280.27	282.07	31@32	RAW	.00	.00	12.04	.43	27.87	59.66	7303.00	1.00	-1.00
1	280.27	282.07	31@32	WASH	1.60	87.00	8.83	:80	28.34	62.03	7562.00	4.79	4.50
1	282.54	282.78	33	RAW	.00	.00	24.82	.45	27.40	47.33	5880.00	.90	-1.00
1	282.54	282.78	33	WASH	1.60	60.00	9.96	.62	28.75	60.67	7409.00	.60	3.50
1	283.49	284.34	34	RAW	.00	.00	16.63	.50	28.49	54.38	6805.00	.61	-1.00
1	283.49	284.34	34	WASH	1.60	63.00	8.46	.61	29.83	61.10	7604.00	.93	6.00

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SEAM	TOP	BOT	SAMPLE	ATYP	SG	YIELD	ASH	RESMOIST	VOL	CARB	KCAL	SULF	FSI
10	33.00	33.86	01	RAW	.00	.00	19.80	1.52	28.47	50.21	6422.00	2.05	-1.00
10	33.00	33.86	01	WASH	1.60	74.00	7.62	.99	32.77	58.62	7594.00	3.19	4.00
9	42.35	43.22	02	RAW	.00	.00	10.12	1.35	32.87	55.66	7386.00	2.42	-1.00
9	42.35	43.22	02	WASH	1.60	90.00	7.46	.99	35.05	56.50	7645.00	2.31	7.00
8	44.45	46.69	03	RAW	.00	.00	14.40	1.08	28.22	56.30	6924.00	1.27	-1.00
8	44.45	46.69	03	WASH	1.60	80.00	6.97	1.29	29.67	62.07	7628.00	.96	2.00
7	67.05	68.34	04	RAW	.00	.00	18.15	1.22	28.10	52.53	6631.00	1.63	-1.00
7	67.05	68.34	04	WASH	1.60	78.00	9.11	1.05	31.45	58.39	7473.00	1.73	3.50
6	71.86	74.19	05	RAW	.00	.00	40.54	1.47	20.18	37.81	4566.00	.83	-1.00
6	71.86	74.19	05	WASH	1.60	52.00	8.63	1.14	28.86	61.37	7475.00	4.48	2.00
6	75.00	75.54	06	RAW	.00	.00	11.26	1.10	30.15	57.49	7277.00	2.00	-1.00
6	75.00	75.54	06	WASH	1.60	83.00	6.72	1.02	32.00	60.26	7714.00	.48	2.50
2	82.14	83.95	07	RAW	.00	.00	11.67	1.30	27.84	59.19	7072.00	.48	-1.00
2	82.14	83.95	07	WASH	1.60	86.00	7.51	1.16	28.71	62.62	7568.00	1.80	2.00
2	85.29	86.30	08	RAW	.00	.00	22.02	1.26	24.04	52.68	6165.00	1.07	-1.00
2	85.29	86.30	08	WASH	1.60	68.00	11.06	1.29	26.65	61.00	7184.00	.61	1.00
1	231.20	235.44	09	RAW	.00	.00	19.15	.78	26.89	53.18	6576.00	1.43	-1.00
1	231.20	235.44	09	WASH	1.60	71.00	7.72	.77	29.74	61.77	7708.00	.91	6.00
1	236.12	237.22	10	RAW	.00	.00	16.43	1.10	27.15	55.32	6770.00	.37	-1.00
1	236.12	237.22	10	WASH	1.60	78.00	7.97	.78	29.52	61.73	7655.00	.41	7.50
1	242.80	243.85	11	RAW	.00	.00	39.71	1.13	20.43	38.73	4544.00	.20	-1.00
1	242.80	243.85	11	WASH	1.60	35.00	19.47	.85	23.93	55.75	6532.00	.28	2.00

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SEAM	TOP	BOT	SAMPLE	ATYP	SG	YIELD	ASH	RESMOIST	VOL	CARB	KCAL	SULF	FSI
1	196.44	200.92	63	RAW	.00	.00	14.82	1.21	26.62	57.35	6969.00	3.36	-1.00
1	196.44	200.92	63	WASH	1.60	84.00	7.16	.69	27.91	64.24	7712.00	1.75	4.50
1	202.70	203.10	64	RAW	.00	.00	26.48	.95	26.67	45.90	5841.00	5.24	-1.00
1	202.70	203.10	64	WASH	1.60	66.00	16.59	.70	28.38	54.33	6867.00	1.03	6.50
Q	210.25	212.16	65	RAW	.00	.00	24.91	1.16	25.18	48.75	5894.00	.35	-1.00
Q	210.25	212.16	65	WASH	1.60	65.00	11.12	.93	27.08	60.87	7302.00	.40	4.00
1	218.60	219.10	66	RAW	.00	.00	30.12	.99	23.75	45.14	5385.00	.53	-1.00
1	218.60	219.10	66	WASH	1.60	58.00	13.86	.89	25.55	59.70	7050.00	.56	3.00

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SEAM	TOP	BOT	SAMPLE	ATYP	SG	YIELD	ASH	RESMOIST	VOL	CARB	KCAL	SULF	FSI
7	16.60	17.66	12	RAW	.00	.00	16.45	1.38	27.57	54.60	6675.00	1.83	-1.00
7	16.60	17.66	12	WASH	1.60	76.00	9.38	1.38	29.65	59.59	7351.00	1.42	2.50
7	23.78	24.43	13	RAW	.00	.00	15.94	1.25	25.95	56.86	6730.00	4.38	-1.00
7	23.78	24.43	13	WASH	1.60	77.00	9.49	1.19	28.04	61.28	7346.00	2.38	1.00
7	25.70	27.24	14	RAW	.00	.00	6.67	1.17	28.94	63.22	7598.00	1.07	-1.00
7	25.70	27.24	14	WASH	1.60	90.00	5.52	1.35	29.80	63.33	7676.00	.96	1.50
6	34.17	37.14	15	RAW	.00	.00	15.57	1.54	25.96	56.93	6738.00	.57	-1.00
6	34.17	37.14	15	WASH	1.60	84.00	7.51	1.71	28.87	61.91	7438.00	.52	2.00
6	37.84	39.64	16	RAW	.00	.00	6.94	1.06	29.37	62.63	7573.00	.81	-1.00 ← missing from database
6	37.84	39.64	16	WASH	1.60	92.00	4.63	1.27	29.64	64.46	7769.00	.83	2.00
3	56.70	57.12	17	RAW	.00	.00	16.60	1.12	27.19	55.09	6752.00	2.92	-1.00
3	56.70	57.12	17	WASH	1.60	81.00	10.99	1.51	27.91	59.59	7245.00	2.07	1.50
3	58.09	59.25	18	RAW	.00	.00	15.11	1.28	26.95	56.66	6801.00	1.62	-1.00
3	58.09	59.25	18	WASH	1.60	82.00	9.38	1.46	26.77	62.39	7348.00	1.03	1.50
2	67.14	69.99	19	RAW	.00	.00	23.60	.90	24.88	50.62	6065.00	.51	-1.00
2	67.14	69.99	19	WASH	1.60	73.00	9.59	1.25	27.09	62.07	7407.00	.45	1.00

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SEAM	TOP	BOT	SAMPLE	ATYP	SG	YIELD	ASH	RESMOIST	VOL	CARB	KCAL	SULF	FSI
6	18.94	22.27	47	RAW	.00	.00	40.03	1.19	23.19	35.59	4544.00	1.86	-1.00
6	18.94	22.27	47	WASH	1.60	52.00	8.50	1.51	29.98	60.01	7447.00	1.52	1.50
3	44.96	45.36	48	RAW	.00	.00	31.94	.91	33.19	33.96	4684.00	2.30	-1.00
3	44.96	45.36	48	WASH	1.60	46.00	11.66	1.48	28.86	58.00	7214.00	1.58	2.50
3	46.00	47.92	49	RAW	.00	.00	25.99	1.20	23.51	49.30	5866.00	1.56	-1.00
3	46.00	47.92	49	WASH	1.60	68.00	10.99	1.79	25.64	61.58	7203.00	1.05	1.00
3	48.33	49.22	50	RAW	.00	.00	39.84	.99	25.82	33.35	4306.00	2.35	-1.00
3	48.33	49.22	50	WASH	1.60	43.00	10.37	1.44	27.02	61.17	7283.00	1.12	1.00
2	53.76	54.22	51	RAW	.00	.00	39.19	.92	22.70	37.19	4765.00	3.41	-1.00
2	53.76	54.22	51	WASH	1.60	.00	18.42	1.37	26.89	53.32	6667.00	1.91	1.00
2	55.95	56.60	52	RAW	.00	.00	31.56	.93	28.41	39.10	4906.00	.58	-1.00
2	55.95	56.60	52	WASH	1.60	48.00	12.02	1.62	27.79	58.57	7121.00	.52	1.00
2	57.08	57.40	53	RAW	.00	.00	17.41	.99	26.65	54.95	6598.00	.82	-1.00
2	57.08	57.40	53	WASH	1.60	81.00	10.39	1.39	27.13	61.09	7295.00	.71	1.00
1	154.92	157.16	54	RAW	.00	.00	11.21	.84	28.31	59.64	7293.00	1.58	-1.00
1	154.92	157.16	54	WASH	1.60	88.00	7.17	.98	29.04	62.81	7680.00	.86	5.00
1	157.34	160.46	55	RAW	.00	.00	21.11	.93	26.46	51.50	6348.00	.76	-1.00
1	157.34	160.46	55	WASH	1.60	72.00	10.60	.71	28.87	59.82	7367.00	.52	5.00
1	163.05	163.94	56	RAW	.00	.00	19.57	1.41	27.87	51.15	6364.00	.42	-1.00
1	163.05	163.94	56	WASH	1.60	72.00	9.32	1.19	29.55	59.94	7475.00	.36	6.50

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SEAM	TOP	BOT	SAMPLE	ATYP	SG	YIELD	ASH	RESMOIST	VOL	CARB	KCAL	SULF	FSI
1	206.98	210.80	57	RAW	.00	.00	13.11	1.01	25.98	59.90	7160.00	2.15	-1.00
1	206.98	210.80	57	WASH	1.60	85.00	7.73	.66	27.16	64.45	7654.00	1.27	4.50
1	212.28	213.25	58	RAW	.00	.00	24.25	.89	27.93	46.93	5880.00	.67	-1.00
1	212.28	213.25	58	WASH	1.60	72.00	14.89	.58	27.74	56.79	7010.00	.58	7.50
1	217.65	219.98	59-61	RAW	.00	.00	34.50	.59	24.16	40.75	4911.00	.27	-1.00
1	217.65	219.98	59-61	WASH	1.60	53.00	14.19	.79	26.25	58.77	7018.00	.36	4.50
1	223.80	224.45	62	RAW	.00	.00	28.56	.95	25.48	45.01	5354.00	.32	-1.00
1	223.80	224.45	62	WASH	1.60	55.00	12.29	.87	25.13	61.71	7181.00	.41	2.00

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SEAM	TOP	BOT	SAMPLE	ATYP	SG	YIELD	ASH	RESMOIST	VOL	CARB	KCAL	SULF	FSI
4	13.62	14.10	35	RAW	.00	.00	18.72	1.11	28.94	51.23	6615.00	2.30	-1.00
4	13.62	14.10	35	WASH	1.60	74.00	9.64	.98	31.43	57.95	7479.00	1.44	4.50
4	14.55	15.81	36	RAW	.00	.00	17.77	1.22	24.47	56.54	6627.00	2.81	-1.00
4	14.55	15.81	36	WASH	1.60	80.00	10.23	1.48	25.84	62.45	7302.00	.84	1.00
4	16.59	16.88	37	RAW	.00	.00	27.90	1.12	25.80	45.18	5592.00	3.08	-1.00
4	16.59	16.88	37	WASH	1.60	59.00	9.93	1.11	26.87	62.09	7374.00	1.23	1.00
3	22.28	22.78	38	RAW	.00	.00	36.30	.98	24.49	38.23	5050.00	10.28	-1.00
3	22.28	22.78	38	WASH	1.60	51.00	19.91	1.03	28.13	50.93	6577.00	1.90	1.00
3	24.37	25.22	39	RAW	.00	.00	14.72	1.38	30.40	53.50	6897.00	1.44	-1.00
3	24.37	25.22	39	WASH	1.60	82.00	7.71	1.84	30.89	59.56	7541.00	.98	3.50
3	26.64	28.84	40	RAW	.00	.00	41.39	1.34	23.20	34.07	4460.00	4.99	-1.00
3	26.64	28.84	40	WASH	1.60	43.00	13.08	1.19	30.02	55.71	7145.00	1.64	2.50
2	29.64	33.07	41	RAW	.00	.00	28.34	.74	24.93	45.99	5650.00	1.76	-1.00
2	29.64	33.07	41	WASH	1.60	63.00	9.48	1.06	28.56	60.90	7421.00	.63	1.00
2	33.68	34.27	42	RAW	.00	.00	19.50	1.15	26.68	52.67	6323.00	1.19	-1.00
2	33.68	34.27	42	WASH	1.60	73.00	9.16	1.66	26.24	62.94	7406.00	.83	1.00
1	190.65	192.77	43	RAW	.00	.00	9.48	1.06	28.31	61.15	7464.00	.56	-1.00
1	190.65	192.77	43	WASH	1.60	89.00	6.54	1.31	28.25	63.90	7762.00	.53	4.00
1	193.01	194.34	44	RAW	.00	.00	20.85	.78	27.66	50.71	6415.00	2.49	-1.00
1	193.01	194.34	44	WASH	1.60	67.00	10.78	1.20	28.87	59.15	7432.00	1.33	3.50
1	271.76	273.86	45	RAW	.00	.00	12.26	.80	27.89	59.05	7219.00	1.88	-1.00
1	271.76	273.86	45	WASH	1.60	85.00	6.53	1.13	27.59	64.75	7822.00	.88	4.00
1	274.14	274.46	46	RAW	.00	.00	17.16	.72	30.02	52.10	6398.00	.73	-1.00
1	274.14	274.46	46	WASH	1.60	76.00	6.51	1.37	27.65	64.47	7746.00	.74	4.00

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SEAM	TOP	BOT	SAMPLE	ATYP	SG	YIELD	ASH	RESMOIST	VOL	CARB	KCAL	SULF	FSI
1	145.12	147.76	67-69	RAW	.00	.00	14.29	.57	26.28	58.86	6999.00	2.71	-1.00
1	145.12	147.76	67-69	WASH	1.60	83.00	8.21	.59	26.61	64.59	7569.00	1.37	3.50
1	149.53	154.36	70	RAW	.00	.00	34.93	1.01	23.15	40.91	4974.00	.81	-1.00
1	149.53	154.36	70	WASH	1.60	49.00	14.26	.87	27.45	57.42	6945.00	.83	5.50
1	157.62	158.12	71	RAW	.00	.00	37.97	1.01	22.98	38.04	4468.00	.36	-1.00
1	157.62	158.12	71	WASH	1.60	40.00	14.32	.64	26.13	58.91	6948.00	.51	4.50

TW82D-227

SEAM	TOP	BOT	SAMPLE	ATYP	SG	YIELD	ASH	RESMOIST	VOL	CARB	KCAL	SULF	FSI
6	10.86	11.27	76	RAW	.00	.00	15.67	1.40	29.35	53.58	6877.00	3.21	-1.00
6	10.86	11.27	76	WASH	1.60	84.00	11.43	1.20	31.47	55.90	7279.00	3.11	3.00
5	22.62	25.51	78	RAW	.00	.00	14.36	.75	28.30	56.32	6936.00	.45	-1.00
5	22.62	25.51	78	WASH	1.60	81.00	6.27	1.21	30.48	62.04	7655.00	.51	2.00
5	26.06	27.13	79	RAW	.00	.00	20.45	1.45	25.76	52.34	6400.00	2.18	-1.00
5	26.06	27.13	79	WASH	1.60	79.00	9.34	1.37	29.82	59.47	7393.00	1.15	1.00
4	29.23	29.74	80	RAW	.00	.00	9.43	1.21	31.44	57.92	7323.00	1.39	-1.00
4	29.23	29.74	80	WASH	1.60	84.00	2.88	1.44	32.05	63.63	7974.00	.61	2.00
2	61.16	61.51	81	RAW	.00	.00	26.01	1.05	31.66	41.28	5646.00	2.75	-1.00
2	61.16	61.51	81	WASH	1.60	65.00	15.23	1.08	29.50	54.19	6996.00	.70	2.50
1	218.24	220.12	82	RAW	.00	.00	11.55	1.00	28.49	58.96	7313.00	1.41	-1.00
1	218.24	220.12	82	WASH	1.60	88.00	8.58	1.30	28.84	61.28	7560.00	1.06	6.00
1	221.70	227.83	83	RAW	.00	.00	20.61	.95	26.10	52.34	6446.00	2.24	-1.00
1	221.70	227.83	83	WASH	1.60	72.00	9.44	1.11	29.31	60.14	7493.00	1.24	5.00
1	228.28	228.62	84	RAW	.00	.00	36.07	.95	22.50	40.48	4970.00	.47	-1.00
1	228.28	228.62	84	WASH	1.60	46.00	11.01	1.28	27.51	60.20	7353.00	.69	6.00
1	229.44	230.67	85	RAW	.00	.00	18.29	1.08	26.18	54.45	6521.00	.40	-1.00
1	229.44	230.67	85	WASH	1.60	72.00	8.51	1.32	24.82	65.35	7547.00	.42	5.50
1	236.56	237.10	86	RAW	.00	.00	45.03	1.17	19.73	34.07	4106.00	.26	-1.00
1	236.56	237.10	86	WASH	1.60	28.00	17.57	1.43	26.97	54.03	6711.00	.40	4.00

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SEAM	TOP	BOT	SAMPLE	ATYP	SG	YIELD	ASH	RESMOIST	VOL	CARB	KCAL	SULF	FSI
1	143.60	149.15	72-74	RAW	.00	.00	21.16	.47	25.53	52.84	6361.00	1.96	-1.00
1	143.60	149.15	72-74	WASH	1.60	74.00	9.13	.60	27.64	62.63	7469.00	1.54	4.50
1	150.24	151.66	75	RAW	.00	.00	24.92	.96	24.60	49.52	5911.00	.44	-1.00
1	150.24	151.66	75	WASH	1.60	66.00	16.01	.91	26.40	56.68	6790.00	.50	3.50

TW82D-229

SEAM	TOP	BOT	SAMPLE	ATYP	SG	YIELD	ASH	RESMOIST	VOL	CARB	KCAL	SULF	FSI
8	78.60	79.20	250	RAW	.00	.00	14.22	.76	30.98	54.04	7051.00	3.61	-1.00
8	78.60	79.20	250	WASH	1.60	85.00	9.19	1.09	31.85	57.87	7494.00	2.26	3.50
7	85.99	87.13	251	RAW	.00	.00	14.38	1.07	29.37	55.18	7014.00	2.87	-1.00
7	85.99	87.13	251	WASH	1.60	83.00	7.24	1.12	31.87	59.77	7644.00	1.77	3.00
6	92.67	94.88	252	RAW	.00	.00	13.17	1.05	27.29	58.49	7101.00	4.12	-1.00
6	92.67	94.88	252	WASH	1.60	84.00	7.67	1.21	28.90	62.22	7587.00	1.58	1.00
6	97.56	97.94	253	RAW	.00	.00	6.67	1.05	30.74	61.54	7722.00	1.70	-1.00
6	97.56	97.94	253	WASH	1.60	92.00	4.03	1.22	32.23	62.52	7926.00	1.35	2.00
6	98.18	99.43	254	RAW	.00	.00	17.17	.92	27.90	54.01	6685.00	3.10	-1.00
6	98.18	99.43	254	WASH	1.60	79.00	7.22	1.52	29.23	62.03	7540.00	.91	1.00
5	105.06	107.90	255	RAW	.00	.00	18.34	1.06	25.49	55.11	6554.00	.49	-1.00
5	105.06	107.90	255	WASH	1.60	77.00	7.71	1.40	28.79	62.10	7509.00	.59	1.00
5	109.26	109.55	256	RAW	.00	.00	19.92	.91	27.44	51.73	6415.00	1.96	-1.00
5	109.26	109.55	256	WASH	1.60	79.00	8.88	1.23	30.26	59.63	7439.00	1.27	1.50
5	109.76	110.08	257	RAW	.00	.00	11.72	1.00	27.61	59.67	7232.00	1.14	-1.00
5	109.76	110.08	257	WASH	1.60	93.00	9.99	1.05	29.38	59.58	7391.00	.95	2.50
5	122.39	123.74	258	RAW	.00	.00	13.31	1.02	26.98	58.69	7059.00	1.20	-1.00
5	122.39	123.74	258	WASH	1.60	86.00	9.70	1.29	27.24	61.77	7388.00	.00	1.00
5	123.93	126.48	260	RAW	.00	.00	29.25	.79	23.64	46.32	5576.00	1.42	-1.00
5	123.93	126.48	260	WASH	1.60	64.00	11.03	1.35	26.46	61.16	7253.00	.78	1.00
4	131.36	132.55	261	RAW	.00	.00	18.57	.90	28.13	52.40	6637.00	1.42	-1.00
4	131.36	132.55	261	WASH	1.60	84.00	11.62	1.26	29.91	57.21	7263.00	1.26	3.00
3	142.47	144.79	262	RAW	.00	.00	31.55	.85	23.46	44.14	5415.00	3.87	-1.00
3	142.47	144.79	262	WASH	1.60	50.00	15.78	1.24	26.99	55.99	6854.00	2.04	1.00
2	145.76	146.78	263	RAW	.00	.00	25.12	.81	25.35	48.72	6032.00	1.37	-1.00
2	145.76	146.78	263	WASH	1.60	62.00	7.37	1.25	28.70	62.68	7612.00	1.27	2.00
5	162.29	163.32	264	RAW	.00	.00	16.02	.88	25.54	57.56	6794.00	1.39	-1.00
5	162.29	163.32	264	WASH	1.60	79.00	10.19	1.18	26.21	62.42	7345.00	1.14	1.00
5	163.64	163.95	265	RAW	.00	.00	20.66	.87	23.58	54.89	6380.00	1.56	-1.00
5	163.64	163.95	265	WASH	1.60	77.00	11.20	1.29	25.14	62.37	7214.00	1.37	1.50
4	170.77	171.30	266	RAW	.00	.00	29.68	.72	24.88	44.72	5450.00	.48	-1.00
4	170.77	171.30	266	WASH	1.60	64.00	14.21	.92	27.47	57.40	6954.00	.52	1.50
4	173.27	174.89	267	RAW	.00	.00	12.27	.86	27.14	59.73	7123.00	.49	-1.00
4	173.27	174.89	267	WASH	1.60	81.00	3.97	1.36	29.68	64.99	7120.00	.53	1.50
3	182.59	183.14	268	RAW	.00	.00	23.08	.97	25.20	50.75	6151.00	.81	-1.00
3	182.59	183.14	268	WASH	1.60	71.00	13.10	1.13	26.84	58.93	7091.00	.62	1.00
3	183.70	184.36	270	RAW	.00	.00	62.74	.82	15.76	20.68	2286.00	.58	-1.00
3	183.70	184.36	270	WASH	1.60	20.00	15.42	1.00	25.87	57.71	6904.00	.67	1.00
3	184.51	184.88	271	RAW	.00	.00	87.84	.79	8.49	2.88	.00	.15	-1.00
3	184.51	184.88	271	WASH	1.60	.00	.00	.00	.00	.00	.00	.00	.00
3	184.88	186.30	272	RAW	.00	.00	53.34	.61	18.26	27.79	3457.00	.62	-1.00
3	184.88	186.30	272	WASH	1.60	33.00	16.91	1.18	25.86	56.05	6797.00	.73	1.00
2	188.50	189.56	273	RAW	.00	.00	14.31	.61	28.74	56.34	6920.00	.59	-1.00
2	188.50	189.56	273	WASH	1.60	80.00	8.41	1.04	28.92	61.63	7525.00	.53	2.50
2	190.14	190.90	274	RAW	.00	.00	36.62	.64	21.36	41.38	4934.00	.32	-1.00
2	190.14	190.90	274	WASH	1.60	49.00	15.41	1.15	25.08	58.36	6907.00	.43	1.00

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SEAM	TOP	BOT	SAMPLE	ATYP	SG	YIELD	ASH	RESMOIST	VOL	CARB	KCAL	SULF	FSI
10	97.79	98.97	292	RAW	.00	.00	28.34	1.30	24.54	45.82	5529.00	3.96	-1.00
10	97.79	98.97	292	WASH	1.60	64.00	9.28	1.29	27.24	62.19	7330.00	2.37	1.50
9	105.58	105.90	293	RAW	.00	.00	24.80	1.48	22.79	50.93	5877.00	6.84	-1.00
9	105.58	105.90	293	WASH	1.60	63.00	11.20	1.05	24.66	63.09	7155.00	3.89	1.00
9	106.60	107.24	294	RAW	.00	.00	20.99	1.12	25.59	52.30	6093.00	1.08	-1.00
9	106.60	107.24	294	WASH	1.60	69.00	8.94	1.41	25.27	64.38	7394.00	1.05	2.00
9	109.71	110.24	295	RAW	.00	.00	20.94	1.20	25.66	52.20	6198.00	3.47	-1.00
9	109.71	110.24	295	WASH	1.60	67.00	7.06	1.22	26.36	65.36	7549.00	2.25	1.50
8	115.57	117.56	296	RAW	.00	.00	17.04	1.24	21.82	59.90	6652.00	1.07	-1.00
8	115.57	117.56	296	WASH	1.60	81.00	11.36	1.23	23.35	64.06	7125.00	1.10	1.00
7	135.01	135.44	297	RAW	.00	.00	26.92	1.21	23.56	48.31	5703.00	5.05	-1.00
7	135.01	135.44	297	WASH	1.60	60.00	8.74	1.10	25.91	64.25	7431.00	2.83	2.50
6U	144.99	148.22	298	RAW	.00	.00	15.53	1.03	24.74	58.70	6751.00	1.37	-1.00
6U	144.99	148.22	298	WASH	1.60	82.00	6.47	1.47	27.06	65.00	7578.00	.94	1.50
6U	148.62	149.34	299	RAW	.00	.00	19.46	1.05	21.37	58.12	6422.00	.55	-1.00
6U	148.62	149.34	299	WASH	1.60	79.00	9.34	1.52	23.05	66.09	7299.00	.59	1.00
3	166.17	167.14	301	RAW	.00	.00	11.32	1.10	22.89	64.69	7258.00	1.03	-1.00
3	166.17	167.14	301	WASH	1.60	86.00	7.40	1.27	23.66	67.67	7577.00	.80	1.00
3	169.28	170.23	302	RAW	.00	.00	49.00	1.04	17.96	32.00	3754.00	2.58	-1.00
3	169.28	170.23	302	WASH	1.60	26.00	17.29	.81	24.74	57.16	6759.00	1.31	4.00
3	170.89	171.16	303	RAW	.00	.00	30.08	.96	21.33	47.63	5469.00	1.80	-1.00
3	170.89	171.16	303	WASH	1.60	65.00	14.13	.80	22.67	62.40	7079.00	1.29	2.00
2	176.74	178.90	304	RAW	.00	.00	28.63	.98	21.53	48.86	5643.00	1.52	-1.00
2	176.74	178.90	304	WASH	1.60	68.00	9.16	.79	25.36	64.49	7462.00	1.41	2.50
2	179.83	180.26	305	RAW	.00	.00	38.84	.74	19.61	40.81	4621.00	.54	-1.00
2	179.83	180.26	305	WASH	1.60	45.00	13.62	.86	24.20	61.32	7018.00	.70	1.00
2	181.01	182.11	306	RAW	.00	.00	11.13	1.03	24.23	63.61	7182.00	.60	-1.00
2	181.01	182.11	306	WASH	1.60	89.00	8.18	1.47	24.54	65.81	7498.00	.77	1.50
1	305.76	306.68	307	RAW	.00	.00	19.69	.89	26.44	52.98	6700.00	3.95	-1.00
1	305.76	306.68	307	WASH	1.60	76.00	11.13	.69	28.67	59.51	7536.00	1.80	5.00
1	306.98	307.99	308	RAW	.00	.00	43.44	.89	20.43	35.24	4380.00	2.31	-1.00
1	306.98	307.99	308	WASH	1.60	27.00	14.87	.75	26.59	57.79	7176.00	.95	3.50
1	309.64	310.45	309	RAW	.00	.00	44.49	.91	22.25	32.35	4319.00	3.59	-1.00
1	309.64	310.45	309	WASH	1.60	42.00	17.56	.59	30.44	51.41	6964.00	2.29	6.50
1	313.98	314.98	310	RAW	.00	.00	38.15	.85	21.54	39.46	4820.00	2.69	-1.00
1	313.98	314.98	310	WASH	1.60	40.00	18.14	.70	28.21	52.95	6809.00	1.62	6.00

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SEAM	TOP	BOT	SAMPLE	ATYP	SG	YIELD	ASH	RESMOIST	VOL	CARB	KCAL	SULF	FSI
8	10.99	12.73	133	RAW	.00	.00	13.80	1.23	28.08	56.89	6967.00	1.48	-1.00
8	10.99	12.73	133	WASH	1.60	82.00	8.73	1.29	29.17	60.81	7390.00	1.11	1.00
7	31.95	32.34	134	RAW	.00	.00	34.57	.88	23.96	40.59	5128.00	5.83	-1.00
7	31.95	32.34	134	WASH	1.60	59.00	7.04	1.48	31.36	60.12	7570.00	1.41	4.00
7	46.04	48.10	135	RAW	.00	.00	19.75	.91	26.67	52.67	6392.00	2.19	-1.00
7	46.04	48.10	135	WASH	1.60	77.00	9.55	1.55	29.19	59.71	7323.00	1.56	1.50
6	52.60	55.72	136	RAW	.00	.00	44.94	.92	20.09	34.05	4176.00	.59	-1.00
6	52.60	55.72	136	WASH	1.60	43.00	6.83	1.47	29.22	62.48	7605.00	.53	1.00
6	58.24	58.65	137	RAW	.00	.00	19.25	.99	28.28	51.48	6282.00	1.86	-1.00
6	58.24	58.65	137	WASH	1.60	75.00	10.96	1.47	27.56	60.01	7238.00	1.12	1.00
5	60.35	62.40	138	RAW	.00	.00	15.36	1.20	27.54	55.90	6835.00	1.39	-1.00
5	60.35	62.40	138	WASH	1.60	82.00	4.87	1.38	30.54	63.21	7761.00	1.13	3.50
4	73.24	74.36	139	RAW	.00	.00	22.03	1.02	27.03	49.92	6305.00	4.11	-1.00
4	73.24	74.36	139	WASH	1.60	66.00	10.18	1.19	31.07	57.56	7339.00	2.92	4.00
2	90.73	94.44	140	RAW	.00	.00	27.43	1.40	24.10	47.07	5723.00	1.85	-1.00
2	90.73	94.44	140	WASH	1.60	60.00	7.48	1.43	28.61	62.48	7539.00	.75	2.00
2	97.07	97.72	141	RAW	.00	.00	39.52	.89	20.79	38.80	4611.00	.38	-1.00
2	97.07	97.72	141	WASH	1.60	60.00	6.91	1.56	27.60	63.93	7517.00	.46	2.00
9	152.70	153.15	142	RAW	.00	.00	24.34	.78	28.90	45.98	5980.00	5.86	-1.00
9	152.70	153.15	142	WASH	1.60	61.00	7.39	.99	32.66	58.96	7622.00	1.87	6.50
8	154.51	157.24	143	RAW	.00	.00	14.10	.97	27.39	57.54	6995.00	1.62	-1.00
8	154.51	157.24	143	WASH	1.60	83.00	6.92	1.21	28.05	63.82	7663.00	.92	2.00
7	171.15	172.56	144	RAW	.00	.00	48.34	1.02	18.94	31.70	3890.00	1.15	-1.00
7	171.15	172.56	144	WASH	1.60	46.00	9.73	1.15	28.22	60.90	7429.00	1.31	2.50
6	178.25	178.59	145	RAW	.00	.00	13.43	1.09	28.83	56.65	7156.00	1.65	-1.00
6	178.25	178.59	145	WASH	1.60	86.00	6.24	.89	30.71	62.16	7790.00	1.23	3.50
6	178.90	179.62	146	RAW	.00	.00	20.39	1.11	24.89	53.61	6354.00	1.83	-1.00
6	178.90	179.62	146	WASH	1.60	75.00	11.19	.98	26.07	61.76	7271.00	1.00	1.00
6	179.62	179.97	147	RAW	.00	.00	54.09	1.00	17.89	27.02	3338.00	2.27	-1.00
6	179.62	179.97	147	WASH	1.60	32.00	20.73	.89	26.01	52.37	6450.00	1.08	1.00
6	179.97	181.79	148	RAW	.00	.00	7.39	1.10	27.55	63.96	7614.00	.79	-1.00
6	179.97	181.79	148	WASH	1.60	86.00	4.58	1.33	27.98	66.11	7860.00	.67	1.50
1	290.67	290.92	149	RAW	.00	.00	33.06	.76	26.98	39.20	5315.00	1.78	-1.00
1	290.67	290.92	149	WASH	1.60	58.00	11.05	.62	28.00	60.34	7395.00	1.59	3.50
1	291.15	292.28	150	RAW	.00	.00	24.12	.75	24.10	51.03	6089.00	1.81	-1.00
1	291.15	292.28	150	WASH	1.60	76.00	13.47	.96	25.07	60.50	7095.00	1.45	2.00
Q	306.55	307.05	151	RAW	.00	.00	44.12	.76	19.91	35.21	4199.00	.30	-1.00
Q	306.55	307.05	151	WASH	1.60	29.00	17.37	.84	25.96	55.83	6735.00	.36	5.50
Q	346.95	347.30	152	RAW	.00	.00	44.66	.88	21.38	33.08	4034.00	.60	-1.00
Q	346.95	347.30	152	WASH	1.60	30.00	17.63	.99	27.09	54.29	6693.00	.42	7.50
Q	347.85	348.35	153	RAW	.00	.00	57.67	1.00	18.80	22.53	2677.00	.20	-1.00
Q	347.85	348.35	153	WASH	1.60	18.00	11.40	1.05	27.04	60.51	7275.00	.53	7.00
Q	349.03	349.30	154	RAW	.00	.00	45.98	1.02	21.80	31.20	3878.00	.42	-1.00
Q	349.03	349.30	154	WASH	1.60	32.00	16.69	.97	27.69	54.65	6795.00	.61	4.50

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SEAM	TOP	BOT	SAMPLE	ATYP	SG	YIELD	ASH	RESMOIST	VOL	CARB	KCAL	SULF	FSI
6L	21.76	28.40	108	RAW	.00	.00	9.08	1.14	29.82	59.96	7466.00	1.64	-1.00
6L	21.76	28.40	108	WASH	1.60	91.00	5.46	1.49	31.10	61.95	7704.00	1.09	6.00
6U	29.89	36.16	109	RAW	.00	.00	16.54	.96	27.50	55.00	6752.00	2.06	-1.00
6U	29.89	36.16	109	WASH	1.60	79.00	5.35	1.42	29.31	63.92	7720.00	1.05	3.00
4	44.50	45.48	110	RAW	.00	.00	15.64	.94	24.04	59.38	6878.00	1.67	-1.00
4	44.50	45.48	110	WASH	1.60	82.00	7.40	1.83	25.31	65.46	7530.00	1.11	1.50
4	46.60	47.04	111	RAW	.00	.00	26.95	.86	21.07	51.12	5806.00	2.31	-1.00
4	46.60	47.04	111	WASH	1.60	62.00	14.54	1.61	21.83	62.02	6894.00	1.84	1.00
3	57.86	58.24	112	RAW	.00	.00	31.83	.78	24.49	42.90	5329.00	1.91	-1.00
3	57.86	58.24	112	WASH	1.60	59.00	12.45	1.24	27.97	58.34	7146.00	1.98	2.00
2	62.08	66.78	113	RAW	.00	.00	19.89	1.39	.00	.00	.00	1.08	.00
2	62.08	66.78	113	WASH	1.70	87.40	11.24	3.37	25.96	61.50	7223.00	.87	.00
1	178.30	180.36	114	RAW	.00	.00	17.06	.77	25.32	56.85	6740.00	2.08	-1.00
1	178.30	180.36	114	WASH	1.60	76.00	7.57	1.08	26.08	65.27	7630.00	1.15	2.50

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SEAM	TOP	BOT	SAMPLE	ATYP	SG	YIELD	ASH	RESMOIST	VOL	CARB	KCAL	SULF	FSI
Q	116.38	117.40	456	RAW	.00	.00	52.78	.60	16.79	29.83	3388.00	2.82	-1.00
Q	116.38	117.40	456	WASH	1.60	28.00	12.85	1.36	24.96	60.83	6974.00	.95	1.50
6	134.92	135.65	457	WASH	1.60	91.00	5.06	1.59	27.39	65.96	7622.00	.55	1.50
6	134.92	135.65	457	RAW	.00	.00	13.23	1.37	25.50	59.90	6934.00	.87	-1.00
6	136.07	137.44	458	RAW	.00	.00	29.05	1.06	23.43	46.46	5518.00	3.33	-1.00
6	136.07	137.44	458	WASH	1.60	60.00	11.53	1.13	28.02	59.32	7137.00	2.01	1.00
Q	154.68	155.12	459	RAW	.00	.00	42.16	.74	29.62	27.48	3831.00	1.55	-1.00
Q	154.68	155.12	459	WASH	1.60	26.00	19.26	.93	28.42	51.39	6616.00	2.04	3.00
3	155.27	157.43	460	RAW	.00	.00	62.89	.97	15.71	20.43	2274.00	1.68	-1.00
3	155.27	157.43	460	WASH	1.60	20.00	16.75	1.24	28.66	53.35	6741.00	1.10	2.00
3	167.96	168.16	461	RAW	.00	.00	37.02	.81	23.95	38.22	4940.00	6.00	-1.00
3	167.96	168.16	461	WASH	1.60	45.00	19.06	.89	27.45	52.60	6659.00	2.93	1.50
3	168.61	169.32	462	RAW	.00	.00	27.52	.74	26.08	45.66	5585.00	.76	-1.00
3	168.61	169.32	462	WASH	1.60	68.00	14.29	1.23	26.90	57.58	6940.00	.94	1.00
3	169.56	169.94	463	RAW	.00	.00	25.71	.72	22.53	51.04	5945.00	.38	-1.00
3	169.56	169.94	463	WASH	1.60	71.00	14.85	1.22	23.44	60.49	6907.00	.51	1.50
2	173.40	174.24	464	RAW	.00	.00	28.93	.75	22.50	47.82	5622.00	.45	-1.00
2	173.40	174.24	464	WASH	1.60	69.00	15.66	1.49	24.35	58.50	6825.00	.46	1.00
2	174.68	175.02	465	RAW	.00	.00	36.92	.73	22.99	39.36	4855.00	.57	-1.00
2	174.68	175.02	465	WASH	1.60	55.00	20.82	1.19	24.45	53.54	6415.00	.57	1.00
2	175.64	176.20	466	RAW	.00	.00	38.73	.96	19.50	40.81	4629.00	5.23	-1.00
2	175.64	176.20	466	WASH	1.60	47.00	15.47	.96	24.96	58.61	6843.00	2.45	1.00

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SEAM	TOP	BOT	SAMPLE	ATYP	SG	YIELD	ASH	RESMOIST	VOL	CARB	KCAL	SULF	FSI
1	150.73	151.38	286	RAW	.00	.00	42.95	.80	25.72	30.53	3826.00	3.52	1.00
1	150.73	151.38	286	WASH	1.60	30.00	10.74	1.11	27.06	61.09	7335.00	1.27	4.00
1	153.23	155.05	287	RAW	.00	.00	56.30	.89	17.96	24.85	2989.00	2.51	1.50
1	153.23	155.05	287	WASH	1.60	23.00	14.02	1.14	27.43	57.41	6958.00	1.31	4.50

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SEAM	TOP	BOT	SAMPLE	ATYP	SG	YIELD	ASH	RESMOIST	VOL	CARB	KCAL	SULF	FSI
1	128.84	131.29	218	RAW	.00	.00	14.41	.95	25.10	59.54	6904.00	2.66	-1.00
1	128.84	131.29	218	WASH	1.60	82.00	7.56	1.01	26.07	65.36	7589.00	1.64	2.50
1	133.60	133.93	219	RAW	.00	.00	29.31	.80	26.37	53.52	5569.00	8.64	-1.00
1	133.60	133.93	219	WASH	1.60	56.00	16.05	.74	28.89	54.32	6902.00	4.48	7.50
1	134.84	135.78	220	RAW	.00	.00	23.91	.93	25.00	50.16	6081.00	2.35	-1.00
1	134.84	135.78	220	WASH	1.60	69.00	14.88	.96	27.03	57.13	6960.00	1.36	6.00
1	136.53	136.83	221	RAW	.00	.00	20.55	.76	28.19	50.50	6278.00	3.92	-1.00
1	136.53	136.83	221	WASH	1.60	68.00	10.13	.80	28.51	60.56	7402.00	2.97	7.00
1	136.83	138.04	222	RAW	.00	.00	32.62	.82	22.64	43.92	5221.00	3.56	-1.00
1	136.83	138.04	222	WASH	1.60	54.00	10.79	.71	27.06	61.44	7300.00	2.34	4.50
1	139.34	142.71	223	RAW	.00	.00	42.10	.81	21.03	36.06	4329.00	.34	-1.00
1	139.34	142.71	223	WASH	1.60	40.00	14.12	1.03	26.06	58.79	6969.00	.52	3.00

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SEAM	TOP	BOT	SAMPLE	ATYP	SG	YIELD	ASH	RESMOIST	VOL	CARB	KCAL	SULF	FSI
2	122.42	123.22	173	RAW	.00	.00	17.55	.88	27.59	53.98	6563.00	.76	-1.00
2	122.42	123.22	173	WASH	1.60	79.00	7.58	1.29	28.43	62.70	7520.00	.61	1.00
2	123.59	124.59	174	RAW	.00	.00	27.13	1.00	22.97	48.90	5788.00	.79	-1.00
2	123.59	124.59	174	WASH	1.60	65.00	13.33	1.04	26.06	59.57	7025.00	.74	1.00
2	124.97	125.31	175	RAW	.00	.00	24.56	.96	24.62	49.86	5931.00	.72	-1.00
2	124.97	125.31	175	WASH	1.60	73.00	15.92	1.33	25.65	57.10	6779.00	.65	1.00
2	125.49	126.05	176	RAW	.00	.00	11.42	1.06	26.30	61.22	7212.00	1.31	-1.00
2	125.49	126.05	176	WASH	1.60	91.00	8.84	1.17	26.92	63.07	7430.00	1.02	1.00

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SEAM	TOP	BOT	SAMPLE	ATYP	SG	YIELD	ASH	RESMOIST	VOL	CARB	KCAL	SULF	FSI
1	40.76	42.94	321	RAW	.00	.00	12.97	1.02	28.23	57.78	7161.00	1.89	-1.00
1	40.76	42.94	321	WASH	1.60	83.00	6.28	.85	29.86	63.01	7750.00	1.44	4.00
1	43.99	45.74	322	RAW	.00	.00	21.86	.93	27.57	49.64	6298.00	3.44	-1.00
1	43.99	45.74	322	WASH	1.60	74.00	11.99	.75	31.35	55.91	7304.00	2.46	6.50
1	47.63	48.07	323	RAW	.00	.00	25.89	.93	27.42	45.76	5908.00	1.03	-1.00
1	47.63	48.07	323	WASH	1.60	68.00	16.00	.94	29.52	53.54	6860.00	.29	6.50
1	49.14	50.46	324	RAW	.00	.00	19.12	1.31	26.47	53.10	6509.00	.45	-1.00
1	49.14	50.46	324	WASH	1.60	84.00	13.85	1.28	27.67	57.20	7004.00	.46	4.00
Q	56.56	57.14	325	RAW	.00	.00	36.32	1.13	22.57	39.98	4839.00	.36	-1.00
Q	56.56	57.14	325	WASH	1.60	48.00	16.74	1.17	26.24	55.85	6734.00	.48	1.50
Q	89.75	90.19	326	RAW	.00	.00	42.82	1.05	27.50	28.63	3574.00	.62	-1.00
Q	89.75	90.19	326	WASH	1.60	29.00	14.70	1.05	28.37	55.80	6890.00	.93	6.50

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SEAM	TOP	BOT	SAMPLE	ATYP	SG	YIELD	ASH	RESMOIST	VOL	CARB	KCAL	SULF	FSI
1	31.28	31.58	399	RAW	.00	.00	41.26	1.40	23.31	34.03	4167.00	.63	2.00
1	31.28	31.58	399	WASH	1.60	45.00	16.06	1.61	26.96	55.37	6627.00	.88	4.00

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SEAM	TOP	BOT	SAMPLE	ATYP	SG	YIELD	ASH	RESMOIST	VOL	CARB	KCAL	SULF	FSI
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5	8.80	8.96	87	RAW	.00	.00	50.09	.85	24.47	24.59	.00	.41	.00
5	10.82	11.10	88	RAW	.00	.00	15.30	1.12	27.90	55.68	6903.00	1.14	-1.00
5	10.82	11.10	88	WASH	1.60	88.00	11.18	1.09	27.63	60.10	7274.00	.95	1.00
Q	12.04	12.24	89	RAW	.00	.00	23.78	1.24	24.30	50.68	6070.00	4.20	-1.00
Q	12.04	12.24	89	WASH	1.60	73.00	12.90	1.25	26.14	59.71	7065.00	1.37	1.00
4	15.27	15.55	90	RAW	.00	.00	31.51	.89	33.20	34.40	4738.00	1.81	-1.00
4	15.27	15.55	90	WASH	1.60	32.00	11.08	1.06	29.61	58.25	7262.00	1.64	1.00
4	16.70	16.90	91	RAW	.00	.00	35.92	1.37	24.58	38.13	4813.00	4.02	-1.00
4	16.70	16.90	91	WASH	1.60	45.00	13.52	1.20	27.63	57.65	6995.00	3.17	1.00
6	28.14	30.82	92-94	RAW	.00	.00	25.88	.99	28.12	45.01	5593.00	.85	-1.00
6	28.14	30.82	92-94	WASH	1.60	59.00	7.80	1.60	27.31	63.29	7455.00	.74	1.00
2	31.06	31.90	95	RAW	.00	.00	25.42	1.34	24.45	48.79	5810.00	.52	-1.00
2	31.06	31.90	95	WASH	1.60	70.00	13.77	1.38	25.52	59.33	6936.00	.38	1.00
2	32.68	32.96	96	RAW	.00	.00	31.34	1.17	27.15	40.34	4921.00	.50	-1.00
2	32.68	32.96	96	WASH	1.60	41.00	17.62	1.34	26.38	54.66	6565.00	.54	1.00
2	34.56	35.08	97	RAW	.00	.00	17.44	1.10	27.03	54.43	6559.00	1.32	-1.00
2	34.56	35.08	97	WASH	1.60	86.00	10.62	1.40	25.93	62.05	7278.00	.99	1.00

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SEAM	TOP	BOT	SAMPLE	ATYP	SG	YIELD	ASH	RESMOIST	VOL	CARB	KCAL	SULF	FSI
1	111.51	112.00	288	RAW	.00	.00	32.21	1.00	26.14	40.65	50.00	.42	1.00
1	111.51	112.00	288	WASH	1.60	53.00	12.00	1.35	27.80	58.85	7087.00	.56	3.00
1	117.42	117.88	289	RAW	.00	.00	39.51	1.22	22.67	36.60	4492.00	.21	1.50
1	117.42	117.88	289	WASH	1.60	37.00	17.20	1.45	27.92	53.43	6632.00	.32	3.50
1	118.54	118.84	290	RAW	.00	.00	51.77	1.11	20.75	26.37	31.00	.16	.50
1	118.54	118.84	290	WASH	1.60	18.00	18.57	1.52	26.35	53.56	6436.00	.33	3.50
Q	126.69	127.05	291	RAW	.00	.00	42.63	1.18	23.44	32.75	3944.00	.37	1.20
Q	126.69	127.05	291	WASH	1.60	27.00	16.39	1.64	26.31	55.66	6643.00	.59	2.50

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SEAM	TOP	BOT	SAMPLE	ATYP	SG	YIELD	ASH	RESMOIST	VOL	CARB	KCAL	SULF	FSI
7	18.96	20.18	98	RAW	.00	.00	17.25	1.43	26.33	54.99	6601.00	2.07	-1.00
7	18.96	20.18	98	WASH	1.60	80.00	8.98	1.43	27.79	61.80	7372.00	1.45	1.00
5	36.10	37.64	100	RAW	.00	.00	13.45	1.41	27.42	57.72	6968.00	.54	-1.00
5	36.10	37.64	100	WASH	1.60	84.00	5.62	1.47	29.29	63.62	7681.00	.56	2.00
5	38.14	38.96	101	RAW	.00	.00	19.20	1.19	26.10	53.51	6495.00	2.20	-1.00
5	38.14	38.96	101	WASH	1.60	78.00	11.64	1.35	27.80	59.21	7223.00	.78	1.00
5	39.52	40.28	102	RAW	.00	.00	22.20	1.15	24.22	52.43	6257.00	1.79	-1.00
5	39.52	40.28	102	WASH	1.60	72.00	12.63	1.42	26.83	59.12	7101.00	1.27	1.00
4	43.88	44.39	103	RAW	.00	.00	9.95	1.12	30.55	58.38	7414.00	1.67	-1.00
4	43.88	44.39	103	WASH	1.60	85.00	6.54	1.03	32.00	60.43	7728.00	1.53	2.50
3	62.76	64.68	104	RAW	.00	.00	45.78	1.06	20.96	32.20	3993.00	.93	-1.00
3	62.76	64.68	104	WASH	1.60	42.00	8.34	1.42	28.52	61.72	7481.00	.82	1.00
2	65.62	66.35	105	RAW	.00	.00	31.52	1.12	23.99	43.37	5232.00	.57	-1.00
2	65.62	66.35	105	WASH	1.60	58.00	12.56	1.19	26.69	59.56	7065.00	.58	1.00
2	67.74	68.00	106	RAW	.00	.00	35.68	.98	25.74	37.60	4623.00	.72	-1.00
2	67.74	68.00	106	WASH	1.60	45.00	21.03	1.30	25.60	52.07	6359.00	.61	1.00
2	68.65	69.26	107	RAW	.00	.00	19.93	1.13	25.41	53.53	6412.00	3.11	-1.00
2	68.65	69.26	107	WASH	1.60	77.00	11.60	1.18	25.99	71.67	7176.00	1.16	1.00

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SEAM	TOP	BOT	SAMPLE	ATYP	SG	YIELD	ASH	RESMOIST	VOL	CARB	KCAL	SULF	FSI
7	68.26	69.36	166	RAW	.00	.00	16.30	.84	26.78	56.08	6615.00	1.67	-1.00
7	68.26	69.36	166	WASH	1.60	82.00	9.57	1.13	25.01	64.29	7389.00	1.19	2.00
7	70.60	71.12	167	RAW	.00	.00	22.12	1.02	26.96	49.90	6101.00	1.95	-1.00
7	70.60	71.12	167	WASH	1.60	67.00	9.97	1.02	24.89	64.12	7370.00	1.38	1.50
7	71.54	71.98	168	RAW	.00	.00	25.99	.97	28.99	44.05	5510.00	1.90	-1.00
7	71.54	71.98	168	WASH	1.60	.00	.00	.00	.00	.00	.00	.00	-1.00
6	76.60	78.32	169	RAW	.00	.00	27.17	.68	31.47	40.68	5219.00	1.57	-1.00
6	76.60	78.32	169	WASH	1.60	51.00	12.46	.96	27.37	59.21	7170.00	1.64	2.00
5	79.75	80.48	170	RAW	.00	.00	20.45	.78	26.58	52.19	6445.00	5.08	-1.00
5	79.75	80.48	170	WASH	1.60	77.00	8.03	.89	29.61	61.47	7582.00	1.39	4.00
4	82.52	84.06	171	RAW	.00	.00	21.08	.69	27.48	50.75	6295.00	2.13	-1.00
4	82.52	84.06	171	WASH	1.60	77.00	9.57	.71	27.64	62.08	7468.00	1.65	3.50
3	87.97	88.30	172	RAW	.00	.00	33.35	.77	20.48	45.40	5189.00	.67	-1.00
3	87.97	88.30	172	WASH	1.60	59.00	17.06	1.21	23.88	57.85	6676.00	.54	1.00

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SEAM	TOP	BOT	SAMPLE	ATYP	SG	YIELD	ASH	RESMOIST	VOL	CARB	KCAL	SULF	FSI
10	41.67	42.42	115	RAW	.00	.00	22.91	1.19	27.37	48.53	6160.00	3.22	-1.00
10	41.67	42.42	115	WASH	1.60	75.00	9.92	1.23	31.47	57.38	7367.00	2.18	1.50
10	49.72	50.73	116	RAW	.00	.00	13.97	.95	32.72	52.36	7044.00	3.75	-1.00
10	49.72	50.73	116	WASH	1.60	76.00	6.90	1.22	34.87	57.01	7703.00	2.17	4.50
9	63.71	64.70	117	RAW	.00	.00	11.83	.87	34.37	52.93	7267.00	2.24	-1.00
9	63.71	64.70	117	WASH	1.60	87.00	6.29	1.08	36.97	55.66	7790.00	1.69	7.00
9	66.55	67.74	118	RAW	.00	.00	11.85	.85	33.12	54.18	7239.00	2.07	-1.00
9	66.55	67.74	118	WASH	1.60	84.00	6.92	1.23	35.21	56.64	7690.00	1.67	6.00
8	69.88	72.16	119	RAW	.00	.00	9.97	.92	30.24	58.87	7331.00	2.11	-1.00
8	69.88	72.16	119	WASH	1.60	90.00	6.91	1.24	30.66	61.19	7642.00	1.47	1.00
8	76.64	78.99	120	RAW	.00	.00	15.14	.74	28.83	55.29	6848.00	1.83	-1.00
8	76.64	78.99	120	WASH	1.60	80.00	7.28	1.13	29.56	62.03	7591.00	1.08	1.50
7	118.55	119.76	121	RAW	.00	.00	16.86	.85	28.57	53.72	6774.00	2.58	-1.00
7	118.55	119.76	121	WASH	1.60	76.00	7.06	1.28	30.47	61.18	7675.00	1.76	3.50
6	125.51	125.78	122	RAW	.00	.00	13.15	.73	30.13	55.99	7142.00	1.59	-1.00
6	125.51	125.78	122	WASH	1.60	79.00	4.97	1.07	31.80	62.16	7868.00	1.25	2.00
6	126.11	128.32	123	RAW	.00	.00	12.33	.62	27.87	59.18	7115.00	.69	-1.00
6	126.11	128.32	123	WASH	1.60	86.00	7.55	1.40	27.46	63.59	7537.00	.66	1.00
3	149.60	149.95	124	RAW	.00	.00	42.12	.85	23.41	33.62	4530.00	2.31	-1.00
3	149.60	149.95	124	WASH	1.60	39.00	17.39	.84	29.97	51.80	6907.00	1.47	6.00
3	151.31	152.55	125	RAW	.00	.00	13.35	.70	27.30	58.65	7072.00	.95	-1.00
3	151.31	152.55	125	WASH	1.60	85.00	8.71	1.11	27.33	62.85	7545.00	.79	1.00
3	153.39	154.29	126	RAW	.00	.00	37.11	.90	22.64	39.35	4906.00	2.24	-1.00
3	153.39	154.29	126	WASH	1.60	50.00	9.91	.93	28.30	60.86	7453.00	1.09	1.00
2	157.55	158.03	127	RAW	.00	.00	29.98	.65	27.30	42.07	5602.00	2.28	-1.00
2	157.55	158.03	127	WASH	1.60	62.00	15.92	.82	29.57	53.69	6987.00	1.73	2.50
2	158.36	162.74	128	RAW	.00	.00	28.29	1.02	26.31	44.38	5622.00	.86	-1.00
2	158.36	162.74	128	WASH	1.60	60.00	6.96	1.05	29.84	62.15	7671.00	.68	2.50
2	163.41	163.99	129	RAW	.00	.00	37.71	.71	24.47	37.11	4691.00	.98	-1.00
2	163.41	163.99	129	WASH	1.60	47.00	14.06	.92	27.66	57.36	7020.00	.62	2.00
2	165.32	165.72	130	RAW	.00	.00	63.46	.75	19.76	16.03	2214.00	.58	-1.00
2	165.32	165.72	130	WASH	1.60	13.00	21.49	1.08	29.12	48.31	6395.00	.84	6.50
2	166.40	166.90	131	RAW	.00	.00	17.79	.76	26.69	54.76	6719.00	1.37	-1.00
2	166.40	166.90	131	WASH	1.60	83.00	12.56	1.05	27.11	59.28	7157.00	1.03	1.00

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SEAM	TOP	BOT	SAMPLE	ATYP	SG	YIELD	ASH	RESMOIST	VOL	CARB	KCAL	SULF	FSI
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3	79.24	82.22	357	RAW	.00	.00	18.04	.72	25.74	55.50	6485.00	1.26	-1.00
3	79.24	82.22	357	WASH	1.60	75.00	9.60	1.25	25.57	63.58	7358.00	1.10	1.00
2	88.63	91.67	358	RAW	.00	.00	22.25	.63	27.53	49.59	6038.00	1.21	-1.00
2	88.63	91.67	358	WASH	1.60	69.00	9.90	1.38	28.13	60.59	7311.00	1.32	2.50
2	94.68	96.75	359	RAW	.00	.00	36.90	.74	28.12	34.24	4539.00	2.32	-1.00
2	94.68	96.75	359	WASH	1.60	46.00	11.03	1.05	26.76	61.16	7262.00	1.43	2.50
Q	101.68	102.10	360	RAW	.00	.00	35.93	.86	19.62	43.59	5064.00	.46	-1.00
Q	101.68	102.10	360	WASH	1.60	45.00	20.41	1.23	22.94	55.42	6420.00	.54	1.50
Q	105.20	105.91	361	RAW	.00	.00	39.38	.71	23.78	36.13	4413.00	.68	-1.00
Q	105.20	105.91	361	WASH	1.60	43.00	15.27	1.04	25.74	57.95	6958.00	.70	2.50

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SEAM	TOP	BOT	SAMPLE	ATYP	SG	YIELD	ASH	RESMOIST	VOL	CARB	KCAL	SULF	FSI
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10	115.16	115.80	204	RAW	.00	.00	15.02	.85	31.03	53.10	6952.00	2.50	-1.00
10	115.16	115.80	204	WASH	1.60	86.00	10.03	1.07	30.75	58.15	7454.00	2.12	1.50
9	120.55	121.56	205	RAW	.00	.00	13.48	1.00	32.33	53.19	7126.00	2.74	-1.00
9	120.55	121.56	205	WASH	1.60	83.00	7.59	1.29	33.17	57.95	7633.00	1.79	5.00
8	123.30	124.12	206	RAW	.00	.00	17.23	.88	30.74	51.15	6494.00	1.95	-1.00
8	123.30	124.12	206	WASH	1.60	73.00	5.91	1.34	30.38	62.37	7743.00	1.19	3.50
7	145.04	146.31	207	RAW	.00	.00	18.89	.87	27.45	52.79	6491.00	2.49	-1.00
7	145.04	146.31	207	WASH	1.60	77.00	8.30	1.30	28.54	61.86	7484.00	1.39	2.50
6	154.06	157.12	208	RAW	.00	.00	18.84	.70	25.60	54.86	6469.00	.68	-1.00
6	154.06	157.12	208	WASH	1.60	81.00	7.72	1.24	27.72	63.32	7511.00	.74	1.00
Q	182.27	182.61	209	RAW	.00	.00	20.84	.75	24.31	54.10	6492.00	3.35	-1.00
Q	182.27	182.61	209	WASH	1.60	79.00	11.53	1.20	25.21	62.06	7324.00	1.66	1.00
3	191.25	191.84	210	RAW	.00	.00	38.84	.80	26.34	34.02	4541.00	5.50	-1.00
3	191.25	191.84	210	WASH	1.60	37.00	14.65	1.09	27.85	56.41	7012.00	3.54	1.00
3	193.29	194.20	211	RAW	.00	.00	21.15	.86	25.05	52.94	6339.00	.76	-1.00
3	193.29	194.20	211	WASH	1.60	75.00	10.39	1.10	26.61	61.90	7375.00	.65	1.00
3	194.98	196.53	212	RAW	.00	.00	12.10	.82	27.16	59.92	7218.00	1.67	-1.00
3	194.98	196.53	212	WASH	1.60	89.00	8.63	1.00	26.71	63.66	7539.00	1.03	1.00
3	199.44	199.84	213	RAW	.00	.00	31.32	.58	30.23	36.87	4913.00	1.57	-1.00
3	199.44	199.84	213	WASH	1.60	46.00	12.60	1.01	28.20	58.19	7238.00	1.31	1.00
2	203.73	204.38	214	RAW	.00	.00	24.12	.62	27.39	47.87	6135.00	.92	-1.00
2	203.73	204.38	214	WASH	1.60	78.00	14.82	.94	28.74	55.50	7065.00	1.51	1.00
2	204.78	206.43	215	RAW	.00	.00	19.84	.78	27.75	51.63	6488.00	.93	-1.00
2	204.78	206.43	215	WASH	1.60	77.00	8.69	1.02	29.52	60.77	7562.00	.89	3.50
2	207.94	208.36	216	RAW	.00	.00	33.52	.80	22.82	42.86	5173.00	.40	-1.00
2	207.94	208.36	216	WASH	1.60	56.00	14.49	1.01	26.40	58.10	6995.00	.40	1.50
Q	211.80	212.10	217	RAW	.00	.00	35.19	.85	21.43	42.53	4980.00	.53	-1.00
Q	211.80	212.10	217	WASH	1.60	56.00	17.34	1.05	24.09	55.52	6784.00	.65	1.00

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SEAM	TOP	BOT	SAMPLE	ATYP	SG	YIELD	ASH	RESMOIST	VOL	CARB	KCAL	SULF	FSI
1	262.73	264.14	379	RAW	.00	.00	9.64	.98	30.14	59.24	7489.00	.65	8.00
1	262.73	264.14	379	WASH	1.60	90.00	6.42	.91	30.42	62.25	7823.00	.52	8.50
1	266.51	268.44	380	RAW	.00	.00	63.25	.90	5.83	20.02	2381.00	.50	1.00
1	266.51	268.44	380	WASH	1.60	13.00	23.76	1.05	24.33	50.86	6229.00	.83	2.50
1	270.20	270.64	381	RAW	.00	.00	33.40	1.07	22.03	43.50	5374.00	.35	4.00
1	270.20	270.64	381	WASH	1.60	49.00	10.02	1.17	27.00	61.81	7473.00	.48	6.00
1	273.12	274.12	382	RAW	.00	.00	23.58	1.10	23.28	52.04	6202.00	.30	3.50
1	273.12	274.12	382	WASH	1.60	69.00	12.33	1.27	25.35	61.05	7236.00	.32	4.00

m/D

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SEAM	TOP	BOT	SAMPLE	ATYP	SG	YIELD	ASH	RESMOIST	VOL	CARB	KCAL	SULF	FSI
10	151.95	152.45	311	RAW	.00	.00	29.77	1.53	25.24	43.46	5500.00	3.16	-1.00
10	151.95	152.45	311	WASH	1.60	61.00	12.81	.88	29.13	57.18	7098.00	2.01	1.00
9	156.74	157.66	312	RAW	.00	.00	16.40	.90	29.18	53.52	6904.00	5.79	-1.00
9	156.74	157.66	312	WASH	1.60	80.00	8.63	.60	33.37	57.40	7612.00	2.21	4.00
8	161.38	163.29	313	RAW	.00	.00	11.55	1.02	28.84	58.59	7232.00	1.84	-1.00
8	161.38	163.29	313	WASH	1.60	87.00	6.32	.71	29.95	63.02	7718.00	1.49	1.50
7	180.50	181.97	314	RAW	.00	.00	16.65	1.04	29.00	53.31	6745.00	2.07	-1.00
7	180.50	181.97	314	WASH	1.60	78.00	8.52	.57	30.96	59.95	7577.00	1.67	5.00
6	189.94	192.20	315	RAW	.00	.00	12.31	.92	27.07	59.70	7108.00	.64	-1.00
6	189.94	192.20	315	WASH	1.60	86.00	7.17	1.53	27.83	63.47	7571.00	.55	1.50
6	192.91	193.84	316	RAW	.00	.00	12.93	.91	27.75	58.41	7166.00	1.11	-1.00
6	192.91	193.84	316	WASH	1.60	89.00	9.78	1.37	28.21	60.64	7421.00	1.03	2.00
6	194.58	195.21	317	RAW	.00	.00	11.57	.85	28.30	59.28	7239.00	1.22	-1.00
6	194.58	195.21	317	WASH	1.60	53.00	5.10	1.34	28.80	64.76	7824.00	1.18	1.00
3	212.78	214.83	318	RAW	.00	.00	27.29	.95	23.13	48.63	5806.00	1.47	-1.00
3	212.78	214.83	318	WASH	1.60	72.00	10.28	1.56	26.17	61.99	7358.00	1.05	1.00
2	220.13	221.17	319	RAW	.00	.00	24.98	.66	27.37	46.99	5961.00	1.90	-1.00
2	220.13	221.17	319	WASH	1.60	70.00	12.86	1.12	28.56	57.46	7197.00	1.49	3.50
2	228.91	229.55	320	RAW	.00	.00	43.52	.91	19.31	36.26	4348.00	.00	-1.00
2	228.91	229.55	320	WASH	1.60	42.00	14.07	1.30	24.08	60.55	7041.00	1.13	1.00

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SEAM	TOP	BOT	SAMPLE	ATYP	SG	YIELD	ASH	RESMOIST	VOL	CARB	KCAL	SULF	FSI	
8	36.18	36.56	336	RAW	.00	.00	11.25	1.22	26.38	61.15	7143.00	.55	-1.00	m/D
8	36.18	36.56	336	WASH	.00	.00	3.77	1.87	27.84	66.52	7776.00	.51	2.00	
7	52.42	52.88	177	RAW	.00	.00	30.51	1.00	29.53	38.96	4780.00	.67	-1.00	
7	52.42	52.88	177	WASH	1.60	50.00	9.36	1.14	27.33	62.17	7360.00	.61	1.00	
Q	69.62	70.02	178	RAW	.00	.00	44.56	.96	21.09	33.39	4046.00	2.08	-1.00	
Q	69.62	70.02	178	WASH	1.60	46.00	9.92	1.02	26.75	62.31	7359.00	1.74	2.50	
6	74.43	76.30	179	RAW	.00	.00	11.42	1.04	25.39	62.15	7093.00	.50	-1.00	
6	74.43	76.30	179	WASH	1.60	83.00	5.52	1.45	25.61	67.42	7653.00	.50	2.00	
5	83.96	86.15	180	RAW	.00	.00	14.39	.90	25.42	59.29	6888.00	.39	-1.00	
5	83.96	86.15	180	WASH	1.60	80.00	7.00	1.40	26.65	64.95	7549.00	.56	1.50	
4	90.06	91.26	181	RAW	.00	.00	14.82	.95	24.90	59.33	6930.00	7.45	-1.00	
4	90.06	91.26	181	WASH	1.60	74.00	4.98	1.17	27.77	66.08	7790.00	1.30	2.50	
3	106.01	107.01	182	RAW	.00	.00	16.89	.79	24.83	57.49	6779.00	1.37	-1.00	
3	106.01	107.01	182	WASH	1.60	84.00	10.89	.95	26.04	62.12	7326.00	.86	1.00	
3	107.35	107.90	183	RAW	.00	.00	16.89	.76	25.36	56.99	6729.00	1.41	-1.00	
3	107.35	107.90	183	WASH	1.60	83.00	10.56	.77	25.47	63.20	7375.00	1.28	1.00	
2	118.57	119.27	184	RAW	.00	.00	26.66	.85	23.53	48.96	5929.00	2.86	-1.00	
2	118.57	119.27	184	WASH	1.60	77.00	17.64	.78	24.76	56.82	6772.00	2.65	1.00	
2	120.37	120.68	185	RAW	.00	.00	33.71	.75	21.90	43.64	5200.00	.51	-1.00	
2	120.37	120.68	185	WASH	1.60	58.00	11.07	1.00	25.80	62.13	7294.00	.61	2.50	
2	121.90	122.36	185A	RAW	.00	.00	40.27	.65	27.15	31.93	4065.00	.49	-1.00	
2	121.90	122.36	185A	WASH	1.60	41.00	16.66	1.39	26.36	55.59	6757.00	.74	2.00	
Q	126.69	127.09	186	RAW	.00	.00	54.89	.80	17.63	26.68	.00	.33	.00	

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SEAM	TOP	BOT	SAMPLE	ATYP	SG	YIELD	ASH	RESMOIST	VOL	CARB	KCAL	SULF	FSI
10	64.96	65.51	383	RAW	.00	.00	24.28	.84	29.15	45.73	5922.00	4.90	-1.00
10	64.96	65.51	383	WASH	1.60	63.00	8.70	.85	30.62	59.83	8039.00	1.86	1.50
8	77.44	79.88	384	RAW	.00	.00	9.36	.95	29.59	60.10	7438.00	3.04	-1.00
8	77.44	79.88	384	WASH	1.60	89.00	5.24	.90	29.90	63.96	7789.00	.92	1.50
7	100.60	101.68	385	RAW	.00	.00	21.36	.79	26.57	51.28	6326.00	2.36	-1.00
7	100.60	101.68	385	WASH	1.60	74.00	8.97	.77	29.10	61.16	7466.00	1.65	2.00
6	107.18	107.42	386	RAW	.00	.00	11.95	.66	29.32	58.07	7299.00	3.84	-1.00
6	107.18	107.42	386	WASH	1.60	82.00	5.24	.64	32.10	62.02	7866.00	1.70	4.00
6	107.86	110.32	387	RAW	.00	.00	11.16	1.16	27.06	60.62	7179.00	.72	-1.00
6	107.86	110.32	387	WASH	1.60	84.00	5.89	.91	28.13	65.07	7669.00	.65	1.00
5	117.72	119.53	388	RAW	.00	.00	11.59	1.02	27.91	59.48	7233.00	.49	-1.00
5	117.72	119.53	388	WASH	1.60	86.00	5.32	.83	29.50	64.35	7785.00	.51	2.00
4	120.89	121.65	389	RAW	.00	.00	14.38	.92	28.39	56.31	7060.00	1.87	-1.00
4	120.89	121.65	389	WASH	1.60	84.00	6.46	.77	31.16	61.61	7775.00	1.44	3.50
4	121.65	121.84	390	RAW	.00	.00	59.48	.77	17.43	22.32	2986.00	2.12	-1.00
4	121.65	121.84	390	WASH	1.60	17.00	20.03	.75	29.37	49.85	6564.00	1.97	5.00
4	121.84	122.64	391	RAW	.00	.00	7.47	.79	29.64	62.10	7657.00	1.28	-1.00
4	121.84	122.64	391	WASH	1.60	93.00	5.03	.58	31.43	62.96	7871.00	1.18	3.00
3	128.74	129.69	392	RAW	.00	.00	20.83	.77	27.50	50.90	6251.00	2.15	-1.00
3	128.74	129.69	392	WASH	1.60	67.00	10.53	.96	27.41	61.10	7378.00	1.30	1.00
2	131.08	131.97	393	RAW	.00	.00	42.03	.79	22.44	34.74	4364.00	4.18	-1.00
2	131.08	131.97	393	WASH	1.60	40.00	10.48	.82	28.03	60.67	7398.00	2.20	1.00
2	134.12	135.80	394	RAW	.00	.00	40.21	.55	23.10	36.14	4596.00	2.92	-1.00
2	134.12	135.80	394	WASH	1.60	47.00	15.08	.84	29.06	55.02	7013.00	1.71	1.00
1	267.65	269.36	395	RAW	.00	.00	16.79	.69	26.62	55.90	6806.00	.66	-1.00
1	267.65	269.36	395	WASH	1.60	81.00	10.66	.53	27.08	61.73	7407.00	.66	5.00
1	275.61	277.88	396	RAW	.00	.00	23.39	.51	25.39	50.71	6267.00	1.59	-1.00
1	275.61	277.88	396	WASH	1.60	68.00	10.84	.41	28.77	59.98	7432.00	1.05	7.00
1	280.04	280.84	397	RAW	.00	.00	19.73	.74	28.32	51.21	6466.00	.32	-1.00
1	280.04	280.84	397	WASH	1.60	77.00	11.25	.52	28.49	59.74	7420.00	.37	3.50
1	284.75	285.40	398	RAW	.00	.00	56.39	.70	17.51	25.40	3018.00	.13	-1.00
1	284.75	285.40	398	WASH	1.60	17.00	15.94	.56	25.87	57.63	6912.00	.29	3.50

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SEAM	TOP	BOT	SAMPLE	ATYP	SG	YIELD	ASH	RESMOIST	VOL	CARB	KCAL	SULF	FSI
9	106.19	106.88	155	RAW	.00	.00	18.55	1.11	24.49	55.85	6570.00	1.96	-1.00
9	106.19	106.88	155	WASH	1.60	75.00	9.69	1.12	26.67	62.52	7427.00	1.77	2.00
8	109.25	111.01	156	RAW	.00	.00	11.34	1.10	24.70	62.86	7208.00	1.21	-1.00
8	109.25	111.01	156	WASH	1.60	86.00	7.81	1.28	25.90	65.01	7544.00	1.11	1.50
7	120.70	121.42	157	RAW	.00	.00	21.38	.90	24.95	52.77	6301.00	5.24	-1.00
7	120.70	121.42	157	WASH	1.60	66.00	7.29	1.28	26.21	65.22	7624.00	1.89	2.50
6	126.08	127.47	158	RAW	.00	.00	12.79	1.02	25.66	60.53	7084.00	2.21	-1.00
6	126.08	127.47	158	WASH	1.60	82.00	6.15	1.31	27.35	65.19	7678.00	1.29	2.50
5	134.08	135.62	159	RAW	.00	.00	16.71	.88	25.40	57.01	6580.00	.48	-1.00
5	134.08	135.62	159	WASH	1.60	81.00	9.09	1.58	24.98	64.35	7346.00	.50	1.50
3	155.80	156.14	160	RAW	.00	.00	73.98	1.01	11.05	13.96	1345.00	.19	-1.00
2	166.12	166.73	161	RAW	.00	.00	39.37	.65	20.88	39.10	7498.00	1.96	-1.00
2	166.12	166.73	161	WASH	1.60	39.00	15.47	.88	23.62	60.03	6930.00	1.04	1.00
1	341.60	342.20	162	RAW	.00	.00	62.07	.58	15.43	21.92	2368.00	.15	-1.00
1	346.12	346.48	163	RAW	.00	.00	38.32	.61	20.00	41.17	4759.00	.26	-1.00
1	346.12	346.48	163	WASH	1.60	40.00	23.40	.38	20.14	56.08	6426.00	.32	1.50

NOTE RAW ONLY

TW82D-253

SEAM	TOP	BOT	SAMPLE	ATYP	SG	YIELD	ASH	RESMOIST	VOL	CARB	KCAL	SULF	FSI
Q	36.83	37.86	224	RAW	.00	.00	15.21	.70	28.29	55.80	6876.00	2.86	-1.00
Q	36.83	37.86	224	WASH	1.60	79.00	9.52	1.09	28.15	61.24	7450.00	1.45	2.00
Q	51.20	51.58	225	RAW	.00	.00	30.58	.80	23.57	45.05	5429.00	2.63	-1.00
Q	51.20	51.58	225	WASH	1.60	58.00	16.98	1.11	24.60	57.31	6755.00	1.11	1.00
Q	54.12	54.57	226	RAW	.00	.00	37.35	1.00	23.92	37.73	4788.00	1.56	-1.00
Q	54.12	54.57	226	WASH	1.60	47.00	18.24	.96	28.41	52.39	6673.00	1.67	5.50
Q	55.45	55.79	228	RAW	.00	.00	57.43	.54	18.86	23.17	2845.00	.39	-1.00
Q	55.45	55.79	228	WASH	1.60	26.00	17.48	.95	27.58	53.99	6676.00	.96	5.50
Q	73.65	73.99	229	RAW	.00	.00	32.70	.89	22.36	44.05	5210.00	1.72	-1.00
Q	73.65	73.99	229	WASH	1.60	51.00	17.98	1.03	23.40	57.59	6624.00	1.05	1.00
Q	77.46	77.88	230	RAW	.00	.00	37.06	.98	22.68	39.28	4734.00	6.18	-1.00
Q	77.46	77.88	230	WASH	1.60	44.00	12.80	1.30	25.43	60.47	7090.00	2.23	1.00
10	213.72	214.46	233	RAW	.00	.00	26.31	.73	22.41	50.55	6027.00	2.96	-1.00
10	213.72	214.46	233	WASH	1.60	74.00	18.10	.89	24.02	56.99	6788.00	1.96	1.50
8	227.91	229.91	231	RAW	.00	.00	16.17	1.07	23.01	59.75	6787.00	2.55	-1.00
8	227.91	229.91	231	WASH	1.60	79.00	8.81	.99	25.03	65.17	7478.00	1.20	1.50
7	248.07	249.34	234	RAW	.00	.00	18.96	.80	22.30	57.94	6598.00	1.69	-1.00
7	248.07	249.34	234	WASH	1.60	78.00	7.56	.79	24.69	66.96	7663.00	1.68	3.00
6	256.46	260.42	235	RAW	.00	.00	9.93	.84	23.23	66.00	7399.00	.65	-1.00
6	256.46	260.42	235	WASH	1.60	89.00	5.15	1.49	24.53	68.83	7797.00	.59	1.50
Q	269.60	269.96	236	RAW	.00	.00	10.35	.71	22.64	66.30	7418.00	2.15	-1.00
Q	269.60	269.96	236	WASH	1.60	88.00	6.08	1.06	23.27	69.59	7783.00	1.42	1.00
5	278.20	280.02	238	RAW	.00	.00	18.89	.87	22.09	58.15	6603.00	1.29	-1.00
5	278.20	280.02	238	WASH	1.60	81.00	10.60	1.55	22.83	65.02	7338.00	.73	1.50
4	283.37	285.13	237	RAW	.00	.00	31.45	.72	20.68	47.15	5468.00	2.45	-1.00
4	283.37	285.13	237	WASH	1.60	62.00	15.47	1.22	23.37	59.94	7008.00	1.55	2.00
Q	286.72	287.11	239	RAW	.00	.00	49.56	.70	18.08	31.66	3740.00	1.31	-1.00
Q	286.72	287.11	239	WASH	1.60	29.00	16.18	1.02	23.45	59.35	6956.00	1.06	2.00
3	299.74	301.97	240	RAW	.00	.00	24.15	.79	22.49	52.57	6175.00	.99	-1.00
3	299.74	301.97	240	WASH	1.60	70.00	10.30	.98	24.38	64.34	7505.00	1.72	1.50
2	306.64	308.38	241	RAW	.00	.00	24.77	.77	23.33	51.13	6086.00	1.68	-1.00
2	306.64	308.38	241	WASH	1.60	73.00	13.25	.80	25.55	60.40	7252.00	1.52	3.00

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SEAM	TOP	BOT	SAMPLE	ATYP	SG	YIELD	ASH	RESMOIST	VOL	CARB	KCAL	SULF	FSI
10	137.44	137.94	242	RAW	.00	.00	23.10	1.60	25.47	49.83	6016.00	2.51	-1.00
10	137.44	137.94	242	WASH	1.60	69.00	13.79	1.42	27.19	57.60	6929.00	1.23	1.50
8	151.00	153.30	243	RAW	.00	.00	24.14	1.26	25.94	48.66	5874.00	.23	-1.00
8	151.00	153.30	243	WASH	1.60	65.00	12.79	1.29	28.03	57.89	7010.00	1.18	1.50
Q	156.24	156.74	244	RAW	.00	.00	43.19	1.13	18.86	36.82	4348.00	.84	-1.00
Q	156.24	156.74	244	WASH	1.60	47.00	20.34	1.19	24.51	53.96	6369.00	.85	1.50
6	175.80	176.42	245	RAW	.00	.00	13.05	.92	30.65	55.38	7016.00	1.51	-1.00
6	175.80	176.42	245	WASH	1.60	90.00	8.99	1.00	30.83	59.18	7417.00	1.37	1.50
6	177.64	178.08	246	RAW	.00	.00	39.65	.70	22.50	37.15	4585.00	1.80	-1.00
6	177.64	178.08	246	WASH	1.60	50.00	18.60	1.16	26.80	53.44	6528.00	1.19	1.00
6	179.80	180.51	247	RAW	.00	.00	30.54	.82	26.29	42.35	5316.00	3.67	-1.00
6	179.80	180.51	247	WASH	1.60	50.00	12.62	1.05	27.36	58.97	7071.00	1.45	1.00
6	181.76	182.90	248	RAW	.00	.00	17.73	.85	25.64	55.78	6581.00	.56	-1.00
6	181.76	182.90	248	WASH	1.60	80.00	9.05	1.39	26.75	62.81	7335.00	.56	2.00
2	199.90	200.68	249	RAW	.00	.00	22.43	.92	25.48	51.17	6201.00	1.79	-1.00
2	199.90	200.68	249	WASH	1.60	79.00	15.69	.99	26.56	56.76	6855.00	1.65	1.00

TW82D-255

SEAM	TOP	BOT	SAMPLE	ATYP	SG	YIELD	ASH	RESMOIST	VOL	CARB	KCAL	SULF	FSI
7	107.35	108.56	187	RAW	.00	.00	14.21	.80	28.01	56.98	7027.00	2.31	-1.00
7	107.35	108.56	187	WASH	1.60	86.00	8.10	1.07	29.71	61.12	7552.00	1.33	3.00
6	114.27	115.21	188	RAW	.00	.00	29.11	.64	23.51	46.74	5697.00	3.90	-1.00
6	114.27	115.21	188	WASH	1.60	70.00	5.21	1.17	29.65	63.97	7807.00	.92	1.50
5	120.61	121.44	189	RAW	.00	.00	27.22	.89	23.13	48.76	5820.00	.76	-1.00
5	120.61	121.44	189	WASH	1.60	67.00	12.97	1.10	26.70	59.23	7106.00	.45	1.00
4	123.69	124.88	190	RAW	.00	.00	9.92	.86	30.35	58.87	7478.00	.97	-1.00
4	123.69	124.88	190	WASH	1.60	89.00	5.90	1.05	30.62	62.43	7805.00	.86	2.50
Q	127.14	127.49	191	RAW	.00	.00	53.57	.54	20.60	25.29	3353.00	1.45	-1.00
Q	127.14	127.49	191	WASH	1.60	21.00	21.61	1.02	27.06	50.31	6384.00	1.44	1.00
3	131.42	131.96	192	RAW	.00	.00	35.58	.50	25.62	38.30	5091.00	3.20	-1.00
3	131.42	131.96	192	WASH	1.60	49.00	17.12	.75	27.86	54.27	6838.00	1.81	1.50
3	137.64	139.41	193	RAW	.00	.00	22.55	.58	26.88	49.99	6136.00	.84	-1.00
3	137.64	139.41	193	WASH	1.60	79.00	10.41	.87	28.76	59.96	7365.00	.73	3.00
3	139.76	140.48	194	RAW	.00	.00	29.25	.83	23.51	46.41	5612.00	.58	-1.00
3	139.76	140.48	194	WASH	1.60	67.00	13.79	.95	26.35	58.91	7034.00	.64	1.50
2	140.85	141.20	195	RAW	.00	.00	29.66	.79	25.12	44.43	5475.00	.77	-1.00
2	140.85	141.20	195	WASH	1.60	65.00	18.28	.84	26.09	54.79	6587.00	.65	2.00
2	142.08	142.52	196	RAW	.00	.00	16.06	.67	26.64	56.63	6825.00	1.12	-1.00
2	142.08	142.52	196	WASH	1.60	88.00	11.90	.83	26.33	60.94	7232.00	.95	1.00

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SEAM	TOP	BOT	SAMPLE	ATYP	SG	YIELD	ASH	RESMOIST	VOL	CARB	KCAL	SULF	FSI
8	157.61	160.51	197	RAW	.00	.00	32.87	1.13	19.84	46.16	5274.00	.34	1.50
8	157.61	160.51	197	WASH	1.60	78.00	16.57	1.50	22.48	59.45	6696.00	.41	1.50
6	202.58	203.92	198	RAW	.00	.00	37.82	1.05	19.32	41.81	4699.00	.60	1.50
6	202.58	203.92	198	WASH	1.60	53.00	10.95	1.79	23.36	63.90	7165.00	.59	2.00
Q	206.68	207.00	199	RAW	.00	.00	30.59	1.07	21.31	47.03	5452.00	.52	1.50
Q	206.68	207.00	199	WASH	1.60	68.00	17.95	1.43	23.58	57.04	6577.00	.42	1.50
Q	210.76	211.29	200	RAW	.00	.00	32.87	1.13	19.94	46.16	5274.00	.34	1.50
Q	210.76	211.29	200	WASH	1.60	64.00	16.57	1.50	22.48	59.45	6696.00	.41	1.50
5	211.69	212.08	201	RAW	.00	.00	34.14	1.07	20.46	44.33	5113.00	.40	2.00
5	211.69	212.08	201	WASH	1.60	62.00	14.16	1.40	23.98	60.64	6914.00	.53	2.00
5	217.21	217.57	202	RAW	.00	.00	24.70	1.05	24.28	49.97	5850.00	.64	2.00
5	217.21	217.57	202	WASH	1.60	76.00	16.66	1.39	24.31	57.54	6713.00	.55	2.00
2	257.74	258.12	203	RAW	.00	.00	31.81	.86	26.96	40.37	5111.00	.63	2.00
2	257.74	258.12	203	WASH	1.60	58.00	14.06	1.02	27.90	57.02	7088.00	6.10	2.50

M/D

TW82D-257

SEAM	TOP	BOT	SAMPLE	ATYP	SG	YIELD	ASH	RESMOIST	VOL	CARB	KCAL	SULF	FSI
2	27.70	28.36	283	RAW	.00	.00	20.87	.81	28.96	49.36	6231.00	2.43	-1.00
2	27.70	28.36	283	WASH	1.60	77.00	6.67	1.03	32.24	60.06	7642.00	1.81	1.00
2	29.01	30.35	284	RAW	.00	.00	14.46	.97	28.00	56.57	6922.00	1.94	-1.00
2	29.01	30.35	284	WASH	1.60	85.00	7.89	1.10	29.81	61.20	7529.00	1.48	2.00
2	33.45	34.20	285	RAW	.00	.00	17.75	1.02	26.15	55.08	6526.00	.48	-1.00
2	33.45	34.20	285	WASH	1.60	75.00	8.61	1.74	27.41	62.24	7359.00	.54	6.50

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SEAM	TOP	BOT	SAMPLE	ATYP	SG	YIELD	ASH	RESMOIST	VOL	CARB	KCAL	SULF	FSI
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8	44.80	47.44	337	RAW	.00	.00	10.32	1.19	28.74	59.75	7356.00	.91	-1.00
8	44.80	47.44	337	WASH	1.60	95.00	8.63	1.28	29.36	60.73	7479.00	.83	1.50
8	49.48	52.00	338	RAW	.00	.00	18.71	1.15	25.30	54.84	6580.00	1.67	-1.00
8	49.48	52.00	338	WASH	1.60	85.00	11.73	1.31	27.28	59.68	7188.00	.97	1.00
7	57.51	58.99	339	RAW	.00	.00	34.04	1.08	24.77	40.11	5069.00	4.00	-1.00
7	57.51	58.99	339	WASH	1.60	61.00	12.12	.94	30.71	56.23	7187.00	1.29	1.00
7	59.66	60.19	340	RAW	.00	.00	30.30	.98	21.48	47.24	5574.00	.72	-1.00
7	59.66	60.19	340	WASH	1.60	62.00	13.53	1.20	25.48	59.79	7020.00	.63	1.00
Q	61.23	61.53	341	RAW	.00	.00	27.19	1.00	21.70	50.11	5770.00	.37	-1.00
Q	61.23	61.53	341	WASH	1.60	72.00	22.34	1.61	22.54	53.51	6184.00	.40	1.00
Q	62.43	63.07	342	RAW	.00	.00	47.19	.75	23.21	28.85	.00	.37	-1.00
6	65.16	67.37	343	RAW	.00	.00	36.05	.85	24.79	38.31	5009.00	1.44	-1.00
6	65.16	67.37	343	WASH	1.60	60.00	11.53	1.71	30.22	56.54	7228.00	1.88	2.50
6	68.41	68.75	344	RAW	.00	.00	34.91	.79	22.09	42.21	5036.00	.51	-1.00
6	68.41	68.75	344	WASH	1.60	53.00	13.97	1.38	25.01	59.64	6970.00	.72	1.00
4	70.49	71.25	345	RAW	.00	.00	32.12	.90	23.53	43.45	5414.00	1.06	-1.00
4	70.49	71.25	345	WASH	1.60	61.00	14.27	1.11	28.18	56.44	7016.00	.90	1.00
3	81.05	81.48	346	RAW	.00	.00	19.70	1.10	26.43	52.77	6564.00	1.35	-1.00
3	81.05	81.48	346	WASH	1.60	73.00	10.35	1.26	28.83	59.56	7349.00	1.12	1.00
3	83.17	83.81	347	RAW	.00	.00	18.18	1.11	23.76	56.95	6538.00	.46	-1.00
3	83.17	83.81	347	WASH	1.60	78.00	11.93	1.53	25.18	61.36	7062.00	.39	1.00
2	95.32	96.13	348	RAW	.00	.00	19.65	.98	32.92	46.45	5920.00	.39	-1.00
2	95.32	96.13	348	WASH	1.60	61.00	8.28	1.31	29.35	61.06	7439.00	.46	1.50
2	96.98	98.06	349	RAW	.00	.00	23.41	.88	25.01	50.70	6069.00	.44	-1.00
2	96.98	98.06	349	WASH	1.60	75.00	8.29	1.29	26.92	63.50	7028.00	.44	2.00
2	98.70	99.15	350	RAW	.00	.00	18.46	.73	28.13	52.65	6443.00	.82	-1.00
2	98.70	99.15	350	WASH	1.60	80.00	8.54	1.26	27.40	62.80	7129.00	.86	1.00

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SEAM	TOP	BOT	SAMPLE	ATYP	SG	YIELD	ASH	RESMOIST	VOL	CARB	KCAL	SULF	FSI
7	6.84	8.94	275	RAW	.00	.00	27.71	.99	24.26	47.04	5639.00	1.12	-1.00
7	6.84	8.94	275	WASH	1.60	64.00	8.68	1.38	28.02	61.92	7388.00	.75	1.50
6	18.67	22.44	276	RAW	.00	.00	21.34	.73	25.25	52.68	6169.00	.45	-1.00
6	18.67	22.44	276	WASH	1.60	71.00	6.25	1.43	28.37	63.95	7586.00	.49	1.50
6	23.15	24.50	277	RAW	.00	.00	8.87	.69	28.39	62.05	7414.00	.67	-1.00
6	23.15	24.50	277	WASH	1.60	87.00	3.66	1.50	29.06	65.78	7829.00	.60	1.00
3	44.60	45.10	278	RAW	.00	.00	40.63	.59	21.31	37.47	4580.00	1.16	-1.00
3	44.60	45.10	278	WASH	1.60	42.00	17.70	1.30	25.11	55.89	6705.00	1.05	1.00
3	46.32	47.53	279	RAW	.00	.00	16.53	.63	25.57	57.27	6780.00	2.13	-1.00
3	46.32	47.53	279	WASH	1.60	80.00	9.32	1.23	26.96	62.49	7400.00	1.32	1.00
3	48.13	48.50	280	RAW	.00	.00	10.81	.61	26.74	61.84	7312.00	.92	-1.00
3	48.13	48.50	280	WASH	1.60	92.00	8.29	1.28	26.39	64.04	7540.00	.83	1.00
3	48.65	48.97	281	RAW	.00	.00	34.69	.86	25.78	38.67	4680.00	1.84	-1.00
3	48.65	48.97	281	WASH	1.60	46.00	12.93	1.15	27.14	58.78	7037.00	1.73	1.00
2	56.75	57.33	282	RAW	.00	.00	25.47	.84	30.53	43.16	5501.00	1.00	-1.00
2	56.75	57.33	282	WASH	1.60	57.00	9.12	1.14	30.70	59.04	7413.00	.89	2.50

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SEAM	TOP	BOT	SAMPLE	ATYP	SG	YIELD	ASH	RESMOIST	VOL	CARB	KCAL	SULF	FSI
2	21.04	21.36	327	RAW	.00	.00	23.86	.92	31.32	43.90	5547.00	.48	-1.00
2	21.04	21.36	327	WASH	1.60	62.00	11.85	1.22	30.21	56.72	7112.00	.56	4.50
2	22.65	24.66	328	RAW	.00	.00	13.89	1.23	26.63	58.25	6899.00	.37	-1.00
2	22.65	24.66	328	WASH	1.60	85.00	9.06	1.48	26.83	62.63	7374.00	.37	1.50
1	116.46	116.80	329	RAW	.00	.00	29.78	.57	32.57	37.08	5269.00	3.77	-1.00
1	116.46	116.80	329	WASH	1.60	46.00	12.07	1.01	31.85	55.07	7330.00	1.11	7.00
1	117.02	119.46	330	RAW	.00	.00	23.71	.72	27.39	48.18	6170.00	2.30	-1.00
1	117.02	119.46	330	WASH	1.60	70.00	11.25	.98	30.46	57.31	7437.00	.83	3.50
1	119.90	121.01	331	RAW	.00	.00	23.76	.82	27.06	48.36	6159.00	.32	-1.00
1	119.90	121.01	331	WASH	1.60	66.00	11.70	.93	30.40	56.97	7376.00	.33	6.00
O	125.95	126.68	332	RAW	.00	.00	30.94	.74	25.12	43.17	5387.00	.27	-1.00
Q	125.95	126.68	332	WASH	1.60	57.00	17.60	.95	27.38	54.07	6792.00	.32	3.50

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SEAM	TOP	BOT	SAMPLE	ATYP	SG	YIELD	ASH	RESMOIST	VOL	CARB	KCAL	SULF	FSI
Q	134.01	134.37	446	RAW	.00	.00	35.92	.94	22.97	40.17	4782.00	.44	1.00
Q	134.01	134.37	446	WASH	1.60	50.00	12.51	1.32	26.43	59.74	7017.00	.58	1.50
Q	134.64	134.96	447	RAW	.00	.00	37.90	1.02	21.34	39.74	4684.00	.49	2.00

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SEAM	TOP	BOT	SAMPLE	ATYP	SG	YIELD	ASH	RESMOIST	VOL	CARB	KCAL	SULF	FSI
1	67.60	72.80	333	RAW	.00	.00	13.89	1.07	.00	.00	.00	1.48	.00
1	67.60	72.80	333	WASH	1.70	93.23	9.99	3.84	29.37	56.80	7161.00	1.04	.00
1	74.09	75.85	334	RAW	.00	.00	35.90	.82	24.55	38.73	4938.00	.54	-1.00
1	74.09	75.85	334	WASH	1.60	50.00	11.44	.98	29.64	57.94	7300.00	.64	5.50
Q	79.80	80.46	335	RAW	.00	.00	37.71	.53	24.29	34.47	4616.00	.26	-1.00
Q	79.80	80.46	335	WASH	1.60	49.00	20.75	.95	26.53	51.77	6425.00	.34	1.50

TW82D-264

SEAM	TOP	BOT	SAMPLE	ATYP	SG	YIELD	ASH	RESMOIST	VOL	CARB	KCAL	SULF	FSI
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2	34.51	35.34	450	RAW	.00	.00	21.24	1.15	27.40	50.21	6200.00	.44	1.00
2	34.51	35.34	450	WASH	1.60	80.00	11.98	1.51	28.14	58.37	7104.00	.46	1.00
2	36.24	37.16	451	RAW	.00	.00	19.53	1.04	26.06	53.37	6457.00	1.19	1.00
2	36.24	37.16	451	WASH	1.60	80.00	8.83	1.48	28.56	61.13	7419.00	.79	1.00
1	185.12	187.25	452	RAW	.00	.00	35.01	.87	24.13	39.99	4985.00	2.84	2.50
1	185.12	187.25	452	WASH	1.60	52.00	12.55	1.01	28.79	57.65	7220.00	.84	3.50
Q	187.25	187.54	453	RAW	.00	.00	72.80	.86	15.09	12.25	1458.00	1.64	.00
1	187.54	187.82	454	RAW	.00	.00	33.78	.64	29.84	35.74	4643.00	1.25	3.50
1	187.54	187.82	454	WASH	1.60	42.00	17.40	.91	30.70	50.99	6749.00	1.09	5.50
1	192.46	193.38	455	RAW	.00	.00	42.71	.86	19.80	36.63	4314.00	.30	1.00
1	192.46	193.38	455	WASH	1.60	41.00	20.54	1.14	23.83	54.49	6420.00	.41	1.00

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SEAM	TOP	BOT	SAMPLE	ATYP	SG	YIELD	ASH	RESMOIST	VOL	CARB	KCAL	SULF	FSI
Q	60.93	61.60	437	RAW	.00	.00	48.71	.93	21.24	29.12	3727.00	5.12	1.00
Q	60.93	61.60	437	WASH	1.60	12.00	20.10	1.06	29.10	49.73	6437.00	4.43	5.50
Q	63.09	63.35	438	RAW	.00	.00	19.56	1.00	28.26	51.18	51.00	1.67	2.50
Q	63.09	63.35	438	WASH	1.60	76.00	8.66	1.13	30.38	59.83	751.00	1.39	3.00
3	94.57	95.04	439	RAW	.00	.00	17.66	1.01	26.01	55.32	6553.00	.76	1.00
3	94.57	95.04	439	WASH	1.60	77.00	11.20	1.28	26.15	61.37	7269.00	.53	1.00
3	96.85	97.37	440	RAW	.00	.00	26.10	.99	25.25	47.66	5898.00	3.16	1.00
3	96.85	97.37	440	WASH	1.60	71.00	11.20	1.19	28.26	59.35	7266.00	1.51	1.00
2	98.88	100.26	441	RAW	.00	.00	26.67	1.07	22.83	49.43	5815.00	5.25	1.00
2	98.88	100.26	441	WASH	1.60	66.00	10.85	1.19	25.70	62.26	7294.00	2.87	1.00
1	263.12	263.94	442	RAW	.00	.00	16.84	.97	23.46	58.73	6848.00	1.12	1.00
1	263.12	263.94	442	WASH	1.60	66.00	9.91	1.07	24.33	64.69	7467.00	1.09	1.50
1	264.30	266.56	443	RAW	.00	.00	25.99	.97	23.64	49.40	5921.00	3.29	2.00
1	264.30	266.56	443	WASH	1.60	58.00	12.22	1.15	25.61	61.02	7231.00	1.60	3.00
1	267.10	270.72	444	RAW	.00	.00	31.56	.96	22.73	44.75	5387.00	1.55	1.00
1	267.10	270.72	444	WASH	1.60	52.00	20.75	1.26	24.75	53.24	6345.00	1.01	3.00
1	275.33	275.80	445	RAW	.00	.00	35.92	.93	21.50	41.65	4798.00	.48	.50
1	275.33	275.80	445	WASH	1.60	59.00	21.73	1.38	22.95	53.94	6219.00	.57	1.50

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SEAM	TOP	BOT	SAMPLE	ATYP	SG	YIELD	ASH	RESMOIST	VOL	CARB	KCAL	SULF	FSI
1	66.60	67.37	378	RAW	.00	.00	26.59	1.15	27.00	45.26	5836.00	.56	1.20
1	66.60	67.37	378	WASH	1.60	70.00	18.73	1.64	28.30	51.33	6597.00	.56	2.00

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SEAM	TOP	BOT	SAMPLE	ATYP	SG	YIELD	ASH	RESMOIST	VOL	CARB	KCAL	SULF	FSI
Q	40.31	41.44	361	RAW	.00	.00	29.35	1.15	21.46	48.04	5491.00	.48	-1.00
Q	40.31	41.44	361	WASH	1.60	62.00	8.97	1.51	24.97	64.55	7425.00	.66	1.50
Q	59.62	60.35	362	RAW	.00	.00	21.63	.92	24.62	52.83	6322.00	4.10	-1.00
Q	59.62	60.35	362	WASH	1.60	72.00	10.98	1.03	25.80	62.19	7327.00	3.20	2.00
Q	66.20	67.26	363	RAW	.00	.00	15.34	.76	26.54	57.36	6973.00	2.30	-1.00
Q	66.20	67.26	363	WASH	1.60	45.00	9.14	1.09	27.75	62.02	7524.00	2.00	4.50
O	78.14	79.04	364	RAW	.00	.00	21.26	.81	24.34	53.59	6332.00	5.79	-1.00
O	78.14	79.04	364	WASH	1.60	75.00	9.61	1.15	24.77	64.47	7397.00	2.90	1.50
10	81.46	82.65	365	RAW	.00	.00	27.24	.83	23.44	48.49	5724.00	3.78	-1.00
10	81.46	82.65	365	WASH	1.60	62.00	10.25	1.30	25.32	63.13	7285.00	2.69	2.50
9	88.37	89.01	366	RAW	.00	.00	25.74	.80	23.57	49.89	5925.00	7.31	-1.00
9	88.37	89.01	366	WASH	1.60	59.00	10.69	1.10	25.71	62.50	7276.00	3.07	2.50
8	94.68	98.30	367	RAW	.00	.00	17.22	.93	22.52	59.33	6651.00	1.41	-1.00
8	94.68	98.30	367	WASH	1.60	81.00	10.12	1.93	23.22	64.73	7216.00	1.21	1.00
7	120.40	120.92	368	RAW	.00	.00	20.26	.86	23.58	55.30	6406.00	3.62	-1.00
7	120.40	120.92	368	WASH	1.60	75.00	9.08	1.34	24.28	65.30	7378.00	2.69	1.50
6U	126.54	128.60	369	RAW	.00	.00	18.84	.96	24.02	56.18	6486.00	.92	-1.00
6U	126.54	128.60	369	WASH	1.60	80.00	7.25	1.45	25.24	66.06	7509.00	.98	2.00
6L	130.80	136.57	370	RAW	.00	.00	13.40	1.36	23.80	61.44	6920.00	.46	-1.00
6L	130.80	136.57	370	WASH	1.60	87.00	6.84	1.82	24.46	66.88	7528.00	.41	1.00
3	141.38	142.32	371	RAW	.00	.00	9.35	.87	23.80	65.98	7478.00	1.05	-1.00
3	141.38	142.32	371	WASH	1.60	93.00	7.25	1.67	24.02	77.06	7579.00	.80	1.50
3	143.04	143.74	372	RAW	.00	.00	32.12	.73	20.79	46.36	5327.00	1.41	-1.00
3	143.04	143.74	372	WASH	1.60	53.00	13.21	1.34	22.24	63.21	7008.00	1.31	1.00
3	144.32	144.68	373	RAW	.00	.00	27.43	.61	25.19	46.77	5598.00	1.57	-1.00
3	144.32	144.68	373	WASH	1.60	63.00	15.92	.95	24.00	59.13	6825.00	1.06	2.50
3	145.19	145.49	374	RAW	.00	.00	24.47	.73	23.25	51.55	5902.00	1.87	-1.00
3	145.19	145.49	374	WASH	1.60	66.00	14.16	1.13	21.39	63.32	6998.00	1.26	1.00
3	146.37	146.68	375	RAW	.00	.00	44.08	.54	24.57	30.81	3815.00	1.43	-1.00
3	146.37	146.68	375	WASH	1.60	29.00	14.38	1.41	26.08	58.13	6956.00	2.04	4.50
2	150.67	152.77	376	RAW	.00	.00	24.60	.79	23.00	51.61	5965.00	3.22	-1.00
2	150.67	152.77	376	WASH	1.60	70.00	11.77	1.56	23.58	63.09	7196.00	1.48	1.50
2	154.56	155.81	377	RAW	.00	.00	11.26	1.36	23.53	63.85	7199.00	.48	-1.00
2	154.56	155.81	377	WASH	1.60	93.00	9.07	1.76	23.96	65.21	7370.00	.39	1.50

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SEAM	TOP	BOT	SAMPLE	ATYP	SG	YIELD	ASH	RESMOIST	VOL	CARB	KCAL	SULF	FSI
10	102.95	103.55	412	RAW	.00	.00	18.61	.81	27.25	53.33	6683.00	.41	-1.00
10	102.95	103.55	412	WASH	1.60	87.00	14.16	1.05	27.81	56.98	7057.00	.41	2.00
9	105.00	106.10	413	RAW	.00	.00	38.46	.67	23.24	37.63	4798.00	1.82	-1.00
9	105.00	106.10	413	WASH	1.60	47.00	14.29	.99	28.53	56.19	7092.00	.50	3.00
9	106.44	106.75	414	RAW	.00	.00	22.79	.58	29.24	46.81	6229.00	1.26	-1.00
9	106.44	106.75	414	WASH	1.60	67.00	10.21	1.07	32.02	56.70	7475.00	.61	8.50
8	107.58	110.48	415	RAW	.00	.00	33.07	.77	23.58	42.58	5328.00	.36	-1.00
8	107.58	110.48	415	WASH	1.60	61.00	15.14	1.29	27.61	55.96	6955.00	.43	3.50
8	110.72	112.04	416	RAW	.00	.00	42.62	.59	22.20	34.59	4499.00	1.39	-1.00
8	110.72	112.04	416	WASH	1.60	54.00	18.54	1.06	28.77	51.63	6686.00	.58	5.50
Q	115.53	115.75	417	RAW	.00	.00	56.01	.38	22.94	20.67	2699.00	.60	-1.00
Q	115.53	115.75	417	WASH	1.60	19.00	14.80	1.11	28.64	55.45	6910.00	.44	3.50
6	117.96	119.16	418	RAW	.00	.00	49.19	.58	19.24	30.99	3788.00	5.28	-1.00
6	117.96	119.16	418	WASH	1.60	40.00	14.75	.79	26.73	57.73	7012.00	4.90	1.00
6	120.68	121.05	419	RAW	.00	.00	17.80	.96	25.14	56.10	6758.00	1.83	-1.00
6	120.68	121.05	419	WASH	1.60	88.00	13.10	.94	25.90	60.06	7192.00	1.22	1.00
3	137.90	138.38	420	RAW	.00	.00	29.47	.82	24.43	45.28	5662.00	3.50	-1.00
3	137.90	138.38	420	WASH	1.60	64.00	15.78	.75	27.19	56.28	6980.00	2.67	1.00
3	139.43	140.78	421	RAW	.00	.00	13.38	.91	25.94	59.77	7081.00	1.79	-1.00
3	139.43	140.78	421	WASH	1.60	86.00	9.08	1.15	26.95	62.82	7465.00	1.12	1.00
3	141.73	142.09	422	RAW	.00	.00	16.56	.87	25.36	57.21	6758.00	1.71	-1.00
3	141.73	142.09	422	WASH	1.60	87.00	10.86	1.11	24.80	63.23	7342.00	1.16	1.00
3	142.77	143.13	423	RAW	.00	.00	30.28	.74	24.67	44.31	5321.00	1.22	-1.00
3	142.77	143.13	423	WASH	1.60	60.00	13.03	1.06	25.44	60.47	7078.00	1.10	1.00
2	148.40	148.98	424	RAW	.00	.00	37.63	.77	22.40	39.20	4882.00	3.08	-1.00
2	148.40	148.98	424	WASH	1.60	48.00	19.50	1.04	25.50	53.96	6589.00	1.64	1.00
2	151.20	151.62	425	RAW	.00	.00	17.02	.64	29.42	52.92	6737.00	2.55	-1.00
2	151.20	151.62	425	WASH	1.60	80.00	9.46	.86	29.80	59.88	7472.00	1.74	5.50
2	151.84	153.22	426	RAW	.00	.00	20.03	.86	25.51	53.60	6401.00	.48	-1.00
2	151.84	153.22	426	WASH	1.60	79.00	9.95	1.43	26.30	62.32	7486.00	.52	1.00
2	156.12	156.70	427	RAW	.00	.00	20.91	.94	23.33	54.82	6426.00	3.42	-1.00
2	156.12	156.70	427	WASH	1.60	72.00	10.80	1.20	25.76	62.24	7275.00	1.20	1.00
1	266.40	266.60	428	RAW	.00	.00	46.44	.58	21.19	31.79	4167.00	1.72	-1.00
1	266.40	266.60	428	WASH	1.60	29.00	24.72	.69	26.96	47.63	6247.00	.81	7.00
1	266.82	267.31	429	RAW	.00	.00	16.94	.52	27.23	55.31	6833.00	.69	-1.00
1	266.82	267.31	429	WASH	1.60	82.00	11.11	.95	27.64	60.30	7389.00	.63	3.50
1	267.64	268.67	430	RAW	.00	.00	19.49	.67	27.48	52.36	6657.00	1.44	-1.00
1	267.64	268.67	430	WASH	1.60	77.00	11.34	.90	29.05	58.71	7410.00	.99	5.50
1	275.97	277.88	431	RAW	.00	.00	18.73	.44	26.43	54.40	6698.00	2.33	-1.00
1	275.97	277.88	431	WASH	1.60	74.00	9.09	.88	28.40	61.63	7592.00	1.19	5.00
1	278.10	279.02	432	RAW	.00	.00	34.60	.45	24.77	40.18	5211.00	1.06	-1.00
1	278.10	279.02	432	WASH	1.60	53.00	15.39	.76	30.39	53.46	7038.00	1.25	6.00
1	279.88	281.60	433	RAW	.00	.00	27.45	.39	27.09	45.07	5683.00	1.88	-1.00
1	279.88	281.60	433	WASH	1.60	62.00	12.11	.71	28.93	58.25	7352.00	1.09	6.00
1	281.98	282.20	434	RAW	.00	.00	13.30	.33	28.69	57.68	7078.00	.90	-1.00
1	281.98	282.20	434	WASH	1.60	83.00	6.87	.99	28.06	64.08	7784.00	.90	5.00
1	283.04	284.11	435	RAW	.00	.00	27.37	1.00	24.90	46.73	5715.00	.39	-1.00
1	283.04	284.11	435	WASH	1.60	63.00	10.40	.98	27.73	60.89	7424.00	.48	5.50
Q	288.36	289.46	436	RAW	.00	.00	44.56	.92	19.84	34.68	4176.00	.26	-1.00
O	288.36	289.46	436	WASH	1.60	30.00	18.37	1.02	24.86	55.75	6664.00	.37	4.50

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SEAM	TOP	BOT	SAMPLE	ATYP	SG	YIELD	ASH	RESMOIST	VOL	CARB	KCAL	SULF	FSI
8	4.78	6.40	406	RAW	.00	.00	14.05	1.42	25.66	58.87	6864.00	.52	-1.00
8	4.78	6.40	406	WASH	.00	.00	6.64	2.11	27.01	64.24	7478.00	.50	2.00
7	20.68	21.20	407	RAW	.00	.00	40.35	1.19	21.24	37.22	4521.00	4.42	-1.00
7	20.68	21.20	407	WASH	1.60	33.00	19.55	.82	27.34,	52.29	6485.00	1.30	4.00
5	39.86	40.95	408	RAW	.00	.00	13.72	1.03	26.55	58.70	7027.00	.48	-1.00
5	39.86	40.95	408	WASH	1.60	81.00	9.41	1.22	27.62	61.75	7408.00	.37	1.00
4	46.12	49.45	409	RAW	.00	.00	12.27	.97	27.83	58.93	7198.00	.49	-1.00
4	46.12	49.45	409	WASH	1.60	80.00	7.30	1.04	29.79	61.87	7640.00	.50	3.50
2	53.21	54.74	410	RAW	.00	.00	42.05	.79	21.41	35.75	4325.00	.38	-1.00
2	53.21	54.74	410	WASH	1.60	47.00	16.88	.95	26.42	55.75	6734.00	.48	1.00
1	217.52	218.35	411	RAW	.00	.00	22.22	.78	24.99	52.01	6427.00	1.73	-1.00
1	217.52	218.35	411	WASH	1.60	76.00	16.48	.89	26.86	55.77	6956.00	.74	2.50

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SEAM	TOP	BOT	SAMPLE	ATYP	SG	YIELD	ASH	RESMOIST	VOL	CARB	KCAL	SULF	FSI
7	42.94	44.10	400	RAW	.00	.00	16.32	.78	27.26	55.64	6771.00	3.15	-1.00
7	42.94	44.10	400	WASH	1.60	81.00	8.18	.79	29.96	61.07	7544.00	1.47	2.50
6	53.95	55.80	401	RAW	.00	.00	14.69	.87	27.17	57.27	6889.00	.90	-1.00
6	53.95	55.80	401	WASH	1.60	80.00	7.89	1.04	28.39	62.68	7498.00	.76	1.00
6	59.12	59.64	402	RAW	.00	.00	32.32	.90	23.67	43.11	5300.00	.44	-1.00
6	59.12	59.64	402	WASH	1.60	56.00	3.90	.78	31.20	64.12	7897.00	.56	2.00
2	83.88	84.18	403	RAW	.00	.00	32.77	.68	20.66	45.89	5273.00	.38	-1.00
2	83.88	84.18	403	WASH	1.60	43.00	14.98	.89	24.83	59.30	6886.00	.46	1.50
2	87.43	87.90	404	RAW	.00	.00	44.57	.85	5.88	48.70	3982.00	.42	-1.00
2	87.43	87.90	404	WASH	1.60	28.00	14.19	.64	6.40	78.77	6998.00	.69	.00
2	88.08	88.84	405	RAW	.00	.00	13.35	.77	25.93	59.95	7066.00	1.05	-1.00
2	88.08	88.84	405	WASH	1.60	86.00	8.52	1.17	27.48	62.83	7463.00	.79	1.50

TW83D-301

SEAM	TOP	BOT	SAMPLE	ATYP	SG	YIELD	ASH	RESMOIST	VOL	CARB	KCAL	SULF	FSI
6	13.10	14.08	468	RAW	.00	.00	22.96	.98	.00	.00	6030.00	.44	-1.00
6	13.10	14.08	468	WASH	1.80	85.15	13.97	1.66	26.77	57.60	6785.00	.45	1.50
6	15.53	17.32	469	RAW	.00	.00	9.32	1.09	.00	.00	7340.00	1.71	-1.00
6	15.53	17.32	469	WASH	1.80	94.90	7.81	2.08	29.95	60.16	7299.00	1.14	1.00
3	32.70	33.22	470	RAW	.00	.00	21.14	.74	.00	.00	6337.00	3.43	-1.00
3	32.70	33.22	470	WASH	1.80	94.08	14.58	1.21	27.63	56.58	6902.00	2.16	1.00
3	33.97	35.20	471	RAW	.00	.00	16.03	.94	.00	.00	6757.00	1.85	-1.00
3	33.97	35.20	471	WASH	1.80	95.68	13.44	2.44	26.47	57.65	6808.00	1.50	1.00
3	36.06	36.40	472	RAW	.00	.00	13.63	.79	.00	.00	7081.00	2.34	-1.00
3	36.06	36.40	472	WASH	1.80	96.96	12.11	1.40	26.60	59.89	7096.00	1.54	.50
3	36.77	37.12	473	RAW	.00	.00	32.52	.73	.00	.00	4924.00	2.16	-1.00
3	36.77	37.12	473	WASH	1.80	68.70	21.26	1.45	26.82	50.47	6101.00	1.86	1.00
2	44.76	46.50	474	RAW	.00	.00	13.04	.88	.00	.00	6929.00	.41	-1.00
2	44.76	46.50	474	WASH	1.80	96.85	11.33	1.18	27.06	60.43	7116.00	.41	1.00

TW83D-302

SEAM	TOP	BOT	SAMPLE	ATYP	SG	YIELD	ASH	RESMOIST	VOL	CARB	KCAL	SULF	FSI
6	7.96	11.39	475	RAW	.00	.00	9.91	1.07	.00	.00	7212.00	.47	-1.00
6	7.96	11.39	475	WASH	1.80	93.73	8.76	2.88	30.01	58.35	7092.00	.42	1.00
3	24.41	24.91	476	RAW	.00	.00	20.89	.79	.00	.00	6401.00	4.61	-1.00
3	24.41	24.91	476	WASH	1.80	85.57	13.53	1.26	29.27	55.94	7016.00	2.40	1.00
3	25.56	26.48	477	RAW	.00	.00	24.54	.83	.00	.00	5842.00	1.92	-1.00
3	25.56	26.48	477	WASH	1.80	88.37	16.35	2.23	25.88	55.54	6615.00	1.30	1.00
3	28.27	29.27	478	RAW	.00	.00	31.09	1.04	.00	.00	5401.00	2.17	-1.00
3	28.27	29.27	478	WASH	1.80	66.16	14.91	2.05	26.97	56.07	6797.00	1.79	1.00
Q	32.27	32.68	479	RAW	.00	.00	23.28	.85	.00	.00	6032.00	1.05	-1.00
Q	32.27	32.68	479	WASH	1.80	87.35	17.17	1.74	27.79	53.30	6576.00	.92	.50

TW83D-303

SEAM	TOP	BOT	SAMPLE	ATYP	SG	YIELD	ASH	RESMOIST	VOL	CARB	KCAL	SULF	FSI
3	11.41	11.97	480	RAW	.00	.00	19.14	.70	.00	.00	6566.00	5.39	-1.00
3	11.41	11.97	480	WASH	1.80	90.54	14.86	1.57	27.27	56.30	6848.00	2.18	.50
3	12.96	14.11	481	RAW	.00	.00	27.43	1.14	.00	.00	5761.00	2.40	-1.00
3	12.96	14.11	481	WASH	1.80	83.17	17.07	2.10	24.91	55.92	6565.00	1.62	1.00
3	14.47	14.54	482	RAW	.00	.00	76.39	1.16	.00	.00	1308.00	1.67	-1.00
3	14.47	14.54	482	WASH	1.80	9.75	34.73	1.04	26.60	37.63	4821.00	1.43	1.00
3	14.69	14.84	483	RAW	.00	.00	32.93	.72	.00	.00	4920.00	2.21	-1.00
3	14.69	14.84	483	WASH	1.80	69.40	22.69	1.48	26.97	48.86	6021.00	1.89	1.00
2	26.08	30.36	484	RAW	.00	.00	16.94	.88	.00	.00	6758.00	.44	-1.00
2	26.08	30.36	484	WASH	1.80	90.28	9.44	2.02	27.73	60.81	7350.00	.45	.50

TW83D-304

SEAM	TOP	BOT	SAMPLE	ATYP	SG	YIELD	ASH	RESMOIST	VOL	CARB	KCAL	SULF	FSI
6	5.00	6.00	485	RAW	.00	.00	10.14	.83	.00	.00	7295.00	.50	-1.00
6	5.00	6.00	485	WASH	1.80	98.81	8.27	2.98	27.79	60.96	7273.00	.49	1.00
6	7.28	9.21	486	RAW	.00	.00	6.91	1.30	.00	.00	7440.00	2.67	-1.00
6	7.28	9.21	486	WASH	1.80	97.80	5.59	2.06	29.20	63.15	7649.00	.89	1.50
3	25.62	26.08	487	RAW	.00	.00	18.96	.65	.00	.00	6623.00	2.45	-1.00
3	25.62	26.08	487	WASH	1.80	94.18	17.12	2.35	24.65	55.88	6630.00	2.09	1.00
3	26.91	28.00	488	RAW	.00	.00	21.44	.70	.00	.00	6312.00	2.62	-1.00
3	26.91	28.00	488	WASH	1.80	88.89	15.25	2.06	24.84	57.85	6771.00	2.00	1.00
3	28.98	29.30	489	RAW	.00	.00	19.56	.64	.00	.00	6585.00	1.28	-1.00
3	28.98	29.30	489	WASH	1.80	90.60	15.02	2.43	25.28	57.27	6852.00	1.22	1.00
Q	29.30	29.66	490	RAW	.00	.00	84.65	1.32	.00	.00	596.00	2.69	-1.00
Q	29.30	29.66	490	WASH	1.80	1.61	31.39	1.78	25.61	41.22	5355.00	3.29	3.00
3	29.62	29.94	491	RAW	.00	.00	35.18	.79	.00	.00	4853.00	2.25	-1.00
3	29.62	29.94	491	WASH	1.80	70.53	21.29	2.19	26.01	50.51	6138.00	2.03	1.00
Q	33.81	34.48	492	RAW	.00	.00	66.42	1.15	.00	.00	2077.00	2.73	-1.00
Q	33.81	34.48	492	WASH	1.80	20.58	28.73	1.80	25.99	43.48	5571.00	2.98	1.00
2	37.70	39.74	493	RAW	.00	.00	14.78	.92	.00	.00	6849.00	1.88	-1.00
2	37.70	39.74	493	WASH	1.80	92.49	9.31	2.10	28.71	59.88	7384.00	.49	.50
2	40.08	40.74	494	RAW	.00	.00	12.21	.89	.00	.00	7109.00	.68	-1.00
2	40.08	40.74	494	WASH	1.80	96.20	10.07	2.73	26.57	60.63	7229.00	.61	1.00

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SEAM	TOP	BOT	SAMPLE	ATYP	SG	YIELD	ASH	RESMOIST	VOL	CARB	KCAL	SULF	FSI
6	13.76	18.70	495	RAW	.00	.00	38.96	1.14	.00	.00	4675.00	.45	-1.00
6	13.76	18.70	495	WASH	1.80	58.88	10.95	2.54	26.45	60.06	7030.00	.53	1.50
3	29.16	30.07	496	RAW	.00	.00	32.06	.79	.00	.00	5288.00	3.16	-1.00
3	29.16	30.07	496	WASH	1.80	73.38	17.58	2.78	23.11	56.53	6587.00	1.45	1.00
Q	34.85	35.20	497	RAW	.00	.00	37.68	.85	.00	.00	4972.00	2.83	-1.00
Q	34.85	35.20	497	WASH	1.80	73.41	30.59	1.63	20.74	47.04	5576.00	2.10	1.00
2	46.98	52.26	498	RAW	.00	.00	16.01	1.22	.00	.00	6789.00	.66	-1.00
2	46.98	52.26	498	WASH	1.80	91.19	9.83	3.57	26.93	59.67	7158.00	.62	1.50

TW83D-306

SEAM	TOP	BOT	SAMPLE	ATYP	SG	YIELD	ASH	RESMOIST	VOL	CARB	KCAL	SULF	FSI
8	9.60	10.56	499	RAW	.00	.00	12.16	1.24	.00	.00	7159.00	1.13	-1.00
8	9.60	10.56	499	WASH	1.80	98.31	9.50	1.88	29.32	59.30	7288.00	1.18	1.00
7	26.46	27.02	500	RAW	.00	.00	11.67	1.18	.00	.00	7206.00	1.32	-1.00
7	26.46	27.02	500	WASH	1.80	97.31	11.02	2.47	28.84	57.67	7079.00	1.28	1.00
6	31.40	32.21	501	RAW	.00	.00	14.92	1.20	.00	.00	6859.00	2.40	-1.00
6	31.40	32.21	501	WASH	1.80	95.73	11.73	2.69	27.58	58.00	6987.00	1.66	1.00
6	33.28	34.44	502	RAW	.00	.00	13.34	1.20	.00	.00	7050.00	1.93	-1.00
6	33.28	34.44	502	WASH	1.80	92.69	9.68	2.75	28.81	58.76	7178.00	1.44	1.00
6	39.85	41.15	503	RAW	.00	.00	13.40	1.26	.00	.00	6893.00	1.15	-1.00
6	39.85	41.15	503	WASH	1.80	86.96	6.06	2.33	30.71	60.09	7513.00	.71	.50
3	58.00	58.46	504	RAW	.00	.00	15.97	1.14	.00	.00	6872.00	1.83	-1.00
3	58.00	58.46	504	WASH	1.80	95.49	14.73	2.41	27.76	55.10	6829.00	1.52	1.00
3	58.84	60.05	505	RAW	.00	.00	18.02	1.19	.00	.00	6608.00	2.79	-1.00
3	58.84	60.05	505	WASH	1.80	91.23	11.81	3.34	26.06	58.25	6966.00	1.22	.50
3	61.12	61.40	506	RAW	.00	.00	19.24	1.01	.00	.00	6554.00	3.92	-1.00
3	61.12	61.40	506	WASH	1.80	90.18	13.89	2.24	26.39	57.48	6954.00	2.32	.50
Q	66.86	67.46	507	RAW	.00	.00	46.72	1.06	.00	.00	3829.00	4.60	-1.00
Q	66.86	67.46	507	WASH	1.80	51.26	27.79	1.68	27.02	43.51	5720.00	2.64	1.00
2	69.65	72.59	508	RAW	.00	.00	11.65	1.34	.00	.00	7164.00	.61	-1.00
2	69.65	72.59	508	WASH	1.80	96.57	10.92	3.11	26.75	59.22	7018.00	.47	1.00

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SEAM	TOP	BOT	SAMPLE	ATYP	SG	YIELD	ASH	RESMOIST	VOL	CARB	KCAL	SULF	FSI
10	22.17	23.09	509	RAW	.00	.00	8.83	1.06	.00	.00	7480.00	3.15	-1.00
10	22.17	23.09	509	WASH	1.80	98.89	8.80	1.97	31.41	57.82	7399.00	2.96	2.00
9	34.09	35.18	510	RAW	.00	.00	10.90	1.04	.00	.00	7338.00	2.64	-1.00
9	34.09	35.18	510	WASH	.00	.00	10.25	1.91	32.87	54.97	7317.00	2.19	4.50
8	37.02	39.46	511	RAW	.00	.00	15.87	1.37	.00	.00	6746.00	1.07	-1.00
8	37.02	39.46	511	WASH	1.80	94.06	9.45	2.13	29.63	58.79	7260.00	.93	1.00
7	54.54	55.66	512	RAW	.00	.00	10.40	1.08	.00	.00	7354.00	1.81	-1.00
7	54.54	55.66	512	WASH	1.80	96.84	9.05	2.23	30.32	58.40	7336.00	1.66	1.00
6	58.47	58.77	513	RAW	.00	.00	9.21	1.02	.00	.00	7517.00	2.08	-1.00
6	58.47	58.77	513	WASH	1.80	97.36	7.26	1.83	30.42	60.49	7588.00	1.26	1.00
6	59.11	59.41	514	RAW	.00	.00	14.82	1.07	.00	.00	6999.00	2.73	-1.00
6	59.11	59.41	514	WASH	1.80	89.93	9.97	1.63	28.83	59.57	7339.00	1.48	1.00
6	59.76	60.52	515	RAW	.00	.00	30.51	1.03	.00	.00	5352.00	10.73	-1.00
6	59.76	60.52	515	WASH	1.80	77.34	14.87	2.13	26.83	56.17	6799.00	1.54	1.00
6	61.01	62.52	516	RAW	.00	.00	14.84	1.28	.00	.00	6808.00	.86	-1.00
6	61.01	62.52	516	WASH	1.80	86.30	8.12	2.34	29.73	59.81	7299.00	.61	1.00
5	73.31	76.13	517	RAW	.00	.00	14.38	1.33	.00	.00	6920.00	.78	-1.00
5	73.31	76.13	517	WASH	1.80	93.19	8.50	2.85	28.46	60.19	7283.00	.52	1.00
4	78.73	80.36	518	RAW	.00	.00	10.58	1.30	.00	.00	7248.00	1.78	-1.00
4	78.73	80.36	518	WASH	1.80	96.22	8.97	2.97	28.84	59.22	7174.00	.70	1.00
3	86.07	86.82	519	RAW	.00	.00	22.97	1.05	.00	.00	5675.00	.38	-1.00
3	86.07	86.82	519	WASH	1.80	86.91	7.21	1.63	34.87	56.29	7648.00	1.49	4.50
3	87.36	90.14	520	RAW	.00	.00	21.69	1.21	.00	.00	6124.00	.53	-1.00
3	87.36	90.14	520	WASH	.00	.00	7.21	1.82	32.62	58.35	7614.00	2.45	2.00
Q	90.67	91.31	521	RAW	.00	.00	38.95	.89	.00	.00	4742.00	2.85	-1.00
Q	90.67	91.31	521	WASH	1.80	65.06	14.94	1.61	30.34	53.11	6837.00	.67	4.50
2	92.61	94.35	522	RAW	.00	.00	22.26	.89	.00	.00	6101.00	.66	-1.00
2	92.61	94.35	522	WASH	1.80	84.17	24.74	1.26	27.48	46.52	6099.00	2.28	1.00

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SEAM	TOP	BOT	SAMPLE	ATYP	SG	YIELD	ASH	RESMOIST	VOL	CARB	KCAL	SULF	FSI
10	14.37	15.24	523	RAW	.00	.00	7.49	.77	.00	.00	7617.00	2.42	-1.00
10	14.37	15.24	523	WASH	1.80	98.60	7.26	1.62	32.71	58.41	7663.00	2.35	3.50
9	21.43	22.71	524	RAW	.00	.00	9.95	.82	.00	.00	7459.00	2.18	-1.00
9	21.43	22.71	524	WASH	1.80	95.25	8.46	1.61	33.45	56.49	7531.00	1.89	5.00
8	24.67	27.24	525	RAW	.00	.00	14.08	1.11	.00	.00	6945.00	3.28	-1.00
8	24.67	27.24	525	WASH	1.80	92.59	9.16	3.14	28.65	59.05	7195.00	1.38	.50
7	46.92	48.42	526	RAW	.00	.00	14.38	1.10	.00	.00	6938.00	1.57	-1.00
7	46.92	48.42	526	WASH	1.80	91.50	11.13	2.67	29.04	57.16	7054.00	1.39	2.50
7	50.91	52.32	527	RAW	.00	.00	19.62	.95	.00	.00	6445.00	2.23	-1.00
7	50.91	52.32	527	WASH	1.80	88.55	11.22	2.80	28.25	57.73	7038.00	2.03	.50
6	59.02	59.37	528	RAW	.00	.00	13.73	.78	.00	.00	7160.00	1.27	-1.00
6	59.02	59.37	528	WASH	1.80	81.73	8.19	2.11	30.02	59.68	7484.00	1.17	1.00
6	59.92	62.84	529	RAW	.00	.00	14.24	1.03	.00	.00	6953.00	1.31	-1.00
6	59.92	62.84	529	WASH	1.80	86.25	9.18	3.09	28.00	59.73	7225.00	1.31	.50
5	72.87	76.12	530	RAW	.00	.00	13.27	1.91	.00	.00	6887.00	.50	-1.00
5	72.87	76.12	530	WASH	1.80	82.85	6.83	3.36	29.65	60.16	7391.00	.54	.50
4	79.51	81.12	531	RAW	.00	.00	23.09	.82	.00	.00	5268.00	.39	-1.00
4	79.51	81.12	531	WASH	1.80	64.70	13.73	1.41	32.13	52.73	6571.00	.48	1.00
3	83.34	84.42	532	RAW	.00	.00	19.75	1.11	.00	.00	6428.00	.43	-1.00
3	83.34	84.42	532	WASH	1.80	95.91	16.02	1.69	27.32	54.97	6667.00	.42	.50
2	86.00	86.22	533	RAW	.00	.00	33.35	.95	.00	.00	.00	.75	-1.00
2	86.00	86.22	533	WASH	1.80	81.56	25.38	1.40	26.98	46.24	5786.00	.76	1.00
2	86.64	87.20	534	RAW	.00	.00	14.65	1.04	.00	.00	6879.00	1.31	-1.00
2	86.64	87.20	534	WASH	1.80	91.62	11.69	1.73	29.99	56.59	7092.00	1.20	1.00

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SEAM	TOP	BOT	SAMPLE	ATYP	SG	YIELD	ASH	RESMOIST	VOL	CARB	KCAL	SULF	FSI
7	8.90	9.74	535	RAW	.00	.00	13.51	2.05	.00	.00	6961.00	2.46	-1.00
7	8.90	9.74	535	WASH	1.80	97.00	11.65	1.42	28.71	58.22	7096.00	2.32	.50
7	11.88	12.90	536	RAW	.00	.00	14.94	1.88	.00	.00	6778.00	1.10	-1.00
7	11.88	12.90	536	WASH	1.80	88.78	9.50	1.40	31.65	57.45	7264.00	1.11	.50
6	24.14	26.32	537	RAW	.00	.00	15.87	1.24	.00	.00	6704.00	.49	-1.00
6	24.14	26.32	537	WASH	1.80	88.63	10.38	1.60	29.62	58.40	7139.00	.50	1.00
6	27.36	29.02	538	RAW	.00	.00	8.84	1.23	.00	.00	7370.00	1.78	-1.00
6	27.36	29.02	538	WASH	1.80	95.76	6.45	2.10	30.24	61.21	.00	1.11	.50
3	45.32	45.74	539	RAW	.00	.00	19.39	.99	.00	.00	6522.00	2.46	-1.00
3	45.32	45.74	539	WASH	1.80	96.93	15.65	1.35	28.33	54.67	6786.00	2.16	1.00
3	46.87	47.98	540	RAW	.00	.00	18.81	1.07	.00	.00	6280.00	.91	-1.00
3	46.87	47.98	540	WASH	1.80	85.98	12.98	2.02	28.32	56.68	6868.00	.78	.50
3	49.44	49.77	541	WASH	1.80	58.28	27.73	1.36	28.25	42.66	5491.00	2.81	1.00
3	49.44	49.77	541	RAW	.00	.00	38.13	.94	.00	.00	4337.00	2.77	-1.00
2	56.18	60.60	542	RAW	.00	.00	17.09	1.12	.00	.00	6617.00	.47	-1.00
2	56.18	60.60	542	WASH	1.80	91.47	12.42	1.58	29.08	56.92	7026.00	.49	.50
2	60.78	61.44	543	RAW	.00	.00	9.93	1.22	.00	.00	7258.00	.56	-1.00
2	60.78	61.44	543	WASH	1.80	96.75	9.64	1.37	29.27	59.72	7290.00	.55	1.00

TW83D-310

SEAM	TOP	BOT	SAMPLE	ATYP	SG	YIELD	ASH	RESMOIST	VOL	CARB	KCAL	SULF	FSI
10	9.06	10.09	544	RAW	.00	.00	12.72	1.43	.00	.00	7117.00	3.02	-1.00
10	9.06	10.09	544	WASH	1.80	94.05	10.62	1.23	34.22	53.93	7315.00	2.55	-1.00
9	17.28	18.32	545	RAW	.00	.00	12.89	1.10	.00	.00	.00	1.95	-1.00
9	17.28	18.32	545	WASH	1.70	93.34	8.71	1.53	34.08	55.68	7420.00	1.57	-1.00
8	20.20	22.56	546	RAW	.00	.00	12.98	1.53	.00	.00	.00	1.40	-1.00
8	20.20	22.56	546	WASH	1.70	92.66	8.26	2.55	30.03	59.16	7284.00	.90	-1.00
7	41.24	42.48	547	RAW	.00	.00	20.32	1.45	.00	.00	.00	1.74	-1.00
7	41.24	42.48	547	WASH	1.70	82.81	9.88	2.21	30.19	57.72	7190.00	1.33	-1.00
6	48.61	49.32	548	RAW	.00	.00	36.59	1.38	.00	.00	.00	2.63	-1.00
6	48.61	49.32	548	WASH	1.70	66.57	14.60	1.39	28.32	55.69	6817.00	2.95	-1.00
6	50.38	52.16	549	RAW	.00	.00	35.80	1.39	.00	.00	.00	1.35	-1.00
6	50.38	52.16	549	WASH	1.70	59.90	13.52	2.23	26.77	57.48	6832.00	1.12	-1.00
6	52.60	54.16	550	RAW	.00	.00	21.23	1.25	.00	.00	.00	.83	-1.00
6.	52.60	54.16	550	WASH	1.70	83.04	9.77	2.36	30.07	57.80	7165.00	.58	-1.00
3	71.46	71.93	551	RAW	.00	.00	30.60	.92	.00	.00	.00	2.83	-1.00
3	71.46	71.93	551	WASH	1.70	64.63	25.34	1.49	27.09	46.08	5948.00	1.06	-1.00
3	74.49	74.86	552	RAW	.00	.00	49.27	1.28	.00	.00	.00	.27	-1.00
3	74.49	74.86	552	WASH	1.70	41.96	17.46	1.90	28.03	52.61	6545.00	.25	-1.00
2	77.16	79.49	553	RAW	.00	.00	23.43	1.32	.00	.00	.00	.43	-1.00
2	77.16	79.49	553	WASH	1.70	81.32	13.13	2.39	29.58	54.90	6899.00	.41	-1.00
2	79.83	80.90	554	RAW	.00	.00	23.93	1.31	.00	.00	.00	.43	-1.00
2	79.83	80.90	554	WASH	1.70	81.56	11.74	3.88	26.19	58.19	6955.00	.26	-1.00

TW83D-311

SEAM	TOP	BOT	SAMPLE	ATYP	SG	YIELD	ASH	RESMOIST	VOL	CARB	KCAL	SULF	FSI
9	11.72	12.72	555	RAW	.00	.00	9.48	1.42	.00	.00	7414.00	1.67	-1.00
9	11.72	12.72	555	WASH	1.80	98.41	9.54	1.56	33.81	55.09	7401.00	1.65	-1.00
8	14.10	16.59	556	RAW	.00	.00	10.32	2.98	.00	.00	7160.00	1.05	-1.00
8	14.10	16.59	556	WASH	1.80	95.88	9.77	2.16	29.42	58.65	7199.00	.97	-1.00

TW83D-312

SEAM	TOP	BOT	SAMPLE	ATYP	SG	YIELD	ASH	RESMOIST	VOL	CARB	KCAL	SULF	FSI
3	18.74	19.21	557	RAW	.00	.00	17.53	1.09	.00	.00	.00	2.86	-1.00
3	18.74	19.21	557	WASH	1.70	92.43	14.65	1.60	26.40	57.35	6887.00	1.14	-1.00
3	19.98	20.90	558	RAW	.00	.00	14.07	1.22	.00	.00	.00	1.23	-1.00
3	19.98	20.90	558	WASH	1.70	95.94	12.55	1.72	26.56	59.17	7038.00	1.04	-1.00
3	23.08	23.42	559	RAW	.00	.00	33.48	1.19	.00	.00	.00	1.31	-1.00
3	23.08	23.42	559	WASH	1.70	60.14	19.37	1.59	25.54	53.50	6455.00	1.66	-1.00
Q	27.57	27.87	560	RAW	.00	.00	26.41	1.12	.00	.00	.00	3.01	-1.00
Q	27.57	27.87	560	WASH	1.70	79.72	20.71	1.25	28.85	49.19	6334.00	1.89	-1.00

TW83D-313

SEAM	TOP	BOT	SAMPLE	ATYP	SG	YIELD	ASH	RESMOIST	VOL	CARB	KCAL	SULF	FSI
7	6.55	7.83	561	RAW	.00	.00	12.34	1.61	.00	.00	.00	.48	-1.00
7	6.55	7.83	561	WASH	1.70	92.15	8.25	1.95	29.58	60.22	7234.00	.47	-1.00
7	9.40	11.38	562	RAW	.00	.00	6.25	1.60	.00	.00	.00	.99	-1.00
7	9.40	11.38	562	WASH	1.70	96.43	4.71	2.67	30.63	61.99	7398.00	.83	-1.00
6	17.62	19.12	563	RAW	.00	.00	15.16	1.21	.00	.00	.00	.59	-1.00
6	17.62	19.12	563	WASH	1.70	93.92	11.56	2.59	27.79	58.06	7034.00	.30	-1.00
6	19.29	21.28	564	RAW	.00	.00	13.20	1.22	.00	.00	.00	1.86	-1.00
6	19.29	21.28	564	WASH	1.70	88.90	7.68	3.44	29.11	59.77	7267.00	.44	-1.00
3	35.20	35.52	565	RAW	.00	.00	25.54	1.09	.00	.00	.00	3.33	-1.00
3	35.20	35.52	565	WASH	1.70	81.50	14.19	1.71	26.06	58.04	6938.00	1.30	-1.00
Q	41.42	41.78	566	RAW	.00	.00	33.63	.95	.00	.00	.00	1.51	-1.00
Q	41.42	41.78	566	WASH	1.70	78.04	28.59	1.33	27.97	42.10	5714.00	.75	-1.00
3	44.60	46.56	567	RAW	.00	.00	15.19	1.19	.00	.00	.00	1.77	-1.00
3	44.60	46.56	567	WASH	1.70	84.11	10.86	1.47	35.27	52.40	7289.00	.77	-1.00
3	47.03	47.26	568	RAW	.00	.00	36.04	1.19	.00	.00	.00	1.83	-1.00
3	47.03	47.26	568	WASH	1.70	57.63	17.62	1.80	31.97	48.61	6631.00	.89	-1.00
2	51.96	53.00	569	RAW	.00	.00	26.85	1.23	.00	.00	.00	1.14	-1.00
2	51.96	53.00	569	WASH	1.70	79.58	16.64	2.28	26.95	54.13	6670.00	.46	-1.00
2	53.94	57.80	570	RAW	.00	.00	18.89	1.39	.00	.00	.00	.56	-1.00
2	53.94	57.80	570	WASH	1.70	85.41	9.85	3.07	27.47	59.61	7141.00	.24	-1.00

TW83D-314

SEAM	TOP	BOT	SAMPLE	ATYP	SG	YIELD	ASH	RESMOIST	VOL	CARB	KCAL	SULF	FSI
7	32.32	33.22	571	RAW	.00	.00	20.83	.91	.00	.00	.00	6.23	-1.00
7	32.32	33.22	571	WASH	1.70	80.01	12.64	1.26	29.95	56.15	7084.00	3.75	-1.00
7	38.80	39.32	572	RAW	.00	.00	22.60	.82	.00	.00	.00	1.96	-1.00
7	38.80	39.32	572	WASH	1.70	69.46	12.79	1.42	27.21	58.58	7031.00	1.04	-1.00
3	40.47	41.08	573	RAW	.00	.00	48.61	1.12	.00	.00	.00	1.95	-1.00
3	40.47	41.08	573	WASH	1.70	35.71	13.71	1.37	30.51	54.41	6984.00	1.81	-1.00
6	47.68	51.76	574	RAW	.00	.00	25.54	1.26	.00	.00	.00	.56	-1.00
6	47.68	51.76	574	WASH	1.70	74.05	11.46	2.32	29.83	56.39	7023.00	.61	-1.00

TW83D-315

SEAM	TOP	BOT	SAMPLE	ATYP	SG	YIELD	ASH	RESMOIST	VOL	CARB	KCAL	SULF	FSI
Q	44.30	44.60	575	RAW	.00	.00	20.33	1.06	.00	.00	.00	3.26	-1.00
Q	44.30	44.60	575	WASH	1.70	82.92	12.56	1.32	30.82	55.30	7106.00	2.80	-1.00
7	55.62	56.40	576	RAW	.00	.00	20.76	1.17	.00	.00	.00	1.46	-1.00
7	55.62	56.40	576	WASH	1.70	80.80	10.05	2.67	28.67	58.61	7226.00	1.34	-1.00
6	63.84	66.42	577	RAW	.00	.00	24.09	.97	.00	.00	.00	.93	-1.00
6	63.84	66.42	577	WASH	1.70	74.54	11.03	3.17	28.98	56.82	7083.00	.58	-1.00

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TW83D-316

SEAM	TOP	BOT	SAMPLE	ATYP	SG	YIELD	ASH	RESMOIST	VOL	CARB	KCAL	SULF	FSI
10	11.60	12.52	578	RAW	.00	.00	9.27	1.11	.00	.00	.00	2.93	-1.00
10	11.60	12.52	578	WASH	1.70	95.86	7.51	1.69	33.19	57.61	7529.00	2.02	-1.00
8	24.22	26.80	579	RAW	.00	.00	12.37	1.13	.00	.00	.00	2.76	-1.00
8	24.22	26.80	579	WASH	1.70	91.40	8.78	2.08	29.44	59.70	7390.00	.94	-1.00
7	48.75	50.06	580	RAW	.00	.00	16.34	1.52	.00	.00	.00	2.16	-1.00
7	48.75	50.06	580	WASH	1.70	89.03	11.10	3.39	28.34	57.17	7029.00	.74	-1.00
7	54.27	54.72	581	RAW	.00	.00	26.42	1.14	.00	.00	.00	2.02	-1.00
7	54.27	54.72	581	WASH	1.70	79.97	14.80	1.79	28.47	54.94	6976.00	.84	-1.00
7	56.72	57.35	582	RAW	.00	.00	12.64	1.13	.00	.00	.00	1.93	-1.00
7	56.72	57.35	582	WASH	1.70	92.72	10.07	1.83	27.10	61.00	7226.00	.76	-1.00
7	61.38	62.56	583	RAW	.00	.00	12.24	1.22	.00	.00	.00	1.66	-1.00
7	61.38	62.56	583	WASH	1.70	91.67	10.44	1.68	29.13	58.75	7281.00	.80	-1.00
6	69.88	72.70	584	RAW	.00	.00	11.55	1.72	.00	.00	.00	.44	-1.00
6	69.88	72.70	584	WASH	1.70	92.73	7.89	2.37	30.04	59.70	7456.00	.24	-1.00
6	73.58	75.49	585	RAW	.00	.00	8.65	2.26	.00	.00	.00	.43	-1.00
6	73.58	75.49	585	WASH	1.70	95.29	7.80	2.33	28.95	60.92	7407.00	.21	-1.00

TW83D-317

SEAM	TOP	BOT	SAMPLE	ATYP	SG	YIELD	ASH	RESMOIST	VOL	CARB	KCAL	SULF	FSI
10	56.00	56.58	605	RAW	.00	.00	12.95	1.18	.00	.00	.00	2.21	-1.00
10	56.00	56.58	605	WASH	1.70	95.55	10.92	1.09	30.82	57.17	7348.00	1.14	-1.00
9	72.76	73.19	606	RAW	.00	.00	52.46	1.64	.00	.00	.00	4.15	-1.00
9	72.76	73.19	606	WASH	1.70	39.48	14.98	1.13	27.30	56.59	6843.00	3.26	-1.00
8	74.16	74.80	607	RAW	.00	.00	28.84	1.59	.00	.00	.00	10.81	-1.00
8	74.16	74.80	607	WASH	1.70	67.28	12.08	1.89	28.02	58.01	7009.00	2.81	-1.00
7	91.92	92.79	608	RAW	.00	.00	34.63	1.16	.00	.00	.00	7.56	-1.00
7	91.92	92.79	608	WASH	1.70	67.06	15.08	2.05	26.75	56.12	6828.00	.92	-1.00
7	102.97	103.50	609	RAW	.00	.00	9.86	1.27	.00	.00	.00	1.40	-1.00
7	102.97	103.50	609	WASH	1.70	98.04	8.91	2.17	27.36	61.56	7366.00	.62	-1.00

TW83D-318

SEAM	TOP	BOT	SAMPLE	ATYP	SG	YIELD	ASH	RESMOIST	VOL	CARB	KCAL	SULF	FSI
1	89.73	91.97	600	RAW	.00	.00	10.28	1.27	.00	.00	.00	1.38	-1.00
1	89.73	91.97	600	WASH	1.70	93.54	7.20	1.34	29.61	61.85	7647.00	.49	-1.00
1	92.28	95.06	601	RAW	.00	.00	14.53	1.18	.00	.00	.00	1.38	-1.00
1	92.28	95.06	601	WASH	1.70	90.12	10.78	1.31	29.13	58.78	7238.00	.51	-1.00
1	97.18	98.32	602	RAW	.00	.00	21.52	1.36	.00	.00	.00	.35	-1.00
1	97.18	98.32	602	WASH	1.70	82.48	15.34	1.62	28.60	54.44	6763.00	.19	-1.00
1	103.22	103.94	603	RAW	.00	.00	34.57	.93	.00	.00	.00	.32	-1.00
1	103.22	103.94	603	WASH	1.70	69.68	23.36	1.42	25.35	49.87	6060.00	.19	-1.00
1	108.68	109.54	604	RAW	.00	.00	55.81	1.16	.00	.00	.00	.18	-1.00
1	108.68	109.54	604	WASH	1.70	27.33	32.29	1.31	23.52	42.88	5208.00	.16	-1.00

TW83D-319

SEAM	TOP	BOT	SAMPLE	ATYP	SG	YIELD	ASH	RESMOIST	VOL	CARB	KCAL	SULF	FSI
10	5.20	6.24	586	RAW	.00	.00	13.51	1.03	.00	.00	.00	3.06	-1.00
10	5.20	6.24	586	WASH	1.70	92.95	9.63	1.13	32.87	56.37	7428.00	1.47	-1.00
9	12.83	14.40	587	RAW	.00	.00	10.18	.96	.00	.00	.00	2.87	-1.00
9	12.83	14.40	587	WASH	1.70	92.65	6.81	1.03	34.86	57.30	7663.00	.86	-1.00
8	15.36	17.74	588	RAW	.00	.00	13.51	1.17	.00	.00	.00	1.68	-1.00
8	15.36	17.74	588	WASH	1.70	90.20	8.18	1.77	31.41	58.64	7425.00	.64	-1.00
7	37.56	38.84	589	RAW	.00	.00	16.94	1.20	.00	.00	.00	1.30	-1.00
7	37.56	38.84	589	WASH	1.70	88.01	9.81	1.61	30.51	58.07	7285.00	.57	-1.00
6	42.79	43.09	590	RAW	.00	.00	24.53	1.01	.00	.00	.00	4.01	-1.00
6	42.79	43.09	590	WASH	1.70	79.23	13.07	.95	29.54	56.44	7112.00	1.59	-1.00
6	43.76	44.16	591	RAW	.00	.00	60.94	1.13	.00	.00	.00	2.44	-1.00
6	43.76	44.16	591	WASH	1.70	18.45	17.34	1.19	25.30	56.17	6554.00	1.03	-1.00
3	52.60	55.21	592	RAW	.00	.00	11.33	1.03	.00	.00	.00	.46	-1.00
3	52.60	55.21	592	WASH	1.70	88.30	4.34	1.57	31.83	62.26	7790.00	.25	-1.00
3	55.39	55.68	593	RAW	.00	.00	26.63	1.06	.00	.00	.00	2.58	-1.00
3	55.39	55.68	593	WASH	1.70	76.44	20.01	.98	25.52	53.49	6447.00	1.24	-1.00
2	57.43	61.26	594	RAW	.00	.00	16.01	1.63	.00	.00	.00	.51	-1.00
2	57.43	61.26	594	WASH	1.70	87.40	10.02	2.61	29.09	8.28	7146.00	.24	-1.00

TW83D-320

SEAM	TOP	BOT	SAMPLE	ATYP	SG	YIELD	ASH	RESMOIST	VOL	CARB	KCAL	SULF	FSI
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7	85.28	85.72	610	RAW	.00	.00	36.58	1.06	.00	.00	.00	1.68	-1.00
7	85.28	85.72	610	WASH	1.70	63.39	25.42	1.55	26.01	47.02	6028.00	.97	-1.00
7	86.75	87.84	611	RAW	.00	.00	11.94	1.19	.00	.00	.00	.76	-1.00
7	86.75	87.84	611	WASH	1.70	98.03	10.17	4.19	27.19	58.45	7139.00	.32	-1.00
Q	87.84	88.13	612	RAW	.00	.00	83.02	1.89	.00	.00	.00	3.90	-1.00
Q	87.84	88.13	612	WASH	1.70	1.81	14.00	2.24	26.56	57.20	6732.00	1.70	-1.00
7	88.13	88.36	613	RAW	.00	.00	22.36	.89	.00	.00	.00	.89	-1.00
7	88.13	88.36	613	WASH	1.70	71.88	12.65	2.44	26.01	58.90	7032.00	.44	-1.00
7	89.19	89.58	614	RAW	.00	.00	32.87	1.06	.00	.00	.00	1.56	-1.00
7	89.19	89.58	614	WASH	1.70	62.54	20.35	2.32	25.71	51.62	6241.00	.86	-1.00
Q	93.90	94.50	615	RAW	.00	.00	40.69	.88	.00	.00	.00	3.64	-1.00
Q	93.90	94.50	615	WASH	1.70	52.80	17.70	2.06	26.81	53.43	6606.00	1.57	-1.00
6	96.27	98.16	616	RAW	.00	.00	9.85	1.19	.00	.00	.00	.50	-1.00
6	96.27	98.16	616	WASH	.00	.00	7.72	2.39	29.95	59.94	7490.00	.25	-1.00
6	98.74	99.31	617	RAW	.00	.00	20.08	.88	.00	.00	.00	3.14	-1.00
6	98.74	99.31	617	WASH	1.70	91.50	16.51	2.56	28.02	52.91	6594.00	1.46	-1.00
Q	99.31	99.64	618	RAW	.00	.00	82.65	1.01	.00	.00	.00	1.66	-1.00
Q	99.31	99.64	618	WASH	1.70	3.93	19.88	1.64	27.46	51.02	6259.00	3.76	-1.00
6	99.64	100.50	619	RAW	.00	.00	25.33	.98	.00	.00	.00	4.56	-1.00
6	99.64	100.50	619	WASH	1.70	77.94	13.21	3.11	27.88	55.80	6909.00	.54	-1.00
Q	100.50	100.73	620	RAW	.00	.00	76.58	.93	.00	.00	.00	2.79	-1.00
Q	100.50	100.73	620	WASH	1.70	5.97	8.23	2.09	30.65	59.03	7350.00	1.41	-1.00
6	100.73	101.27	621	RAW	.00	.00	9.14	.96	.00	.00	.00	3.20	-1.00
6	100.73	101.27	621	WASH	1.70	93.51	5.11	1.98	30.36	62.55	7801.00	.62	-1.00
Q	101.27	101.45	622	RAW	.00	.00	73.25	.83	.00	.00	.00	2.93	-1.00
Q	101.27	101.45	622	WASH	1.70	15.16	19.18	1.93	30.52	48.37	6363.00	1.75	-1.00
6	101.45	102.14	623	RAW	.00	.00	20.06	.96	.00	.00	.00	2.51	-1.00
6	101.45	102.14	623	WASH	1.70	95.13	17.41	1.29	27.41	53.89	6670.00	.73	-1.00
3	117.08	117.52	624	RAW	.00	.00	26.63	.92	.00	.00	.00	3.34	-1.00
3	117.08	117.52	624	WASH	1.70	78.12	14.04	1.02	29.05	55.89	7070.00	1.26	-1.00
3	118.28	119.06	625	RAW	.00	.00	19.88	.96	.00	.00	.00	1.85	-1.00
3	118.28	119.06	625	WASH	1.70	88.82	15.12	1.62	26.87	56.39	6928.00	.89	-1.00
3	119.83	120.14	626	RAW	.00	.00	25.37	1.12	.00	.00	.00	2.24	-1.00
3	119.83	120.14	626	WASH	1.70	82.67	10.51	1.32	27.01	61.16	7405.00	.50	-1.00
Q	120.14	120.28	627	RAW	.00	.00	64.69	1.66	.00	.00	.00	3.06	-1.00
Q	120.14	120.28	627	WASH	1.70	21.04	20.32	1.09	30.07	48.52	6591.00	1.34	-1.00
3	120.28	120.44	628	RAW	.00	.00	29.59	1.08	.00	.00	.00	1.61	-1.00
3	120.28	120.44	628	WASH	1.70	66.70	16.47	1.91	27.72	53.90	6713.00	.84	-1.00
Q	124.41	124.99	629	RAW	.00	.00	28.02	.99	.00	.00	.00	2.55	-1.00
Q	124.41	124.99	629	WASH	1.70	72.52	20.50	1.16	28.09	50.25	6437.00	1.13	-1.00
2	128.02	128.73	630	RAW	.00	.00	20.11	1.05	.00	.00	.00	.58	-1.00
2	128.02	128.73	630	WASH	1.70	88.56	13.63	1.46	26.96	57.95	6986.00	.30	-1.00
2	128.84	129.76	631	RAW	.00	.00	9.34	.97	.00	.00	.00	.49	-1.00
2	128.84	129.76	631	WASH	1.70	95.84	6.60	1.30	28.92	63.18	7638.00	.24	-1.00
Q	129.76	129.90	632	RAW	.00	.00	57.05	1.27	.00	.00	.00	.62	-1.00
Q	129.76	129.90	632	WASH	1.70	31.02	22.00	1.17	24.21	52.62	6264.00	.51	-1.00
2	129.90	130.64	633	RAW	.00	.00	29.82	1.07	.00	.00	.00	.54	-1.00
2	129.90	130.64	633	WASH	1.70	68.05	14.17	1.52	27.33	56.98	6697.00	.31	-1.00
2	131.08	131.34	634	RAW	.00	.00	29.99	.95	.00	.00	.00	1.08	-1.00
2	131.08	131.34	634	WASH	1.70	76.94	21.74	1.07	18.72	58.47	6257.00	.50	-1.00

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SEAM	TOP	BOT	SAMPLE	ATYP	SG	YIELD	ASH	RESMOIST	VOL	CARB	KCAL	SULF	FSI
Q	81.06	82.03	595	RAW	.00	.00	18.44	1.08	.00	.00	.00	3.07	-1.00
Q	81.06	82.03	595	WASH	1.70	86.58	11.06	1.21	31.92	55.81	7275.00	1.24	-1.00
2	87.58	89.60	596	RAW	.00	.00	20.30	1.12	.00	.00	.00	3.43	-1.00
2	87.58	89.60	596	WASH	1.70	83.25	9.26	2.45	29.74	58.55	7380.00	.80	-1.00
2	90.71	91.07	597	RAW	.00	.00	71.60	1.21	.00	.00	.00	.19	-1.00
2	90.71	91.07	597	WASH	1.70	20.61	9.63	1.46	27.92	60.99	7264.00	.23	-1.00
2	93.00	93.26	598	RAW	.00	.00	42.41	1.21	.00	.00	.00	1.28	-1.00
2	93.00	93.26	598	WASH	1.70	57.39	19.05	1.34	26.22	53.39	6479.00	.52	-1.00
2	93.44	94.00	599	RAW	.00	.00	13.55	1.20	.00	.00	.00	.87	-1.00
2	93.44	94.00	599	WASH	1.70	91.83	7.31	2.39	29.14	61.16	7485.00	.30	-1.00

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SEAM	TOP	BOT	SAMPLE	ATYP	SG	YIELD	ASH	RESMOIST	VOL	CARB	KCAL	SULF	FSI
8	108.36	110.14	742	RAW	.00	.00	26.45	.86	.00	.00	.00	11.52	-1.00
8	108.36	110.14	742	WASH	1.70	60.75	14.58	1.54	34.10	49.78	6954.00	4.96	-1.00
Q	110.30	111.23	743	RAW	.00	.00	17.94	1.10	.00	.00	.00	2.96	-1.00
Q	110.30	111.23	743	WASH	1.70	83.98	11.81	2.12	31.98	54.72	7189.00	2.06	-1.00
6	134.37	135.99	744	RAW	.00	.00	12.42	1.16	.00	.00	.00	.53	-1.00
6	134.37	135.99	744	WASH	1.70	90.19	7.23	2.86	30.85	59.06	7447.00	.55	-1.00
6	136.18	136.48	745	RAW	.00	.00	34.72	.94	.00	.00	.00	1.85	-1.00
6	136.18	136.48	745	WASH	1.70	74.58	24.10	1.63	24.01	50.26	6103.00	1.31	-1.00
3	151.11	151.50	746	RAW	.00	.00	26.33	.91	.00	.00	.00	1.89	-1.00
3	151.11	151.50	746	WASH	1.70	74.92	20.56	1.59	26.64	51.21	6383.00	1.71	-1.00
3	152.15	153.36	747	RAW	.00	.00	17.57	1.07	.00	.00	.00	1.46	-1.00
3	152.15	153.36	747	WASH	1.70	89.95	13.46	2.44	24.98	59.12	6927.00	1.23	-1.00
3	154.89	156.12	748	RAW	.00	.00	50.87	1.59	.00	.00	.00	3.02	-1.00
3	154.89	156.12	748	WASH	1.70	45.00	18.89	1.46	26.04	53.61	6548.00	3.16	-1.00
Q	159.44	160.18	749	RAW	.00	.00	33.52	1.18	.00	.00	.00	1.56	-1.00
Q	159.44	160.18	749	WASH	1.70	63.65	18.55	1.52	27.55	52.38	6513.00	1.43	-1.00
2	162.68	164.51	750	RAW	.00	.00	14.39	1.09	.00	.00	.00	.67	-1.00
2	162.68	164.51	750	WASH	1.70	88.86	9.67	2.25	27.80	60.28	7339.00	.63	-1.00
2	164.82	165.85	751	RAW	.00	.00	22.23	1.14	.00	.00	.00	.65	-1.00
2	164.82	165.85	751	WASH	1.70	86.77	17.64	2.81	25.51	54.04	6559.00	.64	-1.00
2	166.62	167.13	752	RAW	.00	.00	17.60	1.13	.00	.00	.00	1.26	-1.00
2	166.62	167.13	752	WASH	1.70	88.31	12.04	2.23	27.69	58.04	7149.00	.91	-1.00

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SEAM	TOP	BOT	SAMPLE	ATYP	SG	YIELD	ASH	RESMOIST	VOL	CARB	KCAL	SULF	FSI
6	37.60	38.00	635	RAW	.00	.00	23.80	1.37	.00	.00	.00	.47	-1.00
6	37.60	38.00	635	WASH	1.70	83.28	12.87	1.61	30.59	54.93	6973.00	.25	-1.00
6	38.40	46.00	636	RAW	.00	.00	16.21	2.77	.00	.00	.00	.55	-1.00
6	38.40	46.00	636	WASH	1.70	86.12	9.23	2.23	29.56	58.98	7249.00	.27	-1.00
3	57.24	57.66	637	RAW	.00	.00	25.82	1.23	.00	.00	.00	1.99	-1.00
3	57.24	57.66	637	WASH	1.70	77.45	16.43	1.97	27.27	54.33	6733.00	.65	-1.00
2	63.10	63.44	638	RAW	.00	.00	30.23	1.43	.00	.00	.00	3.11	-1.00
2	63.10	63.44	638	WASH	1.70	73.37	17.10	1.73	28.26	52.91	6699.00	1.06	-1.00
2	64.08	65.96	639	RAW	.00	.00	17.73	2.13	.00	.00	.00	1.17	-1.00
2	64.08	65.96	639	WASH	1.70	87.97	11.42	4.11	29.91	54.56	6964.00	.50	-1.00
2	68.63	69.16	640	RAW	.00	.00	19.78	1.38	.00	.00	.00	1.91	-1.00
2	68.63	69.16	640	WASH	1.70	88.65	15.82	2.29	26.95	54.94	6743.00	.65	-1.00

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SEAM	TOP	BOT	SAMPLE	ATYP	SG	YIELD	ASH	RESMOIST	VOL	CARB	KCAL	SULF	FSI
6	4.12	7.15	659	RAW	.00	.00	14.48	1.22	.00	.00	.00	.70	-1.00
6	4.12	7.15	659	WASH	1.70	88.82	9.27	3.60	27.33	59.80	7106.00	.61	-1.00
6	8.73	9.43	660	RAW	.00	.00	14.86	.99	.00	.00	.00	4.17	-1.00
6	8.73	9.43	660	WASH	1.70	82.60	7.27	2.04	31.67	59.02	7477.00	2.54	-1.00
3	25.50	25.96	661	RAW	.00	.00	15.92	1.14	.00	.00	.00	6.09	-1.00
3	25.50	25.96	661	WASH	1.70	92.84	13.55	1.82	27.81	56.82	6983.00	1.71	-1.00
3	27.30	27.92	662	RAW	.00	.00	31.55	1.27	.00	.00	.00	1.62	-1.00
3	27.30	27.92	662	WASH	1.70	72.33	20.09	2.20	23.78	53.93	6295.00	.82	-1.00
3	28.31	28.59	663	RAW	.00	.00	20.52	1.20	.00	.00	.00	2.27	-1.00
3	28.31	28.59	663	WASH	1.70	81.56	12.74	1.86	25.29	60.11	7055.00	.98	-1.00
2	32.62	32.97	664	RAW	.00	.00	30.09	1.02	.00	.00	.00	3.50	-1.00
2	32.62	32.97	664	WASH	1.70	70.01	21.97	1.92	24.59	51.52	6224.00	2.12	-1.00
2	34.65	37.04	665	RAW	.00	.00	24.57	1.38	.00	.00	.00	1.29	-1.00
2	34.65	37.04	665	WASH	1.70	76.89	13.53	3.52	27.18	55.77	6796.00	.80	-1.00

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SEAM	TOP	BOT	SAMPLE	ATYP	SG	YIELD	ASH	RESMOIST	VOL	CARB	KCAL	SULF	FSI
8	12.20	14.00	653	RAW	.00	.00	18.59	.95	.00	.00	.00	1.25	-1.00
8	12.20	14.00	653	WASH	1.70	75.51	10.11	3.70	29.34	57.48	7131.00	.60	-1.00
Q	14.60	15.15	654	RAW	.00	.00	30.45	1.02	.00	.00	.00	.63	-1.00
Q	14.60	15.15	654	WASH	1.70	69.06	17.02	1.79	25.96	55.23	6639.00	.32	-1.00
Q	19.17	19.46	655	RAW	.00	.00	11.42	1.02	.00	.00	.00	3.22	-1.00
Q	19.17	19.46	655	WASH	1.70	93.71	8.88	1.75	30.28	59.09	7389.00	1.42	-1.00
7	33.00	33.68	656	RAW	.00	.00	21.19	1.19	.00	.00	.00	2.48	-1.00
7	33.00	33.68	656	WASH	1.70	83.07	15.78	1.89	23.94	58.39	6675.00	.69	-1.00
Q	43.95	44.36	657	RAW	.00	.00	37.19	1.40	.00	.00	.00	2.10	-1.00
Q	43.95	44.36	657	WASH	1.70	65.02	21.53	2.47	25.49	50.51	6158.00	1.02	-1.00
6	49.78	51.72	658	RAW	.00	.00	18.64	1.28	.00	.00	.00	1.88	-1.00
6	49.78	51.72	658	WASH	1.70	81.52	9.72	2.22	30.76	57.30	7335.00	.80	-1.00

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SEAM	TOP	BOT	SAMPLE	ATYP	SG	YIELD	ASH	RESMOIST	VOL	CARB	KCAL	SULF	FSI
3	36.86	37.87	641	RAW	.00	.00	10.08	1.12	.00	.00	.00	1.00	-1.00
3	36.86	37.87	641	WASH	1.70	92.28	7.07	1.85	28.39	62.69	7528.00	.44	-1.00
3	40.24	41.57	642	RAW	.00	.00	10.71	1.20	.00	.00	.00	1.38	-1.00
3	40.24	41.57	642	WASH	1.70	92.56	7.37	2.30	29.02	61.31	7449.00	.56	-1.00
2	46.92	47.61	643	RAW	.00	.00	31.86	1.62	.00	.00	.00	2.84	-1.00
2	46.92	47.61	643	WASH	1.70	68.62	10.55	1.91	28.24	59.30	7185.00	.23	-1.00
2	47.92	48.45	644	RAW	.00	.00	35.91	1.26	.00	.00	.00	.32	-1.00
2	47.92	48.45	644	WASH	1.70	70.40	18.78	1.57	25.49	54.16	6435.00	.24	-1.00
2	49.00	49.54	645	RAW	.00	.00	20.11	1.12	.00	.00	.00	.52	-1.00
2	49.00	49.54	645	WASH	1.70	73.88	12.96	1.70	26.18	59.16	6926.00	.30	-1.00

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SEAM	TOP	BOT	SAMPLE	ATYP	SG	YIELD	ASH	RESMOIST	VOL	CARB	KCAL	SULF	FSI
7	56.00	56.59	646	RAW	.00	.00	28.06	.95	.00	.00	.00	2.78	-1.00
7	56.00	56.59	646	WASH	1.70	72.59	13.77	1.08	14.72	70.43	6977.00	1.00	-1.00
6	57.70	58.80	647	RAW	.00	.00	15.97	.87	.00	.00	.00	1.65	-1.00
6	57.70	58.80	647	WASH	1.70	93.31	12.94	1.52	22.54	63.00	6892.00	.74	-1.00
6	59.05	59.40	648	RAW	.00	.00	60.35	1.33	.00	.00	.00	.79	-1.00
6	59.05	59.40	648	WASH	1.70	9.61	13.43	1.50	27.74	57.33	6903.00	.60	-1.00
Q	67.07	67.69	649	RAW	.00	.00	31.14	1.46	.00	.00	.00	1.63	-1.00
Q	67.07	67.69	649	WASH	1.70	71.16	18.61	1.83	26.26	53.30	6298.00	.74	-1.00
2	74.95	75.25	650	RAW	.00	.00	43.43	1.91	.00	.00	.00	1.87	-1.00
2	74.95	75.25	650	WASH	1.70	55.03	15.12	1.59	28.11	55.18	6689.00	.66	-1.00
2	76.30	76.80	651	RAW	.00	.00	57.78	1.43	.00	.00	.00	.72	-1.00
2	76.30	76.80	651	WASH	1.70	31.99	24.44	1.26	19.97	54.22	6074.00	.62	-1.00
2	77.05	77.90	652	RAW	.00	.00	17.93	1.08	.00	.00	.00	1.46	-1.00
2	77.05	77.90	652	WASH	1.70	85.03	12.71	2.11	27.49	57.69	6966.00	.49	-1.00

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SEAM	TOP	BOT	SAMPLE	ATYP	SG	YIELD	ASH	RESMOIST	VOL	CARB	KCAL	SULF	FSI
6	4.87	7.59	736	RAW	.00	.00	15.15	1.43	.00	.00	.00	.92	-1.00
6	4.87	7.59	736	WASH	1.70	89.28	10.48	3.08	28.49	57.95	7071.00	.73	-1.00
6	8.33	8.97	737	RAW	.00	.00	19.45	1.10	.00	.00	.00	1.14	-1.00
6	8.33	8.97	737	WASH	1.70	95.41	16.89	1.59	26.08	55.44	6722.00	1.03	-1.00
6	10.56	11.01	738	RAW	.00	.00	6.71	1.23	.00	.00	.00	2.29	-1.00
6	10.56	11.01	738	WASH	1.70	98.60	6.45	1.85	30.57	61.13	7533.00	2.23	-1.00
3	32.71	33.93	739	RAW	.00	.00	12.84	1.13	.00	.00	.00	.91	-1.00
3	32.71	33.93	739	WASH	1.70	95.93	10.74	2.97	27.88	58.41	7036.00	.83	-1.00
2	39.17	39.90	741	RAW	.00	.00	23.39	1.20	.00	.00	.00	2.64	-1.00
2	39.17	39.90	741	WASH	1.70	78.54	13.26	2.45	29.07	55.22	6981.00	1.92	-1.00
2	42.05	43.18	740	RAW	.00	.00	31.32	1.33	.00	.00	.00	.49	-1.00
2	42.05	43.18	740	WASH	1.70	69.28	13.13	3.62	26.89	56.36	.00	.58	-1.00

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SEAM	TOP	BOT	SAMPLE	ATYP	SG	YIELD	ASH	RESMOIST	VOL	CARB	KCAL	SULF	FSI
10	49.20	49.85	753	WASH	1.70	86.38	16.21	1.78	28.86	53.15	6697.00	2.38	-1.00
10	49.20	49.85	753	RAW	.00	.00	21.71	1.18	.00	.00	.00	3.08	-1.00
9	53.60	54.46	754	RAW	.00	.00	14.05	1.17	.00	.00	.00	1.83	-1.00
9	53.60	54.46	754	WASH	1.70	93.84	11.34	1.73	33.50	53.43	7132.00	1.75	-1.00
8	54.84	56.80	755	RAW	.00	.00	14.67	1.37	.00	.00	.00	1.49	-1.00
8	54.84	56.80	755	WASH	1.70	89.70	9.58	2.83	30.67	56.92	7125.00	1.01	-1.00
7	76.07	77.26	756	RAW	.00	.00	20.71	1.40	.00	.00	.00	2.45	-1.00
7	76.07	77.26	756	WASH	1.70	79.31	10.42	2.84	29.09	57.65	7089.00	1.83	-1.00
6	83.10	85.64	757	RAW	.00	.00	15.25	1.52	.00	.00	.00	1.72	-1.00
6	83.10	85.64	757	WASH	1.70	86.02	6.77	3.65	27.99	61.59	7271.00	.84	-1.00
6	92.52	94.74	758	RAW	.00	.00	12.68	1.54	.00	.00	.00	.50	-1.00
6	92.52	94.74	758	WASH	1.70	90.09	7.35	3.86	28.21	60.58	7322.00	.52	-1.00
Q	97.26	97.75	759	RAW	.00	.00	7.46	1.32	.00	.00	.00	.65	-1.00
Q	97.26	97.75	759	WASH	1.70	93.98	4.62	3.02	28.52	63.84	7609.00	.64	-1.00
5	101.59	104.00	760	RAW	.00	.00	13.94	1.50	.00	.00	.00	.44	-1.00
5	101.59	104.00	760	WASH	1.70	88.04	7.73	4.32	26.73	61.22	7166.00	.43	-1.00
Q	106.66	107.61	761	RAW	.00	.00	8.65	1.43	.00	.00	.00	.43	-1.00
Q	106.66	107.61	761	WASH	1.70	94.59	5.78	4.66	27.21	62.35	7287.00	.44	-1.00
4	114.30	116.24	762	RAW	.00	.00	16.93	1.28	.00	.00	.00	.46	-1.00
4	114.30	116.24	762	WASH	1.70	86.62	10.02	3.20	26.98	59.80	7079.00	.48	-1.00
Q	118.18	118.72	763	RAW	.00	.00	9.92	1.17	.00	.00	.00	2.81	-1.00
Q	118.18	118.72	763	WASH	1.70	1.70	7.05	93.51	28.29	62.46	7520.00	1.34	-1.00
Q	120.32	120.94	764	RAW	.00	.00	14.76	1.25	.00	.00	.00	1.36	-1.00
Q	120.32	120.94	764	WASH	1.70	65.12	8.72	1.93	29.63	59.72	7369.00	1.64	-1.00
3	140.78	141.85	765	RAW	.00	.00	29.92	1.07	.00	.00	.00	2.08	-1.00
3	140.78	141.85	765	WASH	1.70	89.74	10.41	2.89	25.89	60.81	7142.00	1.08	-1.00
3	143.00	143.74	766	RAW	.00	.00	27.20	1.27	.00	.00	.00	2.42	-1.00
3	143.00	143.74	766	WASH	1.70	70.44	13.00	1.90	26.64	58.46	6996.00	1.61	-1.00
2	149.02	151.12	767	RAW	.00	.00	32.78	1.07	.00	.00	.00	1.96	-1.00
2	149.02	151.12	767	WASH	1.70	60.40	11.95	1.90	30.48	55.67	7160.00	1.54	-1.00
2	152.08	152.24	768	RAW	.00	.00	48.07	1.00	.00	.00	.00	.49	-1.00
2	152.08	152.24	768	WASH	1.70	30.60	22.59	1.72	27.76	47.93	6104.00	.71	-1.00
2	152.80	153.18	769	RAW	.00	.00	27.95	1.13	.00	.00	.00	.58	-1.00
2	152.80	153.18	769	WASH	1.70	84.74	18.87	2.47	22.75	55.91	6381.00	.48	-1.00

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SEAM	TOP	BOT	SAMPLE	ATYP	SG	YIELD	ASH	RESMOIST	VOL	CARB	KCAL	SULF	FSI
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Q	90.58	91.44	770	RAW	.00	.00	46.51	1.25	.00	.00	.00	1.89	-1.00
Q	90.58	91.44	770	WASH	1.70	53.95	13.14	2.12	27.27	57.47	7031.00	2.08	-1.00

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SEAM	TOP	BOT	SAMPLE	ATYP	SG	YIELD	ASH	RESMOIST	VOL	CARB	KCAL	SULF	FSI
9	52.10	52.64	720	RAW	.00	.00	17.38	1.25	.00	.00	.00	2.26	-1.00
9	52.10	52.64	720	WASH	1.70	86.58	7.81	1.47	31.28	59.44	7431.00	2.11	-1.00
8	53.76	55.22	721	RAW	.00	.00	8.57	1.38	.00	.00	.00	2.01	-1.00
8	53.76	55.22	721	WASH	1.70	91.65	5.83	2.32	28.80	63.05	7492.00	1.56	-1.00
7	72.70	73.62	722	RAW	.00	.00	12.92	.44	.00	.00	.00	1.47	-1.00
7	72.70	73.62	722	WASH	1.70	92.11	8.25	4.88	27.60	59.27	7024.00	1.38	-1.00
6	80.26	82.52	723	RAW	.00	.00	20.41	1.19	.00	.00	.00	.92	-1.00
6	80.26	82.52	723	WASH	1.70	80.22	6.85	3.32	27.81	62.02	7314.00	.69	-1.00
6	89.10	91.14	724	RAW	.00	.00	15.17	1.48	.00	.00	.00	.46	-1.00
6	89.10	91.14	724	WASH	1.70	88.44	9.95	2.83	28.00	59.22	6983.00	.48	-1.00
Q	95.84	96.38	725	RAW	.00	.00	13.57	1.53	.00	.00	.00	1.68	-1.00
Q	95.84	96.38	725	WASH	1.70	86.73	7.67	2.18	28.80	61.35	7346.00	1.24	-1.00
Q	100.62	101.69	726	RAW	.00	.00	8.31	1.53	.00	.00	.00	1.18	-1.00
Q	100.62	101.69	726	WASH	1.70	88.12	7.74	1.02	28.59	62.65	7423.00	1.49	-1.00
5	107.24	110.08	727	RAW	.00	.00	11.88	1.52	.00	.00	.00	.94	-1.00
5	107.24	110.08	727	WASH	1.70	90.40	6.66	5.13	26.10	62.11	7236.00	.61	-1.00
4	120.50	122.52	728	RAW	.00	.00	15.90	1.41	.00	.00	.00	.53	-1.00
4	120.50	122.52	728	WASH	1.70	86.92	8.65	3.39	27.15	60.81	7082.00	.55	-1.00
3	135.94	137.14	729	RAW	.00	.00	15.19	1.27	.00	.00	.00	.87	-1.00
3	135.94	137.14	729	WASH	1.70	90.18	11.03	2.52	27.07	59.38	7200.00	.83	-1.00
3	137.90	138.68	730	RAW	.00	.00	15.44	1.25	.00	.00	.00	1.15	-1.00
3	137.90	138.68	730	WASH	1.70	86.82	9.73	3.07	26.26	61.04	7249.00	1.03	-1.00
3	145.94	147.12	731	RAW	.00	.00	13.39	1.25	.00	.00	.00	1.09	-1.00
3	145.94	147.12	731	WASH	1.70	93.13	10.51	3.76	26.69	59.04	7224.00	.86	-1.00
2	147.80	148.60	732	RAW	.00	.00	22.96	1.15	.00	.00	.00	.96	-1.00
2	147.80	148.60	732	WASH	1.70	76.74	10.71	2.72	26.10	60.47	7238.00	.77	-1.00
2	154.27	156.88	733	RAW	.00	.00	25.57	1.03	.00	.00	.00	1.91	-1.00
2	154.27	156.88	733	WASH	1.70	70.17	9.18	2.88	28.68	59.26	7362.00	1.45	-1.00
Q	165.30	165.60	734	RAW	.00	.00	46.51	1.40	.00	.00	.00	.59	-1.00
Q	165.30	165.60	734	WASH	1.70	33.57	22.23	1.60	27.47	48.70	6307.00	.87	-1.00
Q	166.54	167.18	735	RAW	.00	.00	17.29	1.17	.00	.00	.00	1.57	-1.00
Q	166.54	167.18	735	WASH	1.70	89.00	12.79	2.10	27.62	57.49	7020.00	1.16	-1.00

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SEAM	TOP	BOT	SAMPLE	ATYP	SG	YIELD	ASH	RESMOIST	VOL	CARB	KCAL	SULF	FSI
8	83.98	84.42	785	RAW	.00	.00	33.19	1.27	.00	.00	.00	3.30	-1.00
8	83.98	84.42	785	WASH	1.70	62.72	9.77	2.47	28.17	59.59	7198.00	3.45	-1.00
7	90.72	91.40	786	RAW	.00	.00	14.80	1.06	.00	.00	.00	3.47	-1.00
7	90.72	91.40	786	WASH	1.70	93.46	11.19	2.80	28.41	57.60	7061.00	2.76	-1.00
6	97.63	98.88	787	RAW	.00	.00	11.32	1.17	.00	.00	.00	2.19	-1.00
6	97.63	98.88	787	WASH	1.70	96.36	9.55	3.61	27.00	59.84	7141.00	.71	-1.00
3	108.55	109.74	788	RAW	.00	.00	15.82	1.01	.00	.00	.00	3.58	-1.00
3	108.55	109.74	788	WASH	1.70	85.34	8.27	3.25	29.37	59.11	7323.00	1.71	-1.00
3	110.20	110.64	789	RAW	.00	.00	37.38	.71	.00	.00	.00	3.10	-1.00
3	110.20	110.64	789	WASH	1.70	47.07	16.45	3.37	30.10	50.08	6410.00	2.11	-1.00
3	111.20	112.63	790	RAW	.00	.00	11.51	1.13	.00	.00	.00	1.63	-1.00
3	111.20	112.63	790	WASH	1.70	92.55	7.13	3.56	29.47	59.84	7355.00	1.41	-1.00
2	118.08	118.62	791	RAW	.00	.00	36.04	1.00	.00	.00	.00	4.92	-1.00
2	118.08	118.62	791	WASH	1.70	62.88	21.04	2.70	23.31	52.95	6284.00	2.55	-1.00
2	119.12	121.20	792	RAW	.00	.00	20.64	1.10	.00	.00	.00	3.58	-1.00
2	119.12	121.20	792	WASH	1.70	83.41	12.10	4.02	24.66	59.22	6900.00	.93	-1.00

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SEAM	TOP	BOT	SAMPLE	ATYP	SG	YIELD	ASH	RESMOIST	VOL	CARB	KCAL	SULF	FSI
10	36.56	37.08	771	RAW	.00	.00	11.86	1.06	.00	.00	.00	2.53	-1.00
10	36.56	37.08	771	WASH	1.70	96.77	10.67	.95	30.41	57.97	7294.00	2.27	-1.00
9	42.92	43.88	772	RAW	.00	.00	15.84	1.18	.00	.00	.00	4.31	-1.00
9	42.92	43.88	772	WASH	1.70	88.71	10.35	1.40	33.46	54.79	7272.00	2.87	-1.00
8	46.97	49.54	773	RAW	.00	.00	31.10	1.43	.00	.00	.00	3.65	-1.00
8	46.97	49.54	773	WASH	1.70	64.15	10.23	1.62	29.89	58.26	7249.00	1.45	-1.00
7	66.52	67.57	774	RAW	.00	.00	13.55	1.33	.00	.00	.00	1.78	-1.00
7	66.52	67.57	774	WASH	1.70	92.40	9.53	1.50	30.40	58.57	7247.00	1.63	-1.00
6	74.42	78.30	775	RAW	.00	.00	12.65	1.40	.00	.00	.00	.86	-1.00
6	74.42	78.30	775	WASH	1.70	89.33	7.28	2.19	30.40	60.13	7421.00	.77	-1.00
6	80.18	82.76	776	RAW	.00	.00	14.02	1.42	.00	.00	.00	.47	-1.00
6	80.18	82.76	776	WASH	1.70	88.88	8.82	1.65	29.44	60.09	7272.00	.49	-1.00
6	84.32	85.52	777	RAW	.00	.00	15.33	1.32	.00	.00	.00	3.19	-1.00
6	84.32	85.52	777	WASH	1.70	81.48	4.81	2.27	29.17	63.75	7681.00	.99	-1.00
7	97.52	98.67	778	RAW	.00	.00	15.62	1.12	.00	.00	.00	2.54	-1.00
7	97.52	98.67	778	WASH	1.70	87.05	9.28	1.98	30.48	58.26	7407.00	1.80	-1.00
6	106.16	109.11	779	RAW	.00	.00	12.41	1.33	.00	.00	.00	.92	-1.00
6	106.16	109.11	779	WASH	1.70	89.07	6.75	2.93	28.48	61.84	7483.00	.76	-1.00
6	115.35	117.10	780	RAW	.00	.00	15.22	1.33	.00	.00	.00	.42	-1.00
6	115.35	117.10	780	WASH	1.70	90.05	10.28	2.86	28.58	58.28	7143.00	.48	-1.00
6	121.70	123.46	781	RAW	.00	.00	10.72	1.10	.00	.00	.00	1.25	-1.00
6	121.70	123.46	781	WASH	1.70	90.15	6.72	2.42	29.58	61.28	7344.00	1.12	-1.00
2	149.93	150.79	782	RAW	.00	.00	15.08	1.06	.00	.00	.00	.89	-1.00
2	149.93	150.79	782	WASH	1.70	91.66	10.56	3.69	26.59	59.16	7123.00	.73	-1.00
2	151.44	152.26	783	RAW	.00	.00	53.53	1.58	.00	.00	.00	2.63	-1.00
2	151.44	152.26	783	WASH	1.70	39.75	11.11	2.05	27.43	59.41	7184.00	1.04	-1.00
2	154.49	154.80	784	RAW	.00	.00	37.25	1.12	.00	.00	.00	2.86	-1.00
2	154.49	154.80	784	WASH	1.70	65.69	21.24	2.02	28.28	48.46	6349.00	1.70	-1.00

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SEAM	TOP	BOT	SAMPLE	ATYP	SG	YIELD	ASH	RESMOIST	VOL	CARB	KCAL	SULF	FSI
7	12.83	13.92	821	RAW	.00	.00	14.04	1.12	.00	.00	.00	4.14	-1.00
7	12.83	13.92	821	WASH	1.70	86.03	7.84	1.81	35.02	55.33	7414.00	2.11	-1.00
6	27.98	32.08	822	RAW	.00	.00	15.71	1.34	.00	.00	.00	1.98	-1.00
6	27.98	32.08	822	WASH	1.70	87.49	9.17	2.20	29.30	59.33	7186.00	.90	-1.00
2	57.50	59.60	823	RAW	.00	.00	14.10	1.24	.00	.00	.00	2.03	-1.00
2	57.50	59.60	823	WASH	1.70	86.89	7.75	3.47	29.18	59.60	7417.00	1.37	-1.00
Q	77.94	78.12	824	RAW	.00	.00	25.34	1.29	.00	.00	.00	1.49	-1.00
Q	77.94	78.12	824	WASH	1.70	73.13	11.00	1.68	29.43	57.89	7212.00	1.57	-1.00
Q	78.38	78.96	825	RAW	.00	.00	16.92	1.56	.00	.00	.00	1.71	-1.00
Q	78.38	78.96	825	WASH	1.70	85.14	10.70	2.28	29.92	57.10	7236.00	1.58	-1.00
6	82.18	82.81	826	RAW	.00	.00	18.37	1.30	.00	.00	.00	2.62	-1.00
6	82.18	82.81	826	WASH	1.70	79.02	9.61	1.79	29.83	58.77	7281.00	2.08	-1.00

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SEAM	TOP	BOT	SAMPLE	ATYP	SG	YIELD	ASH	RESMOIST	VOL	CARB	KCAL	SULF	FSI
Q	11.10	11.40	681	RAW	.00	.00	90.08	2.00	.00	.00	.00	1.77	-1.00
Q	11.10	11.40	681	WASH	1.70	.41	50.62	2.30	17.30	29.78	3451.00	1.39	-1.00
10	11.40	11.90	682	RAW	.00	.00	14.18	1.40	.00	.00	.00	3.13	-1.00
10	11.40	11.90	682	WASH	1.70	88.73	8.80	1.82	31.54	57.84	7440.00	2.43	-1.00
Q	11.90	12.20	683	RAW	.00	.00	85.86	1.71	.00	.00	.00	1.71	-1.00
Q	11.90	12.20	683	WASH	1.70	1.81	20.66	1.82	30.43	47.09	6393.00	3.14	-1.00
Q	16.00	16.30	684	RAW	.00	.00	78.66	1.76	.00	.00	.00	4.58	-1.00
Q	16.00	16.30	684	WASH	1.70	.00	28.76	1.77	24.63	44.84	5613.00	2.71	-1.00
9	16.02	17.19	685	RAW	.00	.00	8.67	1.34	.00	.00	.00	1.87	-1.00
9	16.02	17.19	685	WASH	1.70	96.99	7.21	1.68	34.68	56.43	7614.00	1.69	-1.00
Q	17.16	17.46	686	RAW	.00	.00	83.98	2.09	.00	.00	.00	4.47	-1.00
Q	17.16	17.46	686	WASH	1.70	1.80	30.58	2.08	29.58	37.76	5451.00	3.05	-1.00
Q	18.00	18.30	687	RAW	.00	.00	80.87	2.11	.00	.00	.00	4.48	-1.00
Q	18.00	18.30	687	WASH	1.70	5.30	33.72	1.71	20.77	43.80	5148.00	4.31	-1.00
8	18.32	20.12	688	RAW	.00	.00	13.55	1.46	.00	.00	.00	2.31	-1.00
8	18.32	20.12	688	WASH	1.70	89.93	7.52	3.19	28.64	60.65	7301.00	1.25	-1.00
Q	20.64	20.94	689	RAW	.00	.00	91.41	1.30	.00	.00	.00	.10	-1.00
Q	20.64	20.94	689	WASH	1.70	1.96	14.48	1.72	31.58	52.22	6917.00	1.00	-1.00
Q	40.99	41.29	690	RAW	.00	.00	89.23	1.61	.00	.00	.00	1.62	-1.00
Q	40.99	41.29	690	WASH	1.70	.18	58.48	1.80	15.02	24.70	2876.00	1.78	-1.00
7	41.27	42.44	691	RAW	.00	.00	18.70	1.38	.00	.00	.00	4.18	-1.00
7	41.27	42.44	691	WASH	1.70	82.54	9.09	1.68	30.23	59.00	7358.00	1.52	-1.00
Q	42.40	42.70	692	RAW	.00	.00	82.07	1.72	.00	.00	.00	.69	-1.00
Q	42.40	42.70	692	WASH	1.70	4.61	27.18	1.55	26.06	45.21	5823.00	1.56	-1.00
6	48.06	48.18	693	RAW	.00	.00	84.90	1.69	.00	.00	.00	2.22	-1.00
6	48.06	48.18	693	WASH	1.70	1.83	10.20	1.58	30.73	57.49	7308.00	1.52	-1.00
6	48.35	50.56	694	RAW	.00	.00	22.61	1.49	.00	.00	.00	1.00	-1.00
6	48.35	50.56	694	WASH	1.70	80.05	8.17	2.74	28.50	60.59	7413.00	.67	-1.00
Q	50.56	50.86	695	RAW	.00	.00	87.26	1.62	.00	.00	.00	.05	-1.00
Q	50.56	50.86	695	WASH	1.70	.61	31.00	1.52	22.31	45.17	5466.00	.41	-1.00
Q	58.24	58.57	696	RAW	.00	.00	78.79	.98	.00	.00	.00	.54	-1.00
Q	58.24	58.57	696	WASH	1.70	.68	51.70	1.20	20.62	26.48	3260.00	.73	-1.00
6	58.56	60.96	698	RAW	.00	.00	87.70	1.54	.00	.00	.00	.60	-1.00
6	58.56	60.96	698	WASH	1.70	.86	40.70	1.50	22.44	35.36	4606.00	1.08	-1.00
Q	58.57	60.80	697	RAW	.00	.00	15.48	1.47	.00	.00	.00	.56	-1.00
Q	58.57	60.80	697	WASH	1.70	87.35	9.01	1.91	29.52	59.56	7266.00	.45	-1.00
Q	61.90	62.20	699	RAW	.00	.00	86.92	1.68	.00	.00	.00	1.89	-1.00
Q	61.90	62.20	699	WASH	1.70	.14	19.95	1.52	28.14	50.39	6465.00	1.51	-1.00
6	62.31	62.98	700	RAW	.00	.00	32.86	1.39	.00	.00	.00	2.49	-1.00
6	62.31	62.98	700	WASH	1.70	62.23	10.77	2.48	28.25	58.50	7141.00	1.26	-1.00
Q	62.75	63.05	701	RAW	.00	.00	88.13	1.49	.00	.00	.00	1.27	-1.00
Q	62.75	63.05	701	WASH	1.70	.99	32.94	1.77	25.24	40.05	5266.00	1.74	-1.00
Q	64.10	64.40	702	RAW	.00	.00	85.13	1.33	.00	.00	.00	3.95	-1.00
Q	64.10	64.40	702	WASH	1.70	1.22	14.46	1.88	33.08	50.58	6835.00	4.04	-1.00
6	64.46	65.20	703	RAW	.00	.00	12.81	1.18	.00	.00	.00	3.02	-1.00
6	64.46	65.20	703	WASH	1.70	91.67	8.26	2.30	31.10	58.34	7736.00	2.55	-1.00
Q	65.00	65.30	719	RAW	.00	.00	89.17	1.72	.00	.00	.00	.13	-1.00
Q	65.00	65.30	719	WASH	1.70	1.93	39.46	1.66	23.21	35.67	4415.00	.82	-1.00
Q	86.30	86.60	704	RAW	.00	.00	82.21	1.87	.00	.00	.00	4.29	-1.00
Q	86.30	86.60	704	WASH	1.70	1.13	14.74	2.16	28.26	54.84	6902.00	1.55	-1.00
3	86.71	90.46	705	RAW	.00	.00	19.48	1.29	.00	.00	.00	1.15	-1.00
3	86.71	90.46	705	WASH	1.70	84.49	10.41	2.86	26.18	60.55	7289.00	.92	-1.00

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SEAM	TOP	BOT	SAMPLE	ATYP	SG	YIELD	ASH	RESMOIST	VOL	CARB	KCAL	SULF	FSI
Q	90.25	90.55	706	RAW	.00	.00	85.51	2.15	.00	.00	.00	.27	-1.00
Q	90.25	90.55	706	WASH	1.70	1.89	32.92	2.02	22.19	42.87	5214.00	.59	-1.00
Q	95.90	96.20	716	RAW	.00	.00	80.62	2.30	.00	.00	.00	5.29	-1.00
Q	95.90	96.20	716	WASH	1.70	1.26	32.47	1.52	30.93	35.08	5414.00	1.09	-1.00
2	96.24	96.84	717	RAW	.00	.00	28.91	1.30	.00	.00	.00	1.96	-1.00
2	96.24	96.84	717	WASH	1.70	73.24	16.82	1.56	27.87	53.75	6825.00	1.71	-1.00
Q	96.70	97.00	718	RAW	.00	.00	75.47	2.27	.00	.00	.00	.86	-1.00
Q	96.70	97.00	718	WASH	1.70	13.41	26.46	1.71	24.52	47.31	5897.00	1.34	-1.00
Q	98.50	98.80	707	RAW	.00	.00	84.28	2.38	.00	.00	.00	2.47	-1.00
Q	98.50	98.80	707	WASH	1.70	1.19	29.78	1.88	24.64	43.70	5504.00	2.45	-1.00
2	98.75	99.60	708	RAW	.00	.00	20.41	1.31	.00	.00	.00	1.32	-1.00
2	98.75	99.60	708	WASH	1.70	82.75	10.20	1.90	30.72	57.18	7098.00	1.03	-1.00
Q	99.38	99.68	709	RAW	.00	.00	82.17	1.71	.00	.00	.00	2.09	-1.00
Q	99.38	99.68	709	WASH	1.70	2.69	22.28	1.88	28.43	47.41	6163.00	1.77	-1.00
Q	100.00	100.30	710	RAW	.00	.00	78.58	1.69	.00	.00	.00	2.48	-1.00
Q	100.00	100.30	710	WASH	1.70	4.45	22.48	2.11	25.28	50.13	6196.00	1.08	-1.00
2	100.27	101.35	711	RAW	.00	.00	16.08	1.41	.00	.00	.00	1.29	-1.00
2	100.27	101.35	711	WASH	1.70	85.36	8.37	2.21	30.18	59.24	7455.00	.84	-1.00
Q	101.10	101.40	712	RAW	.00	.00	79.65	1.92	.00	.00	.00	2.34	-1.00
Max Q	101.10	101.40	712	WASH	.00	.00	22.65	1.59	22.31	53.45	.00	2.60	-1.00
Q	101.10	101.40	712 &	RAW	.00	.00	79.65	1.92	.00	.00	.00	2.34	-1.00
Q	101.10	101.40	712/71	RAW	.00	.00	79.65	1.92	.00	.00	.00	2.34	-1.00
Q	101.10	101.40	712/71	WASH	1.70	4.47	22.65	1.59	22.31	53.45	6183.00	2.60	-1.00
2	101.66	102.13	714	RAW	.00	.00	17.28	1.61	.00	.00	.00	1.11	-1.00
2	101.66	102.13	714	WASH	1.70	88.77	11.10	2.61	25.60	60.69	7123.00	.86	-1.00
Q	102.10	102.40	715	RAW	.00	.00	83.49	1.45	.00	.00	.00	.46	-1.00
Q	102.10	102.40	715	WASH	1.70	4.81	22.18	1.88	27.60	48.34	6235.00	1.04	-1.00

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SEAM	TOP	BOT	SAMPLE	ATYP	SG	YIELD	ASH	RESMOIST	VOL	CARB	KCAL	SULF	FSI
Q	57.48	57.62	666	RAW	.00	.00	87.82	1.00	.00	.00	.00	.20	-1.00
Q	57.48	57.62	666	WASH	1.70	1.08	30.28	2.24	24.19	43.29	5480.00	.60	-1.00
3	58.72	59.05	667	RAW	.00	.00	26.80	.95	.00	.00	.00	1.00	-1.00
3	58.72	59.05	667	WASH	1.70	64.64	11.71	2.30	30.30	55.69	7100.00	1.00	-1.00
Q	59.05	59.35	668	WASH	1.70	3.92	13.62	2.06	29.33	54.99	6946.00	1.53	-1.00
Q	59.05	59.35	668	RAW	.00	.00	86.21	1.07	.00	.00	.00	.96	-1.00
Q	60.24	60.54	669	RAW	.00	.00	60.85	1.06	.00	.00	.00	7.71	-1.00
Q	60.24	60.54	669	WASH	1.70	16.12	33.08	2.07	24.54	40.31	5222.00	1.93	-1.00
3	60.54	61.95	670	RAW	.00	.00	67.93	1.28	.00	.00	.00	3.13	-1.00
3	60.54	61.95	670	WASH	1.70	12.61	27.47	1.88	25.40	45.25	5638.00	1.75	-1.00
Q	61.95	62.25	671	RAW	.00	.00	89.77	1.17	.00	.00	.00	.51	-1.00
Q	61.95	62.25	671	WASH	1.70	.68	5.56	1.38	18.30	74.76	7904.00	1.20	-1.00
Q	67.09	67.39	672	RAW	.00	.00	87.12	1.36	.00	.00	.00	.33	-1.00
Q	67.09	67.39	672	WASH	1.70	.68	29.60	2.16	25.27	42.97	5390.00	1.10	-1.00
2	67.39	68.04	673	RAW	.00	.00	47.08	1.24	.00	.00	.00	.55	-1.00
2	67.39	68.04	673	WASH	1.70	49.68	16.36	3.18	25.23	55.23	6681.00	.65	-1.00
Q	68.04	68.34	674	RAW	.00	.00	83.06	1.75	.00	.00	.00	.07	-1.00
Q	68.04	68.34	674	WASH	1.70	2.61	26.31	1.96	23.74	47.99	5836.00	.45	-1.00
Q	68.34	68.65	675	RAW	.00	.00	86.32	1.72	.00	.00	.00	.12	-1.00
Q	68.34	68.65	675	WASH	1.70	.91	6.88	2.38	29.38	61.36	7594.00	.66	-1.00
2	68.65	69.14	676	RAW	.00	.00	31.89	1.40	.00	.00	.00	.35	-1.00
2	68.65	69.14	676	WASH	1.70	71.13	17.14	3.92	24.39	54.55	6419.00	.36	-1.00
Q	69.14	69.44	677	RAW	.00	.00	89.43	1.85	.00	.00	.00	.26	-1.00
Q	69.14	69.44	677	WASH	1.70	.67	36.84	2.00	21.05	40.11	4903.00	1.14	-1.00
Q	69.69	70.09	678	RAW	.00	.00	86.24	1.79	.00	.00	.00	2.19	-1.00
Q	69.69	70.09	678	WASH	1.70	.69	35.26	2.18	23.70	38.86	5058.00	2.62	-1.00
2	70.09	70.57	679	RAW	.00	.00	21.65	1.52	.00	.00	.00	1.41	-1.00
2	70.09	70.57	679	WASH	1.70	87.97	16.37	2.57	26.22	54.84	6620.00	1.23	-1.00
Q	70.57	70.87	680	RAW	.00	.00	89.69	2.07	.00	.00	.00	.08	-1.00
Q	70.57	70.87	680	WASH	1.70	.64	55.18	2.18	15.91	26.73	2986.00	.32	-1.00

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SEAM	TOP	BOT	SAMPLE	ATYP	SG	YIELD	ASH	RESMOIST	VOL	CARB	KCAL	SULF	FSI
Q	11.57	11.84	871	RAW	.00	.00	41.88	1.68	.00	.00	.00	1.69	-1.00
Q	11.57	11.84	871	WASH	1.70	58.82	25.86	1.38	26.47	46.29	5876.00	2.31	-1.00
Q	12.68	13.55	872	RAW	.00	.00	52.03	1.64	.00	.00	.00	5.92	-1.00
Q	12.68	13.55	872	WASH	1.70	31.69	26.77	2.49	24.97	45.77	5611.00	1.72	-1.00
Q	17.76	18.36	873	RAW	.00	.00	25.87	1.32	.00	.00	.00	1.98	-1.00
Q	17.76	18.36	873	WASH	1.70	79.30	16.85	2.12	24.27	56.76	6600.00	1.29	-1.00
Q	25.64	26.75	874	RAW	.00	.00	39.80	1.43	.00	.00	.00	2.17	-1.00
Q	25.64	26.75	874	WASH	1.70	50.75	27.70	1.95	26.84	43.51	5693.00	1.62	-1.00
2	88.44	88.88	875	RAW	.00	.00	68.50	1.29	.00	.00	.00	.26	-1.00
2	88.44	88.88	875	WASH	1.70	19.70	28.57	2.11	22.97	46.35	5571.00	.61	-1.00
2	89.07	89.40	876	RAW	.00	.00	41.12	1.25	.00	.00	.00	.33	-1.00
2	89.07	89.40	876	WASH	1.70	63.18	21.20	1.66	22.23	54.91	6268.00	.43	-1.00
2	90.62	91.11	877	RAW	.00	.00	33.25	1.45	.00	.00	.00	.49	-1.00
2	90.62	91.11	877	WASH	1.70	62.08	13.64	2.11	27.92	56.33	6906.00	.46	-1.00
2	91.63	92.24	878	RAW	.00	.00	26.26	1.44	.00	.00	.00	.38	-1.00
2	91.63	92.24	878	WASH	1.70	77.49	17.65	2.77	26.28	53.30	6484.00	.41	-1.00
2	93.44	93.96	879	RAW	.00	.00	19.28	1.33	.00	.00	.00	1.40	-1.00
2	93.44	93.96	879	WASH	1.70	88.41	15.35	2.19	25.73	56.73	6795.00	1.29	-1.00

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SEAM	TOP	BOT	SAMPLE	ATYP	SG	YIELD	ASH	RESMOIST	VOL	CARB	KCAL	SULF	FSI
Q	69.48	70.54	807	RAW	.00	.00	12.46	1.49	.00	.00	.00	1.51	-1.00
Q	69.48	70.54	807	WASH	1.70	86.16	7.78	2.39	30.70	59.13	7425.00	.82	-1.00
8	131.95	134.68	808	RAW	.00	.00	18.42	1.50	.00	.00	.00	.76	-1.00
8	131.95	134.68	808	WASH	1.70	85.45	9.31	5.13	26.57	58.99	6970.00	.82	-1.00
7	146.95	247.88	809	RAW	.00	.00	24.80	1.01	.00	.00	.00	1.64	-1.00
7	146.95	247.88	809	WASH	1.70	71.42	12.77	2.84	27.46	56.93	6994.00	1.31	-1.00
6	152.90	154.92	810	RAW	.00	.00	17.67	1.20	.00	.00	.00	1.75	-1.00
6	152.90	154.92	810	WASH	1.70	82.13	9.40	4.32	27.71	58.57	7142.00	.65	-1.00
3	171.60	172.04	811	RAW	.00	.00	32.58	.85	.00	.00	.00	4.33	-1.00
3	171.60	172.04	811	WASH	1.70	61.98	19.49	1.97	27.80	50.74	6603.00	2.69	-1.00
3	173.52	174.95	812	RAW	.00	.00	12.42	.93	.00	.00	.00	1.08	-1.00
3	173.52	174.95	812	WASH	1.70	94.38	10.35	3.45	26.69	59.51	7259.00	1.06	-1.00
3	175.33	175.88	813	RAW	.00	.00	15.92	.98	.00	.00	.00	1.17	-1.00
3	175.33	175.88	813	WASH	1.70	84.93	10.70	2.94	24.95	61.41	7244.00	.49	-1.00
3	176.34	176.81	814	RAW	.00	.00	24.95	1.10	.00	.00	.00	1.47	-1.00
3	176.34	176.81	814	WASH	1.70	73.49	14.43	2.89	25.48	57.20	6904.00	.75	-1.00
2	185.92	186.45	815	RAW	.00	.00	38.56	1.14	.00	.00	.00	3.67	-1.00
2	185.92	186.45	815	WASH	1.70	54.43	23.14	2.14	25.01	49.71	6199.00	1.24	-1.00
2	187.70	190.04	816	RAW	.00	.00	23.01	1.13	.00	.00	.00	1.10	-1.00
2	187.70	190.04	816	WASH	1.70	75.43	13.16	4.06	26.08	56.70	6961.00	.80	-1.00
2	190.91	191.24	817	RAW	.00	.00	32.08	1.15	.00	.00	.00	1.80	-1.00
2	190.91	191.24	817	WASH	1.70	70.74	18.99	1.24	25.17	54.60	6481.00	1.69	-1.00
2	191.79	192.14	818	RAW	.00	.00	36.37	.94	.00	.00	.00	.38	-1.00
2	191.79	192.14	818	WASH	1.70	50.36	17.31	2.96	23.58	56.15	6747.00	.44	-1.00
2	194.29	194.61	819	RAW	.00	.00	26.83	1.13	.00	.00	.00	.97	-1.00
2	194.29	194.61	819	WASH	1.70	78.10	18.23	2.75	23.24	55.78	6330.00	.54	-1.00
2	195.38	196.01	820	RAW	.00	.00	19.10	1.12	.00	.00	.00	.69	-1.00
2	195.38	196.01	820	WASH	1.70	83.26	11.76	1.92	25.81	60.51	7201.00	.78	-1.00

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SEAM	TOP	BOT	SAMPLE	ATYP	SG	YIELD	ASH	RESMOIST	VOL	CARB	KCAL	SULF	FSI
Q	14.43	15.74	793	RAW	.00	.00	23.16	1.02	.00	.00	.00	2.30	-1.00
Q	14.43	15.74	793	WASH	1.70	81.38	14.32	2.86	28.68	54.14	6708.00	1.97	-1.00
7	29.70	30.40	794	RAW	.00	.00	8.91	1.01	.00	.00	.00	3.21	-1.00
7	29.70	30.40	794	WASH	1.70	94.08	6.87	3.14	31.59	58.40	7353.00	2.17	-1.00
6	40.55	41.64	795	RAW	.00	.00	20.33	1.14	.00	.00	.00	2.64	-1.00
6	40.55	41.64	795	WASH	1.70	85.56	12.45	3.90	28.43	55.22	6828.00	1.60	-1.00
6	43.98	44.34	796	RAW	.00	.00	37.33	1.17	.00	.00	.00	7.63	-1.00
6	43.98	44.34	796	WASH	1.70	55.41	17.25	2.44	25.69	54.62	6434.00	4.33	-1.00
6	44.34	46.08	797	RAW	.00	.00	24.94	1.19	.00	.00	.00	2.12	-1.00
6	44.34	46.08	797	WASH	1.70	77.65	11.89	2.67	28.82	56.62	6923.00	1.47	-1.00
2	63.56	66.23	798	RAW	.00	.00	13.62	1.42	.00	.00	.00	.59	-1.00
2	63.56	66.23	798	WASH	1.70	93.05	10.13	6.31	25.38	58.18	6781.00	.53	-1.00

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SEAM	TOP	BOT	SAMPLE	ATYP	SG	YIELD	ASH	RESMOIST	VOL	CARB	KCAL	SULF	FSI
Q	103.28	104.28	915	RAW	.00	.00	20.49	1.07	.00	.00	.00	3.57	-1.00
Q	103.28	104.28	915	WASH	1.70	83.42	14.44	1.28	26.70	57.58	6753.00	.48	-1.00
3	147.80	148.35	914	RAW	.00	.00	21.53	.94	.00	.00	.00	.45	-1.00
3	147.80	148.35	914	WASH	1.70	85.39	16.35	1.71	26.08	55.86	6699.00	.33	-1.00
2	156.57	158.39	913	RAW	.00	.00	41.50	1.00	.00	.00	.00	.42	-1.00
2	156.57	158.39	913	WASH	1.70	56.66	21.00	1.38	27.18	50.44	6300.00	.57	-1.00
3	163.12	163.42	912	RAW	.00	.00	40.92	.93	.00	.00	.00	.41	-1.00
3	163.12	163.42	912	WASH	1.70	58.34	18.60	.93	25.12	55.35	6515.00	.55	-1.00
2	164.41	164.91	911	RAW	.00	.00	14.59	.92	.00	.00	.00	3.91	-1.00
2	164.41	164.91	911	WASH	1.70	85.61	8.36	.70	28.05	62.89	7376.00	.56	-1.00

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SEAM	TOP	BOT	SAMPLE	ATYP	SG	YIELD	ASH	RESMOIST	VOL	CARB	KCAL	SULF	FSI
2	115.29	116.09	899	RAW	.00	.00	65.97	.90	.00	.00	.00	4.79	-1.00
2	115.29	116.09	899	WASH	1.70	13.23	20.68	2.41	23.39	53.52	6311.00	1.49	-1.00

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SEAM	TOP	BOT	SAMPLE	ATYP	SG	YIELD	ASH	RESMOIST	VOL	CARB	KCAL	SULF	FSI
10	43.08	44.16	799	RAW	.00	.00	17.45	1.03	.00	.00	.00	3.30	-1.00
10	43.08	44.16	799	WASH	1.70	82.49	8.43	2.11	31.96	57.50	7473.00	2.45	-1.00
9	57.30	58.70	800	RAW	.00	.00	26.40	1.13	.00	.00	.00	4.72	-1.00
9	57.30	58.70	800	WASH	1.70	67.93	8.36	1.60	32.86	57.18	7528.00	1.62	-1.00
8	61.33	64.28	801	RAW	.00	.00	14.20	1.45	.00	.00	.00	2.56	-1.00
8	61.33	64.28	801	WASH	1.70	86.03	8.68	1.97	27.74	61.61	7362.00	1.28	-1.00
7	72.49	74.07	802	RAW	.00	.00	14.27	1.28	.00	.00	.00	.45	-1.00
7	72.49	74.07	802	WASH	1.70	87.81	9.06	1.93	29.33	59.68	7345.00	.43	-1.00
5	81.66	84.91	803	RAW	.00	.00	14.49	1.35	.00	.00	.00	.52	-1.00
5	81.66	84.91	803	WASH	1.70	86.32	7.49	2.28	28.59	61.64	7471.00	.38	-1.00
4	88.79	90.50	804	RAW	.00	.00	8.27	1.40	.00	.00	.00	.58	-1.00
4	88.79	90.50	804	WASH	1.70	89.94	3.97	2.16	28.80	65.07	7794.00	.56	-1.00
3	97.40	99.10	805	RAW	.00	.00	19.35	1.24	.00	.00	.00	.45	-1.00
3	97.40	99.10	805	WASH	1.70	81.59	11.18	1.73	28.09	59.00	7159.00	.46	-1.00
2	101.32	101.90	806	RAW	.00	.00	21.74	1.40	.00	.00	.00	1.38	-1.00
2	101.32	101.90	806	WASH	1.70	77.14	8.06	2.76	26.91	62.27	7395.00	.76	-1.00

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SEAM	TOP	BOT	SAMPLE	ATYP	SG	YIELD	ASH	RESMOIST	VOL	CARB	KCAL	SULF	FSI
10	73.46	73.80	885	RAW	.00	.00	21.71	1.02	.00	.00	.00	9.34	-1.00
10	73.46	73.80	885	WASH	1.70	74.16	11.47	1.71	31.64	55.18	7208.00	2.10	-1.00
9	75.27	75.60	886	RAW	.00	.00	27.11	1.24	.00	.00	.00	7.03	-1.00
9	75.27	75.60	886	WASH	1.70	66.38	10.61	1.64	30.22	57.53	7274.00	2.60	-1.00
8	76.24	78.48	887	RAW	.00	.00	12.18	1.37	.00	.00	.00	1.55	-1.00
8	76.24	78.48	887	WASH	1.70	90.28	8.56	1.91	28.70	60.83	7350.00	1.10	-1.00
7	89.86	91.18	888	RAW	.00	.00	16.84	1.16	.00	.00	.00	2.17	-1.00
7	89.86	91.18	888	WASH	1.70	80.00	9.55	1.40	30.03	59.02	7310.00	1.36	-1.00
7	94.60	94.65	889	RAW	.00	.00	21.09	1.42	.00	.00	.00	1.15	-1.00
7	94.60	94.65	889	WASH	1.70	82.40	12.83	2.22	27.94	57.01	6986.00	1.10	-1.00
7	96.24	97.32	890	RAW	.00	.00	9.68	1.30	.00	.00	.00	.61	-1.00
7	96.24	97.32	890	WASH	1.70	94.27	8.15	1.09	29.34	61.42	7462.00	.59	-1.00
6	102.30	105.12	891	RAW	.00	.00	13.24	1.31	.00	.00	.00	.46	-1.00
6	102.30	105.12	891	WASH	1.70	87.33	7.91	1.30	29.17	61.62	7489.00	.48	-1.00
6	106.67	108.09	892	RAW	.00	.00	10.96	1.23	.00	.00	.00	.85	-1.00
6	106.67	108.09	892	WASH	1.70	92.85	8.09	2.70	29.77	59.44	7389.00	.71	-1.00
3	124.90	125.28	893	RAW	.00	.00	24.68	1.26	.00	.00	.00	4.23	-1.00
3	124.90	125.28	893	WASH	1.70	78.07	17.28	1.34	27.28	54.10	6735.00	2.42	-1.00
3	126.14	127.16	894	RAW	.00	.00	19.21	.91	.00	.00	.00	.76	-1.00
3	126.14	127.16	894	WASH	1.70	89.25	13.97	3.71	25.49	56.83	6848.00	.65	-1.00
3	127.69	128.04	895	RAW	.00	.00	15.03	.95	.00	.00	.00	1.16	-1.00
3	127.69	128.04	895	WASH	1.70	92.47	11.02	2.35	25.82	60.81	7246.00	.86	-1.00
2	139.05	140.05	896	RAW	.00	.00	8.15	1.00	.00	.00	.00	.46	-1.00
2	139.05	140.05	896	WASH	1.70	96.65	6.92	3.55	26.62	62.91	7466.00	.45	-1.00
2	140.86	141.20	900	RAW	.00	.00	22.21	1.00	.00	.00	.00	.42	-1.00
2	140.86	141.20	900	WASH	1.70	87.48	18.43	1.91	23.00	56.66	6594.00	.43	-1.00
Q	142.62	142.92	897	RAW	.00	.00	30.82	1.01	.00	.00	.00	.34	-1.00
Q	142.62	142.92	897	WASH	1.70	73.55	20.09	1.97	22.33	55.61	6325.00	.39	-1.00
2	144.01	144.58	898	RAW	.00	.00	19.34	1.02	.00	.00	.00	2.06	-1.00
2	144.01	144.58	898	WASH	1.70	88.55	13.97	2.36	26.70	56.97	7062.00	1.50	-1.00

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SEAM	TOP	BOT	SAMPLE	ATYP	SG	YIELD	ASH	RESMOIST	VOL	CARB	KCAL	SULF	FSI
9	62.00	63.12	901	RAW	.00	.00	9.45	1.12	.00	.00	.00	2.78	-1.00
9	62.00	63.12	901	WASH	1.70	92.83	7.18	1.04	32.93	58.85	7692.00	1.68	-1.00
8	64.58	65.70	902	RAW	.00	.00	13.14	1.36	.00	.00	.00	1.87	-1.00
8	64.58	65.70	902	WASH	1.70	92.64	8.12	.65	30.96	60.27	7536.00	1.24	-1.00
7	85.21	87.29	903	RAW	.00	.00	14.30	1.39	.00	.00	.00	.61	-1.00
7	85.21	87.29	903	WASH	1.70	91.23	8.64	.71	29.33	61.32	7469.00	.42	-1.00
6	94.74	95.05	904	RAW	.00	.00	11.73	1.36	.00	.00	.00	.60	-1.00
6	94.74	95.05	904	WASH	1.70	91.51	8.10	1.17	28.18	62.55	7462.00	.56	-1.00
6	95.15	96.94	905	RAW	.00	.00	29.91	1.11	.00	.00	.00	2.47	-1.00
6	95.15	96.94	905	WASH	1.70	67.66	11.93	1.09	28.18	58.80	7209.00	1.18	-1.00
3	111.96	112.60	906	RAW	.00	.00	22.76	1.16	.00	.00	.00	.51	-1.00
3	111.96	112.60	906	WASH	1.70	81.54	16.84	1.07	25.82	56.27	6745.00	.57	-1.00
3	112.88	113.50	908	RAW	.00	.00	27.57	1.21	.00	.00	.00	1.88	-1.00
3	112.88	113.50	908	WASH	1.70	69.65	12.61	.56	27.70	59.13	7213.00	1.31	-1.00
2	119.12	119.72	907	RAW	.00	.00	12.88	1.42	.00	.00	.00	.52	-1.00
2	119.12	119.72	907	WASH	1.70	87.38	8.77	.66	29.15	61.42	7441.00	.57	-1.00
2	121.42	121.64	909	RAW	.00	.00	37.77	1.37	.00	.00	.00	.58	-1.00
2	121.42	121.64	909	WASH	1.70	59.97	21.48	.88	23.87	53.77	6299.00	.52	-1.00
2	122.43	123.52	910	RAW	.00	.00	19.50	.90	.00	.00	.00	.79	-1.00
2	122.43	123.52	910	WASH	1.70	82.23	14.27	.94	27.97	56.82	6968.00	.77	-1.00

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SEAM	TOP	BOT	SAMPLE	ATYP	SG	YIELD	ASH	RESMOIST	VOL	CARB	KCAL	SULF	FSI
9	38.56	39.64	841	RAW	.00	.00	14.29	1.27	.00	.00	.00	3.55	-1.00
9	38.56	39.64	841	WASH	1.70	87.44	8.57	.59	26.88	63.96	7415.00	2.77	-1.00
8	42.58	43.38	842	RAW	.00	.00	24.64	1.22	.00	.00	.00	2.91	-1.00
8	42.58	43.38	842	WASH	1.70	69.55	12.82	1.30	25.06	60.82	6926.00	1.73	-1.00
8	43.60	45.20	843	RAW	.00	.00	10.36	1.45	.00	.00	.00	.99	-1.00
8	43.60	45.20	843	WASH	1.70	89.36	6.76	.89	26.83	65.52	7355.00	.90	-1.00
Q	50.12	51.25	844	RAW	.00	.00	15.79	1.26	.00	.00	.00	.82	-1.00
Q	50.12	51.25	844	WASH	1.70	87.71	8.42	1.33	28.26	61.99	7330.00	.86	-1.00
Q	51.60	52.38	845	RAW	.00	.00	35.42	1.25	.00	.00	.00	2.96	-1.00
Q	51.60	52.38	845	WASH	1.70	57.77	9.73	1.67	27.05	61.55	7083.00	.95	-1.00
7	58.20	58.76	846	RAW	.00	.00	13.53	1.06	.00	.00	.00	1.87	-1.00
7	58.20	58.76	846	WASH	1.70	89.96	6.32	2.06	21.75	69.87	7419.00	1.28	-1.00
7	59.31	59.84	847	RAW	.00	.00	12.48	1.27	.00	.00	.00	.65	-1.00
7	59.31	59.84	847	WASH	1.70	86.39	5.78	1.55	26.71	65.96	7511.00	.64	-1.00
7	60.01	61.93	848	RAW	.00	.00	12.99	1.28	.00	.00	.00	3.21	-1.00
7	60.01	61.93	848	WASH	1.70	85.97	4.66	2.08	28.16	65.10	7577.00	.90	-1.00
6	75.26	76.19	849	RAW	.00	.00	8.43	1.40	.00	.00	.00	.65	-1.00
6	75.26	76.19	849	WASH	1.70	89.58	5.55	3.20	25.98	65.27	7371.00	.63	-1.00
6	76.85	78.20	850	RAW	.00	.00	23.77	1.34	.00	.00	.00	.73	-1.00
6	76.85	78.20	850	WASH	1.70	78.04	8.77	2.75	24.27	64.21	7096.00	.78	-1.00
Q	82.83	83.33	851	RAW	.00	.00	17.88	1.31	.00	.00	.00	.43	-1.00
Q	82.83	83.33	851	WASH	1.70	81.85	9.59	2.53	25.10	62.78	7025.00	.51	-1.00
Q	83.76	83.92	852	RAW	.00	.00	25.29	.98	.00	.00	.00	.36	-1.00
Q	83.76	83.92	852	WASH	1.70	55.23	17.06	.73	29.54	52.67	5857.00	.44	-1.00
Q	96.00	96.35	853	RAW	.00	.00	27.05	1.37	.00	.00	.00	2.32	-1.00
Q	96.00	96.35	853	WASH	1.70	69.53	15.07	1.11	22.59	61.23	6790.00	1.69	-1.00
2	100.54	102.62	854	RAW	.00	.00	23.17	1.39	.00	.00	.00	1.64	-1.00
2	100.54	102.62	854	WASH	1.70	77.21	13.11	.91	25.21	60.77	6817.00	1.30	-1.00
Q	107.70	108.50	855	RAW	.00	.00	39.46	1.18	.00	.00	.00	.95	-1.00
Q	107.70	108.50	855	WASH	1.70	52.72	22.73	.72	24.51	52.04	5902.00	1.18	-1.00

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SEAM	TOP	BOT	SAMPLE	ATYP	SG	YIELD	ASH	RESMOIST	VOL	CARB	KCAL	SULF	FSI
6L	25.30	30.48	827	RAW	.00	.00	11.99	1.76	.00	.00	.00	1.41	-1.00
6L	25.30	30.48	827	WASH	1.70	95.92	7.58	2.39	26.92	63.11	7127.00	1.00	-1.00
6L	30.63	30.82	828	RAW	.00	.00	12.87	1.61	.00	.00	.00	.62	-1.00
6L	30.63	30.82	828	WASH	1.70	91.09	7.23	1.59	26.85	64.33	7392.00	.63	-1.00
6L	31.01	31.15	829	RAW	.00	.00	12.26	1.59	.00	.00	.00	.68	-1.00
6L	31.01	31.15	829	WASH	1.70	90.42	6.72	1.29	26.30	65.69	7522.00	.70	-1.00
6L	31.36	32.52	830	RAW	.00	.00	10.14	1.90	.00	.00	.00	.78	-1.00
6L	31.36	32.52	830	WASH	1.70	92.29	6.20	2.15	25.44	66.21	7413.00	.71	-1.00
3	34.16	34.87	831	RAW	.00	.00	7.12	1.59	.00	.00	.00	.73	-1.00
3	34.16	34.87	831	WASH	1.70	91.49	3.11	1.31	29.21	66.37	7825.00	.74	-1.00
2	40.62	45.80	832	RAW	.00	.00	7.38	1.64	.00	.00	.00	.45	-1.00
2	40.62	45.80	832	WASH	1.70	90.11	6.67	2.39	26.09	64.85	7479.00	.48	-1.00
Q	52.06	52.54	833	RAW	.00	.00	13.06	1.49	.00	.00	.00	2.45	-1.00
Q	52.06	52.54	833	WASH	1.70	87.35	7.72	1.66	23.44	67.18	7352.00	1.22	-1.00

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SEAM	TOP	BOT	SAMPLE	ATYP	SG	YIELD	ASH	RESMOIST	VOL	CARB	KCAL	SULF	FSI
1	120.48	124.15	867	RAW	.00	.00	33.91	1.17	.00	.00	.00	2.93	-1.00
1	120.48	124.15	867	WASH	1.70	59.79	12.06	1.69	26.63	59.62	7088.00	.35	-1.00
1	125.28	126.07	868	RAW	.00	.00	18.33	.91	.00	.00	.00	1.78	-1.00
1	125.28	126.07	868	WASH	1.70	84.36	10.08	.92	27.12	61.88	7310.00	1.46	-1.00
1	126.48	127.04	869	RAW	.00	.00	26.91	1.00	.00	.00	.00	1.35	-1.00
1	126.48	127.04	869	WASH	1.70	77.61	18.07	1.01	26.87	54.05	6588.00	1.03	-1.00
1	128.13	129.45	870	RAW	.00	.00	20.23	1.21	.00	.00	.00	.45	-1.00
1	128.13	129.45	870	WASH	1.70	89.85	16.85	.86	25.79	56.50	6583.00	.46	-1.00

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SEAM	TOP	BOT	SAMPLE	ATYP	SG	YIELD	ASH	RESMOIST	VOL	CARB	KCAL	SULF	FSI
2	28.20	28.85	834	RAW	.00	.00	18.06	4.36	.00	.00	.00	.38	-1.00
2	28.20	28.85	834	WASH	1.70	84.70	13.78	5.95	22.94	57.33	6814.00	.33	-1.00

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SEAM	TOP	BOT	SAMPLE	ATYP	SG	YIELD	ASH	RESMOIST	VOL	CARB	KCAL	SULF	FSI
3	17.21	17.81	835	RAW	.00	.00	29.43	1.06	.00	.00	.00	1.61	-1.00
3	17.21	17.81	835	WASH	1.70	69.26	20.51	1.79	24.49	53.21	6488.00	1.56	-1.00
3	18.46	19.76	836	RAW	.00	.00	16.89	1.02	.00	.00	.00	.78	-1.00
3	18.46	19.76	836	WASH	1.70	85.52	9.30	2.71	27.47	60.52	7283.00	.72	-1.00
2	23.08	24.12	837	RAW	.00	.00	27.71	1.09	.00	.00	.00	2.45	-1.00
2	23.08	24.12	837	WASH	1.70	62.07	11.03	1.41	28.46	59.10	7283.00	1.50	-1.00
2	25.20	26.48	838	RAW	.00	.00	10.57	1.21	.00	.00	.00	.59	-1.00
2	25.20	26.48	838	WASH	1.70	88.01	6.50	2.75	29.40	61.35	7538.00	.47	-1.00
2	26.98	28.14	839	RAW	.00	.00	15.71	1.23	.00	.00	.00	.55	-1.00
2	26.98	28.14	839	WASH	1.70	91.35	11.85	1.52	28.00	58.63	6875.00	.50	-1.00
2	28.36	28.97	840	RAW	.00	.00	16.72	1.21	.00	.00	.00	.97	-1.00
2	28.36	28.97	840	WASH	1.70	84.38	10.66	2.39	28.01	58.94	7221.00	.84	-1.00

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SEAM	TOP	BOT	SAMPLE	ATYP	SG	YIELD	ASH	RESMOIST	VOL	CARB	KCAL	SULF	FSI
Q	59.00	59.40	858	RAW	.00	.00	18.34	1.04	.00	.00	.00	1.41	-1.00
Q	59.00	59.40	858	WASH	1.70	86.71	10.48	1.15	30.99	57.38	7145.00	1.24	-1.00

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SEAM	TOP	BOT	SAMPLE	ATYP	SG	YIELD	ASH	RESMOIST	VOL	CARB	KCAL	SULF	FSI
10	16.44	17.29	856	RAW	.00	.00	14.85	1.10	.00	.00	.00	4.91	-1.00
10	16.44	17.29	856	WASH	1.70	87.78	10.88	.90	30.32	57.90	7019.00	2.39	-1.00
8	35.71	36.86	857	RAW	.00	.00	11.89	1.09	.00	.00	.00	2.25	-1.00
8	35.71	36.86	857	WASH	1.70	90.69	8.22	1.09	29.34	61.35	7301.00	1.28	-1.00
7	64.25	64.62	859	RAW	.00	.00	23.43	.92	.00	.00	.00	2.20	-1.00
7	64.25	64.62	859	WASH	1.70	79.30	13.72	1.64	31.11	53.53	7049.00	1.98	-1.00
7	66.39	66.98	860	RAW	.00	.00	16.14	1.07	.00	.00	.00	2.08	-1.00
7	66.39	66.98	860	WASH	1.70	90.17	12.08	1.14	26.89	59.89	7072.00	1.63	-1.00
7	71.49	72.56	861	RAW	.00	.00	11.46	1.06	.00	.00	.00	2.10	-1.00
7	71.49	72.56	861	WASH	1.70	92.59	8.15	1.31	29.40	61.14	7520.00	1.55	-1.00
6	79.09	81.91	862	RAW	.00	.00	14.62	1.14	.00	.00	.00	.44	-1.00
6	79.09	81.91	862	WASH	1.70	86.14	7.97	.99	28.42	62.62	7432.00	.48	-1.00
6	82.88	84.65	863	RAW	.00	.00	10.88	1.04	.00	.00	.00	1.04	-1.00
6	82.88	84.65	863	WASH	1.70	91.07	7.37	1.37	29.38	61.88	7442.00	.53	-1.00
3	101.32	102.32	864	RAW	.00	.00	29.96	1.01	.00	.00	.00	2.47	-1.00
3	101.32	102.32	864	WASH	1.70	67.68	16.07	1.00	24.69	58.24	6827.00	1.51	-1.00
3	103.32	103.81	865	RAW	.00	.00	21.72	1.10	.00	.00	.00	.99	-1.00
3	103.32	103.81	865	WASH	1.70	80.70	16.33	.99	25.25	57.43	6699.00	1.01	-1.00
2	105.72	110.07	866	RAW	.00	.00	13.11	1.36	.00	.00	.00	.43	-1.00
2	105.72	110.07	866	WASH	1.70	89.20	11.45	.98	27.21	60.36	7043.00	.43	-1.00

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SEAM	TOP	BOT	SAMPLE	ATYP	SG	YIELD	ASH	RESMOIST	VOL	CARB	KCAL	SULF	FSI
1	102.48	103.63	921	RAW	.00	.00	45.85	.79	.00	.00	.00	.56	-1.00
1	102.48	103.63	921	WASH	-1.70	41.27	24.89	.79	26.06	48.26	61.68	.47	-1.00
1	105.84	108.28	922	RAW	.00	.00	33.73	.73	.00	.00	.00	.67	-1.00
1	105.84	108.28	922	WASH	-1.70	63.56	17.70	1.15	27.33	53.82	6759.00	.69	-1.00

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SEAM	TOP	BOT	SAMPLE	ATYP	SG	YIELD	ASH	RESMOIST	VOL	CARB	KCAL	SULF	FSI
1	69.04	70.28	916	RAW	.00	.00	59.17	.94	.00	.00	.00	1.03	-1.00
1	69.04	70.28	916	WASH	-1.70	27.96	20.14	1.58	25.36	52.92	6512.00	.64	-1.00
1	81.76	82.82	917	RAW	.00	.00	30.48	.50	.00	.00	.00	2.05	-1.00
1	81.76	82.82	917	WASH	-1.70	65.51	15.32	1.10	25.35	58.23	6966.00	.77	-1.00
1	83.92	84.44	918	RAW	.00	.00	14.93	.76	.00	.00	.00	.88	-1.00
1	83.92	84.44	918	WASH	-1.70	94.49	11.77	1.00	28.09 ?	59.14	7307.00	.86	-1.00
1	85.58	89.64	919	RAW	.00	.00	36.38	.77	.77	.00	.00	.24	-1.00
1	85.58	89.64	919	WASH	-1.70	61.87	19.10	1.81	24.11	54.98	6554.00	.30	-1.00
1	91.57	92.10	920	RAW	.00	.00	47.32	.69	.00	.00	.00	.42	-1.00
1	91.57	92.10	920	WASH	-1.70	60.08	31.02	1.26	21.40	46.32	5598.00	.60	-1.00

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SEAM	TOP	BOT	SAMPLE	ATYP	SG	YIELD	ASH	RESMOIST	VOL	CARB	KCAL	SULF	FSI
Q	16.78	24.95	923	RAW	.00	.00	36.24	1.17	.00	.00	.00	3.41	-1.00
Q	16.78	24.95	923	WASH	-1.70	54.26	12.51	1.50	27.79	58.20	7131.00	1.99	-1.00
Q	27.22	29.79	924	RAW	.00	.00	28.94	.79	.00	.00	.00	.79	-1.00
Q	27.22	29.79	924	WASH	-1.70	71.76	10.70	1.91	27.46	59.93	7276.00	.72	-1.00
Q	30.00	31.77	925	RAW	.00	.00	28.51	.96	.00	.00	.00	1.51	-1.00
Q	30.00	31.77	925	WASH	-1.70	77.13	12.92	1.28	26.78	59.02	7046.00	.66	-1.00

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SEAM	TOP	BOT	SAMPLE	ATYP	SG	YIELD	ASH	RESMOIST	VOL	CARB	KCAL	SULF	FSI
Q	13.50	14.42	926	RAW	.00	.00	42.08	.72	.00	.00	.00	2.75	-1.00
Q	13.50	14.42	926	WASH	-1.70	62.91	12.77	1.52	26.99	58.72	7060.00	1.97	-1.00
Q	19.96	21.06	927	RAW	.00	.00	45.50	.71	.00	.00	.00	4.98	-1.00
Q	19.96	21.06	927	WASH	-1.70	48.37	26.40	1.38	24.83	47.39	5808.00	2.78	-1.00
8	50.74	52.70	928	RAW	.00	.00	13.06	1.06	.00	.00	.00	1.35	-1.00
8	50.74	52.70	928	WASH	-1.70	95.07	10.27	2.56	26.55	60.62	7118.00	.77	-1.00
7	76.29	77.89	929	RAW	.00	.00	20.90	1.21	.00	.00	.00	4.29	-1.00
7	76.29	77.89	929	WASH	-1.70	79.73	8.04	2.62	30.00	59.34	7372.00	1.44	-1.00
Q	90.07	90.62	930	RAW	.00	.00	26.52	.97	.00	.00	.00	1.93	-1.00
Q	90.07	90.62	930	WASH	-1.70	76.21	11.65	1.77	27.82	58.76	7107.00	1.56	-1.00
Q	93.77	93.92	931	RAW	.00	.00	40.85	.88	.00	.00	.00	.86	-1.00
O	93.77	93.92	931	WASH	-1.70	51.72	26.32	1.62	23.74	48.32	5846.00	1.14	-1.00
O	94.29	95.33	932	RAW	.00	.00	16.66	.61	.00	.00	.00	.96	-1.00
Q	94.29	95.33	932	WASH	-1.70	91.34	11.93	1.01	28.84	58.22	7098.00	.88	-1.00
Q	95.67	95.82	933	RAW	.00	.00	45.30	.57	.00	.00	.00	2.47	-1.00
Q	95.67	95.82	933	WASH	-1.70	54.12	35.94	1.11	21.00	41.95	5058.00	2.44	-1.00
Q	125.10	125.57	934	RAW	.00	.00	22.35	.65	.00	.00	.00	2.46	-1.00
Q	125.10	125.57	934	WASH	-1.70	88.09	14.88	1.25	28.47	55.40	6959.00	1.25	-1.00
O	125.83	126.76	935	RAW	.00	.00	15.24	.67	.00	.00	.00	3.39	-1.00
Q	125.83	126.76	935	WASH	-1.70	87.68	8.78	.83	31.08	59.31	7519.00	1.17	-1.00
Q	126.98	127.55	936	RAW	.00	.00	30.88	.74	.00	.00	.00	.87	-1.00
O	126.98	127.55	936	WASH	-1.70	64.99	16.58	1.11	27.58	54.73	6713.00	.85	-1.00
Q	136.05	136.40	937	RAW	.00	.00	18.06	.66	.00	.00	.00	2.77	-1.00
Q	136.05	136.40	937	WASH	-1.70	89.79	15.58	1.07	28.98	54.37	6962.00	2.25	-1.00
Q	137.97	139.35	938	RAW	.00	.00	20.50	.75	.00	.00	.00	2.94	-1.00
Q	137.97	139.35	938	WASH	-1.70	81.67	13.31	1.19	29.65	55.85	7096.00	1.69	-1.00

TW83D-361

SEAM	TOP	BOT	SAMPLE	ATYP	SG	YIELD	ASH	RESMOIST	VOL	CARB	KCAL	SULF	FSI
1	56.43	57.43	939	RAW	.00	.00	14.95	.51	.00	.00	.00	1.01	-1.00
1	56.43	57.43	939	WASH	-1.70	93.78	12.08	.87	27.39	59.66	7301.00	.79	-1.00
1	67.10	68.02	940	RAW	.00	.00	41.01	.72	.00	.00	.00	.33	-1.00
1	67.10	68.02	940	WASH	-1.70	57.28	19.98	1.26	24.53	54.23	6443.00	.30	-1.00
1	69.05	69.35	941	RAW	.00	.00	21.34	.57	.00	.00	.00	2.65	-1.00
1	69.05	69.35	941	WASH	-1.70	77.65	13.47	.81	31.14	54.58	7186.00	1.27	-1.00
1	71.17	72.20	942	RAW	.00	.00	14.95	.56	.00	.00	.00	1.49	-1.00
1	71.17	72.20	942	WASH	-1.70	93.40	11.69	.94	27.49	59.88	7311.00	.59	-1.00
1	72.40	75.17	944	RAW	.00	.00	32.52	.70	.00	.00	.00	.26	-1.00
1	72.40	75.17	944	WASH	-1.70	73.74	21.55	1.27	24.84	52.34	6332.00	.30	-1.00
1	90.55	91.17	943	RAW	.00	.00	37.12	.64	.00	.00	.00	.27	-1.00
1	90.55	91.17	943	WASH	-1.70	70.90	26.55	1.74	22.64	49.07	5824.00	.24	-1.00

TW83D-362

SEAM	TOP	BOT	SAMPLE	ATYP	SG	YIELD	ASH	RESMOIST	VOL	CARB	KCAL	SULF	FSI
10	106.94	108.42	957	RAW	.00	.00	32.73	.81	.00	.00	.00	1.86	-1.00
10	106.94	108.42	957	WASH	-1.70	66.03	14.31	1.80	29.31	54.58	6916.00	1.54	-1.00
8	126.06	128.71	958	RAW	.00	.00	12.75	.86	.00	.00	.00	2.62	-1.00
8	126.06	128.71	958	WASH	-1.70	93.23	9.32	1.69	29.46	59.53	7343.00	1.87	-1.00
7	149.29	150.49	959	RAW	.00	.00	21.04	.78	.00	.00	.00	2.49	-1.00
7	149.29	150.49	959	WASH	-1.70	79.65	6.96	1.25	32.27	59.52	7617.00	1.69	-1.00
6	158.28	158.66	960	RAW	.00	.00	8.38	.80	.00	.00	.00	2.08	-1.00
6	158.28	158.66	960	WASH	-1.70	97.35	7.09	2.06	29.96	60.89	7582.00	1.60	-1.00
6	158.88	159.28	961	RAW	.00	.00	27.39	.90	.00	.00	.00	1.57	-1.00
6	158.88	159.28	961	WASH	-1.70	68.41	8.83	1.86	28.94	60.37	7419.00	1.00	-1.00
6	159.38	160.67	962	RAW	.00	.00	16.34	.92	.00	.00	.00	1.72	-1.00
6	159.38	160.67	962	WASH	-1.70	92.05	12.47	2.87	25.70	58.96	6972.00	.51	-1.00

TW83D-363

SEAM	TOP	BOT	SAMPLE	ATYP	SG	YIELD	ASH	RESMOIST	VOL	CARB	KCAL	SULF	FSI
10	16.20	16.97	945	RAW	.00	.00	10.80	.66	.00	.00	.00	2.19	-1.00
10	16.20	16.97	945	WASH	-1.70	92.80	6.52	1.53	33.75	58.20	7661.00	1.83	-1.00
Q	24.80	25.32	946	RAW	.00	.00	64.13	.61	.00	.00	.00	2.68	-1.00
Q	24.80	25.32	946	WASH	-1.70	22.34	23.54	1.54	25.70	49.22	6074.00	3.24	-1.00
Q	56.50	59.24	947	RAW	.00	.00	45.54	.60	.00	.00	.00	.97	-1.00
Q	56.50	59.24	947	WASH	-1.70	46.97	21.61	1.69	24.14	52.56	6298.00	1.26	-1.00
Q	67.47	69.58	948	RAW	.00	.00	20.60	.74	.00	.00	.00	1.77	-1.00
Q	67.47	69.58	948	WASH	-1.70	93.72	17.40	1.65	25.28	55.67	6675.00	1.60	-1.00
Q	80.84	82.68	949	RAW	.00	.00	20.91	1.17	.00	.00	.00	1.47	-1.00
Q	80.84	82.68	949	WASH	-1.70	92.84	16.47	2.67	27.76	53.10	6750.00	1.26	-1.00
Q	90.40	96.20	950	RAW	.00	.00	18.12	1.76	.00	.00	.00	.79	-1.00
Q	90.40	96.20	950	WASH	-1.70	81.62	7.16	2.26	28.07	62.51	7532.00	.58	-1.00
Q	99.85	101.66	951	RAW	.00	.00	10.53	1.01	.00	.00	.00	.43	-1.00
Q	99.85	101.66	951	WASH	-1.70	93.48	7.67	1.61	27.81	62.91	7469.00	.44	-1.00
2	118.90	120.20	952	RAW	.00	.00	56.27	1.17	.00	.00	.00	.41	-1.00
2	118.90	120.20	952	WASH	-1.70	39.96	15.69	2.97	25.12	56.22	6804.00	.52	-1.00
2	121.78	123.77	953	RAW	.00	.00	73.84	1.97	.00	.00	.00	.27	-1.00
2	121.78	123.77	953	WASH	-1.70	7.86	32.20	1.67	22.48	43.65	5371.00	.64	-1.00

TW83D-366

SEAM	TOP	BOT	SAMPLE	ATYP	SG	YIELD	ASH	RESMOIST	VOL	CARB	KCAL	SULF	FSI
Q	112.10	113.07	954	RAW	.00	.00	17.71	.74	.00	.00	.00	2.39	-1.00
Q	112.10	113.07	954	WASH	-1.70	87.70	12.31	1.01	27.74	58.94	7298.00	1.14	-1.00
Q	117.28	118.30	955	RAW	.00	.00	44.87	.83	.00	.00	.00	.50	-1.00
Q	117.28	118.30	955	WASH	-1.70	45.97	26.45	1.25	23.65	48.65	5934.00	.51	-1.00
Q	128.08	129.08	956	RAW	.00	.00	46.22	.95	.00	.00	.00	.16	-1.00
Q	128.08	129.08	956	WASH	-1.70	47.83	25.12	1.18	22.49	51.21	6047.00	.22	-1.00

TW83D-368

SEAM	TOP	BOT	SAMPLE	ATYP	SG	YIELD	ASH	RESMOIST	VOL	CARB	KCAL	SULF	FSI
1	74.03	75.13	968	RAW	.00	.00	25.15	.82	.00	.00	.00	2.23	-1.00
1	74.03	75.13	968	WASH	-1.70	81.80	15.94	.78	28.49	54.79	6989.00	1.35	-1.00
1	81.17	81.51	969	RAW	.00	.00	47.91	.90	.00	.00	.00	.25	-1.00
1	81.17	81.51	969	WASH	-1.70	44.43	28.87	.80	22.67	47.66	5791.00	.31	-1.00
1	91.19	91.70	970	RAW	.00	.00	53.73	.85	.00	.00	.00	.81	-1.00
1	91.19	91.70	970	WASH	-1.70	31.89	27.22	.83	25.25	46.70	5989.00	.50	-1.00
1	94.30	97.75	971	RAW	.00	.00	40.87	.93	.00	.00	.00	.51	-1.00
1	94.30	97.75	971	WASH	-1.70	59.29	22.44	.92	25.47	51.17	6311.00	.71	-1.00
Q	112.38	113.04	972	RAW	.00	.00	53.33	.87	.00	.00	.00	.13	-1.00
Q	112.38	113.04	972	WASH	-1.70	35.19	30.51	1.49	20.90	47.10	5509.00	.19	-1.00

TW83D-369

SEAM	TOP	BOT	SAMPLE	ATYP	SG	YIELD	ASH	RESMOIST	VOL	CARB	KCAL	SULF	FSI
1	38.42	39.54	963	RAW	.00	.00	19.65	.95	.00	.00	.00	1.23	-1.00
1	38.42	39.54	963	WASH	-1.70	92.77	17.57	1.00	27.93	53.50	6982.00	1.13	-1.00
1	44.85	45.26	964	RAW	.00	.00	31.46	.90	.00	.00	.00	.39	-1.00
1	44.85	45.26	964	WASH	-1.70	76.25	19.40	1.24	25.86	53.50	6567.00	.40	-1.00
1	46.38	49.05	965	RAW	.00	.00	27.51	.86	.00	.00	.00	.59	-1.00
1	46.38	49.05	965	WASH	-1.70	84.75	21.44	1.57	25.06	50.93	6325.00	.58	-1.00
1	51.10	51.60	966	RAW	.00	.00	33.57	.92	.00	.00	.00	3.07	-1.00
1	51.10	51.60	966	WASH	-1.70	63.25	20.03	.80	28.28	50.89	6648.00	1.29	-1.00
0	60.84	61.35	967	RAW	.00	.00	45.66	1.08	.00	.00	.00	.17	-1.00
0	60.84	61.35	967	WASH	-1.70	51.12	26.57	1.37	23.43	49.63	5880.00	.22	-1.00

Tx. TELKWA 83(4)A

[redacted]

TW-81D-112

GOATHORN EAST

- RHEOLOGICAL
- ULTIMATE
- ASH ANALYSIS
- ASH FUSION

CONFIDENTIAL

239

SAMPLE IDENTIFICATION

HOLE NO. TW81D-112

SAMPLE NUMBER	SEAM NAME	
1001	10	1+2
1002	9	3+4
1003	8	5+6
1004	7	7+8
1005	6	9+10
1006	5	11+12
1007	4	13+14
1008	3	
1009	2	
1010	5	
1011	4	
1012	3	
1013	3	
1014	2	
81-1164+1165	8	
81-1182 to 1185	3	
81-1168+1169	6	

To: CROWSNEST RESOURCES LTD.,
525 - 3rd Avenue S.W.,
Calgary, Alberta T2P 2M7

ATTN: T. Cole

File No. 23248-1
Date March 23, 1982
Samples Coal

P.O. # CN 20928

Certificate of ASSAY
LORING LABORATORIES LTD.

Page # 1

SAMPLE No.	GEISELER PLASTICITY TESTS						
"Clean Coal"	DDPM	START TEMP (°C)	DDPM	MAXIMUM TEMP (°C)	DDPM	RANGE TEMP (°C)	RANGE
81-1164+1165	1	437	2	448	0	479	42
81-1182-1185	1	430	8	448	0	478	48
81-1168+1169	1	441	1	450	0	478	37

I Hereby Certify THAT THE ABOVE RESULTS ARE THOSE ASSAYS MADE BY ME UPON THE HEREIN DESCRIBED SAMPLES . . . .

Rejects Retained one month.
Pulps Retained one month unless specific arrangements made in advance.

Assayer

To: CROWSNEST RESOURCES LTD.,
525 - 3rd Avenue S.W.,
Calgary, Alberta T2P 2M7

ATTN: T. Cole

File No. 23248-1
Date March 23, 1982
Samples Coal

P.O. # CN 20928

Certificate of ASSAY

LORING LABORATORIES LTD.

Page # 2

SAMPLE No.	DILATATION TEST				
"Clean Coal"	S.T. (^{o}C)	M.D.T. (^{o}C)	M.C. %	M.D. %	G. No.
81-1164+1165	368	-	23% @ 476^{o}	-	-
81-1182-1185	374	-	20% @ 437^{o}	-	-
81-1168+1169	386	-	15% @ 485^{o}	-	-

I Hereby Certify THAT THE ABOVE RESULTS ARE THOSE ASSAYS MADE BY ME UPON THE HEREIN DESCRIBED SAMPLES . . . .

Rejects Retained one month.
Pulps Retained one month unless specific arrangements made in advance.

Assayer

To: CROWSNEST RESOURCES LTD.,
525 - 3rd Avenue S.W.,
Calgary, Alberta T2P 2M7

ATTN: T. Cole

File No. 23118-2
Date March 23, 1982
Samples Coal
P.O. # CN 20928

Certificate of ASSAY
LORING LABORATORIES LTD.

Washed

SAMPLE No.	% H2O	% C	% H	% N	% Ash	% S	% O (diff)
Comp -1.60 Flt							9.999
"Ultimate Analysis"							
"Air Dried"							
TW-81D-112							
1001	.90	70.85	4.08	.51	12.14	1.78	9.74
1002	.77	70.04	4.45	.72	9.05	2.44	12.53
1003	.98	72.37	4.40	.72	8.29	1.35	11.89
1004	1.04	72.84	4.55	.72	8.02	1.36	11.47
1005	2.09	73.00	4.36	1.11	6.19	.75	12.50
1006	1.57	73.50	4.31	.70	6.09	.56	13.27
1007	1.72	74.50	4.34	1.09	5.33	.98	12.04
1008	1.45	74.54	4.63	.80	5.24	.70	12.64
1009	1.40	74.66	4.41	.79	5.62	.53	12.59
1010	1.19	72.71	4.23	.58	9.73	1.16	10.40
1011	1.21	72.36	4.24	.76	10.31	1.07	10.05
1012	.86	65.29	4.25	.55	16.49	1.67	10.89
1013	1.01	71.96	4.57	.77	9.29	.83	11.57
1014	1.17	74.50	4.58	.69	6.19	.64	12.23

* Hydrogen & Oxygen do not include H & O in sample moisture.

I Hereby Certify THAT THE ABOVE RESULTS ARE THOSE ASSAYS MADE BY ME UPON THE HEREIN DESCRIBED SAMPLES . . . .

Rejects Retained one month.
Pulps Retained one month unless specific arrangements made in advance.

Assayer

To: CROWSNEST RESOURCES LTD.,
525 - 3rd Avenue S.W.,
Calgary, Alberta T2P 2M7

ATTN: T. Cole

File No. 23118-1
Date March 5, 1982
Samples Coal Ash
P.O. # CN 20928

Certificate of ASSAY
LORING LABORATORIES LTD.

Page # 3

SAMPLE No.	TELKWA 1.60 FLT			
	1011	1012	1013	1014
"Analysis of Ash"				
%				
SiO2	67.54	69.12	61.80	62.44
Al2O3	19.85	17.20	25.52	24.19
TiO2	1.21	.93	2.08	1.80
Fe2O3	6.29	7.29	2.15	2.57
CaO	.98	.92	3.53	3.22
MgO	.28	.50	.53	.53
Na2O	.65	.59	.92	.84
K2O	.18	.30	.30	.24
P2O5	.49	.02	2.04	2.28
SO3	.51	1.03	.84	.95
Undetermined	-2.02	-2.10	- .29	- .94

I Hereby Certify THAT THE ABOVE RESULTS ARE THOSE ASSAYS MADE BY ME UPON THE HEREIN DESCRIBED SAMPLES . . . .

Rejects Retained one month.

Pulps Retained one month unless specific arrangements made in advance.

D. Endes

Assayer

To: CROWSNEST RESOURCES LTD.,
525 - 3rd Avenue S.W.,
Calgary, Alberta T2P 2M7

ATTN: T. Cole

File No. 23118-1
Date March 5, 1982
Samples Coal Ash
P.O. # CN 20928

Certificate of
ASSAY
LORING LABORATORIES LTD.

Page # 2

SAMPLE No.	1006	1007	1008	1009	1010
	TELKWA 1.60 FLT				
	5	4	3	2	5
"Analysis of Ash"					
%					
SiO2	61.28	58.82	56.76	57.34	64.32
Al2O3	31.57	18.52	28.54	29.30	20.41
TiO2	2.06	.96	1.58	1.79	1.54
Fe2O3	.93	7.72	2.93	2.29	7.01
CaO	.95	6.02	4.51	3.64	1.76
MgO	.45	.99	.99	.90	.75
Na2O	1.05	.92	.92	.92	.84
K2O	.36	.12	.24	.24	.18
P2O5	.04	3.31	1.37	1.19	.31
SO3	.65	2.55	2.33	2.26	1.62
Undetermined	- .66	- .07	+ .17	- .13	-1.26

I Hereby Certify THAT THE ABOVE RESULTS ARE THOSE ASSAYS MADE BY ME UPON THE HEREIN DESCRIBED SAMPLES . . . .

Rejects Retained one month.
Pulps Retained one month unless specific arrangements made in advance.

D. Eckel
Assayer

To: CROWSNEST RESOURCES LTD.,
525 - 3rd Avenue S.W.,
Calgary, Alberta T2P 2M7

ATTN: T. Cole

File No. 23118-1
Date March 5, 1982
Samples Coal Ash
P.O. # CN 20928

Certificate of ASSAY

LORING LABORATORIES LTD.

Page # 1

SAMPLE No.	TELKWA 1.60 FLT 1001	1002	1003	1004	1005
"Analysis of Ash" %					
SiO2	67.46	51.32	50.72	59.72	60.96
Al2O3	12.49	16.64	26.46	22.68	27.60
TiO2	1.44	1.57	2.42	2.36	1.58
Fe2O3	9.72	21.16	9.72	8.15	2.36
CaO	2.94	2.52	2.94	1.74	1.99
MgO	.82	.86	1.33	.75	.55
Na2O	.57	.65	.92	.81	.97
K2O	.24	.24	.30	.24	.42
P2O5	.02	.72	.69	.53	1.17
SO3	2.15	2.15	2.48	1.42	.82
Undetermined	-2.15	-2.17	-2.02	-1.60	-1.58

I Hereby Certify THAT THE ABOVE RESULTS ARE THOSE ASSAYS MADE BY ME UPON THE HEREIN DESCRIBED SAMPLES . . . .

Rejects Retained one month.
Pulps Retained one month unless specific arrangements made in advance.

D. Eidelt
Assayer

To: CROWSNEST RESOURCES LTD.,
525 - 3rd Avenue S.W.,
Calgary, Alberta T2P 2M7

ATTN: T. Cole

File No. 23118
Date February 24, 1982
Samples Coal Ash
P.O. # CN 20928

Certificate of
ASSAY
LORING LABORATORIES LTD.

Page # 7

SAMPLE No.	OXIDIZING ATMOSPHERE I.D. (F^o)	H=W (F^o)	H=½W (F^o)	Fluid (F^o)
"Ash Fusion Analysis"				
Clean Coal				
TU-81D-112				
1001	2628	+2650	+2650	+2650
1002	2408	2533	+2650	+2650
1003	+2650	+2650	+2650	+2650
1004	+2650	+2650	+2650	+2650
1005	+2650	+2650	+2650	+2650
1006	+2650	+2650	+2650	+2650
1007	2368	2388	2418	2453
1008	2413	2448	2493	2573
1009	+2650	+2650	+2650	+2650
1010	+2650	+2650	+2650	+2650
1011	+2650	+2650	+2650	+2650
1012	+2650	+2650	+2650	+2650
1013	+2650	+2650	+2650	+2650
1014	+2650	+2650	+2650	+2650

I Hereby Certify THAT THE ABOVE RESULTS ARE THOSE ASSAYS MADE BY ME UPON THE HEREIN DESCRIBED SAMPLES . . . .

Rejects Retained one month.

Pulps Retained one month unless specific arrangements made in advance.

Assayer

TO: CROWSNEST RESOURCES LTD.,
525 - 3rd Avenue S.W.,
Calgary, Alberta T2P 2M7

ATTN: T. Cole

File No. 23118
Date February 24, 1982
Samples Coal Ash
P.O. # CN 20928

Certificate of ASSAY

LORING LABORATORIES LTD.

Page # 6

"Ash Fusion Analysis"

Clean Coal

TW-81D-112

SAMPLE No.	I.D. (F°)		H=W (F°)		H=½W (F°)		Fluid (F°)	
	REDUCING ATMOSPHERE							
		INIT		SOFT		HEMI		FLUID
1001	2543	[illegible]	2573	1411 c°	2603	1428 c°	+2650	1454 c
1002	2274	1245 c°	2294	1256 c°	2333	1278 c°	2388	1308 c
1003	2598	1425 c°	+2650	1454 c°	+2650	1454 c°	+2650	1454 c
1004	+2650	1454 c°	+2650	1454 c°	+2650	1454 c°	+2650	1454 c
1005	+2650	[illegible]	+2650	[illegible]	+2650	[illegible]	+2650	1454 c
1006	+2650	1454 c°	+2650	[illegible]	+2650	1454 c°	+2650	1454 c
1007	2294	1256 c°	2308	1264 c°	2413	1322 c°	2443	1339 c
1008	2363	1295 c°	2388	1308 c°	2408	1320 c	2483	1361 c
1009	+2650	[illegible]	+2650	[illegible]	+2650	[illegible]	+2650	1454 c
1010	2643	1450 c°	+2650	[illegible]	+2650	[illegible]	+2650	1454 c
1011	+2650	[illegible]	+2650	1454 c°	+2650	[illegible]	+2650	1454 c
1012	+2650	[illegible]	+2650	[illegible]	+2650	[illegible]	+2650	[illegible]
1013	+2650	[illegible]	+2650	[illegible]	+2650	[illegible]	+2650	[illegible]
1014	+2650	1454 c°	+2650	[illegible]	+2650	[illegible]	+2650	[illegible]

I Hereby Certify THAT THE ABOVE RESULTS ARE THOSE ASSAYS MADE BY ME UPON THE HEREIN DESCRIBED SAMPLES....

Rejects Retained one month.

Pulps Retained one month unless specific arrangements made in advance.

Assayer

TK-TELKWA 83(4)A

[redacted]

NQ CORE WASHABILITY

CONFIDENTIAL

239

CLIENT: CROWS NEST RESOURCES LIMITED
PROJECT: TELKWA CORE SAMPLE NOS. 77 + 99,
HOLE NO. 237, SEAM 6
LAB NO: 5340
DATE: JUNE 28, 1983

AS RECEIVED SAMPLE ATTRITED FOR 2 MINUTES (DRY ATTRITION)
(MINUS 9.5MM AFTER 2 MINUTES ATTRITION = 34.7%)
HEAD RAW H.G.I. = 57

SIZE & RAW ANALYSES

SIZE FRACTION (MM)	WT%	RM%	ASH%	S%	WT%	ASH%
+ 19 *	50.30	1.90	16.90	0.91	50.30	16.90
19 X 1.7*	35.80	1.70	19.60	1.42	86.10	18.02
1.7 X 0.3*	9.80	2.30	17.70	1.26	95.90	17.99
0.3 X 0 *	4.10	2.40	22.60	1.42	100.00	18.18

LARGEST PARTICLE SIZE (+19MM) = 70 MM LONG

FLOAT - SINK ANALYSIS, air dried basis: +19MM

S.G. FRACTION	WT%	ASH%	S%	CUMULATIVE WT%	CUMULATIVE ASH%
FLOAT - 1.60	84.80	9.30	0.93	84.80	9.30
1.60 - 1.70	3.90	37.10	0.53	88.70	10.52
1.70 - 1.80	NIL	—	—	88.70	10.52
1.80 - SINK	11.30	67.10	0.90	100.00	16.92

FLOAT - SINK ANALYSIS, air dried basis: 19MM X 1.7MM

S.G. FRACTION	WT%	ASH%	S%	CUMULATIVE WT%	CUMULATIVE ASH%
FLOAT - 1.60	79.20	7.60	0.85	79.20	7.60
1.60 - 1.70	3.60	37.20	1.31	82.80	8.89
1.70 - 1.80	1.20	45.70	1.20	84.00	9.41
1.80 - SINK	16.00	72.90	4.29	100.00	19.57

Birtley Coal
& Minerals Testing

CLIENT: CROWS NEST RESOURCES LIMITED
PROJECT: TELKWA CORE SAMPLE NOS. 77 + 99,
HOLE NO. 237, SEAM 6
LAB NO: 5340
DATE: JUNE 28, 1983

FLOAT - SINK ANALYSIS, air dried basis: 1.7MM X 0.5MM

S.G. FRACTION	WT%	ASH%	S%	CUMULATIVE WT%	CUMULATIVE ASH%
FLOAT - 1.60	81.30	5.80	0.85	81.30	5.80
1.60 - 1.70	1.60	32.70	1.96	82.90	6.32
1.70 - 1.80	1.20	33.90	2.11	84.10	6.78
1.80 - SINK	15.90	74.50	3.02	100.00	17.55

FROTH-FLOTATION TEST, as received basis: 0.3MM X 0

PRODUCT	WT%	ASH%	S%	CUMULATIVE WT%	CUMULATIVE ASH%
STAGE I	23.10	9.10	0.81	23.10	9.10
STAGE II	8.00	20.60	1.09	31.10	12.06
TAILINGS	68.90	26.80	1.63	100.00	22.22

PULP DENSITY = 10%
REAGENT/DOSAGE = 4:1 = KEROSENE:MIBC/0.50 LB/TONNE
CONDITIONING = 60 SECONDS
STAGE I = FIRST MINUTE FROTH
STAGE II = SECOND MINUTE FROTH

+ ANALYSIS ON AIR DRIED BASIS (ON COMPOSITE OF S.G. FRACTIONS)
* ANALYSIS ON AS RECEIVED BASIS

Birtley Coal
& Minerals Testing

CLIENT: CROWS NEST RESOURCES LIMITED
PROJECT: TELKWA CORE SAMPLE NO. 300
HOLE NO. 231, SEAM 5
LAB NO: 5341
DATE: JUNE 28, 1983

AS RECEIVED SAMPLE ATTRITED FOR 2-1/2 MINUTES (DRY ATTRITION)
(MINUS 9.5MM AFTER 2 MINUTES ATTRITION = 32.0%; AFTER 2-1/2 MINUTES = 36.1%)
HEAD RAW H.G.I. = 59

SIZE & RAW ANALYSES

SIZE FRACTION (MM)	WT%	RM%	ASH%	S%	CUMULATIVE WT%	CUMULATIVE ASH%
+ 19 *	53.10	2.10	11.10	0.38	53.10	11.10
19 X 1.7 *	30.10	1.70	10.20	0.43	83.20	10.77
1.7 X 0.3 *	12.20	3.00	6.70	0.45	95.40	10.25
0.3 X 0 *	4.60	2.60	9.50	0.45	100.00	10.22

LARGEST PARTICLE SIZE (+19MM) = 70 MM LONG

FLOAT - SINK ANALYSIS, air dried basis: +19MM

S.G. FRACTION	WT%	ASH%	S%	CUMULATIVE WT%	CUMULATIVE ASH%
FLOAT - 1.60	93.60	8.10	0.39	93.60	8.10
1.60 - 1.70	NIL	—	—	93.60	8.10
1.70 - 1.80	2.20	44.70	0.22	95.80	8.94
1.80 - SINK	4.20	60.70	0.17	100.00	11.11

FLOAT - SINK ANALYSIS, air dried basis: 19MM X 1.7MM

S.G. FRACTION	WT%	ASH%	S%	CUMULATIVE WT%	CUMULATIVE ASH%
FLOAT - 1.60	94.10	7.10	0.44	94.10	7.10
1.60 - 1.70	1.40	36.70	0.26	95.50	7.53
1.70 - 1.80	0.70	42.60	0.23	96.20	7.79
1.80 - SINK	3.80	70.30	0.17	100.00	10.16

Birtley Coal
& Minerals Testing

CLIENT: CROWS NEST RESOURCES LIMITED
PROJECT: TELKWA CORE SAMPLE NO. 300
HOLE NO. 231, SEAM 5
LAB NO: 5341
DATE: JUNE 28, 1983

FLOAT - SINK ANALYSIS, air dried basis: 1.7MM X 0.3MM

S.G. FRACTION	WT%	ASH%	S%	CUMULATIVE WT%	CUMULATIVE ASH%
FLOAT - 1.60	95.50	4.50	0.47	95.50	4.50
1.60 - 1.70	0.90	28.50	0.28	96.40	4.72
1.70 - 1.80	0.80	36.80	0.24	97.20	4.99
1.80 - SINK	2.80	56.60	0.14	100.00	6.43

FROTH-FLOTATION TEST, as received basis: 0.3MM X 0

PRODUCT	WT%	ASH%	S%	CUMULATIVE WT%	CUMULATIVE ASH%
STAGE I	31.20	4.70	0.48	31.20	4.70
STAGE II	7.40	6.90	0.45	38.60	5.12
TAILINGS	61.40	12.00	0.44	100.00	9.35

PULP DENSITY = 10%
REAGENT/DOSAGE = 4:1 = KEROSENE:MIBC/0.50 LB/TONNE
CONDITIONING = 60 SECONDS
STAGE I = FIRST MINUTE FROTH
STAGE II = SECOND MINUTE FROTH

+ ANALYSIS ON AIR DRIED BASIS (ON COMPOSITE OF S.G. FRACTIONS)
x ANALYSIS ON AS RECEIVED BASIS

Birtley Coal
& Minerals Testing

CONFIDENTIAL

TELKWA SURVEY REPORT

DECEMBER 1983

00239
part 5

CONTENTS

CROW'S NEST RESOURCES LIMITED

TELKWA PROJECT

COORDINATES OF 1983 DRILL HOLES
SURVEYED: 16 - 20 DECEMBER 1983

NOTE: ELEVATIONS are on Geodetic Datum and are derived by reciprocal trigonometric levelling from bench marks 1523, 3324, 1629, 2565, 2968 & 2574

COORDINATES are on UTM (Zone 9) grid and are derived from Government stations :
CREEK, MUCHO, PABLO, P.CON. 18, POWER, & TACK.

JANUARY 10, 1984

D.E. WATSON B.C.L.S.

FILE 4275

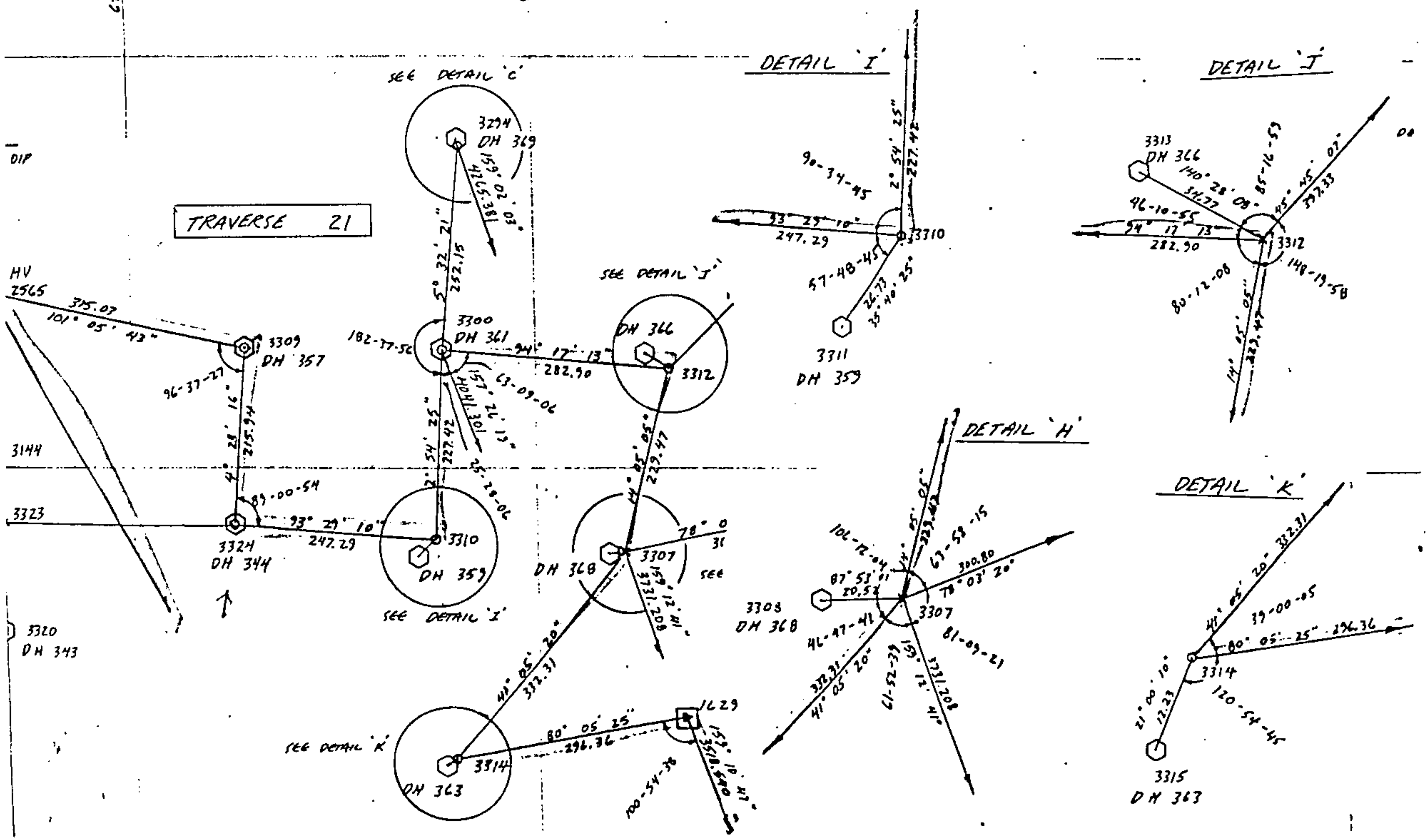
w

DECEMBER 1983

TELKWA PROJECT

DRILL HOLES

DRILL HOLE	TAG #	NORTHING	EASTING	TAG ELEVATION	GROUND ELEVATION
DH354	3293	6,055,912.47	622,890.32	660.86	660.9
DH355	3296	6,055,411.37	622,898.28	685.73	685.7
DH356	3299	6,055,886.27	622,453.74	670.44	670.4
DH357	3309	6,055,645.92	621,641.44	686.92	686.8
DH358	3316	6,055.461.26	622,403.53	684.79	684.8
DH359	3311	6,055,393.88	621,855.85	694.42	694.4
DH360	3302	6,054,759.74	622,190.14	722.33	722.3
DH361	3300	6,055,642.72	621,882.97	684.48	684.5
DH362	3319	6,054,457.38	622,094.53	740.93	740.9
DH363	3315	6,055,137.13	621,886.45	703.99	704.0
DH364	3317	6,055,145.15	622,617.83	692.60	692.5
DH365	3303	6,054,359.06	622,395.49	749.44	749.4
DH366	3313	6,055,639.21	622,135.11	685.96	686.0
DH367	3306	6,054,422.69	622,863.66	752.81	752.8
DH368	3308	6,055,398.25	622,088.73	690.00	690.0
DH369	3297	6,055,901.67	621,902.38	675.23	675.2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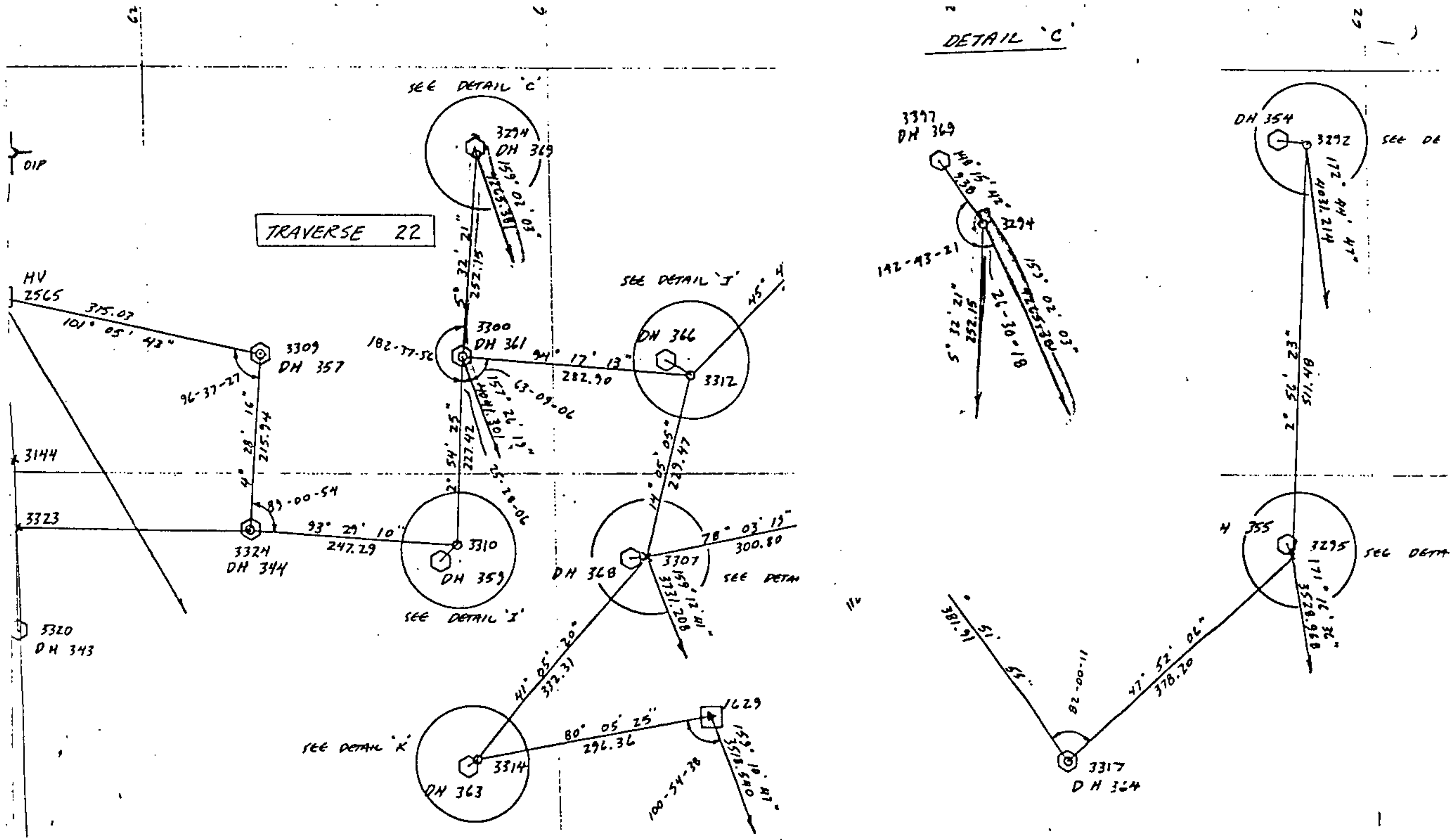
DETAIL 'I'
DETAIL 'J'
DETAIL 'H'
DETAIL 'K'
SEE DETAIL 'C'
SEE DETAIL 'J'
SEE DETAIL 'I'
SEE DETAIL 'K'
HV 2565
315.07
101° 05' 43"
3309 DH 357
96-37-27
4° 28' 16"
215.94
3144
3323
3324 DH 344
89-00-54
93° 29' 10"
247.29
3310
DH 359
3294 DH 369
159° 02' 03"
5° 32' 21"
252.15
3300 DH 361
182-37-56
94° 17' 13"
282.90
63-09-06
2° 54' 25"
227.42
DH 366
3312
14° 05' 05"
229.47
DH 368
3307
159° 12' 41"
331.208
41° 05' 20"
332.31
3314
DH 363
80° 05' 25"
296.36
1629
100-54-38
3320 DH 343
90-34-45
3311 DH 359
57-48-45
3313 DH 366
140° 28' 08"
85-16-53
45° 45' 07"
46-10-55
148-19-58
80-12-08
106-12-04
87° 53' 11"
3303 DH 368
63-58-15
300.80
78° 03' 20"
46-47-41
61-52-39
81-09-21
39-00-05
21° 00' 10"
12.23
120-54-45
3315 DH 363

TRAVERSE 21 - SURVEY STATIONS

STATION	DESCRIPTION	BEARING	GRID DISTANCE	STATION ELEVATION	GROUND ELEVATION	NORTHING	EASTING	MAP SHEET
1523	75cm Iron Pin			1216.59	1216.2	6,051,910.71	623,433.52	B3SE
		331-01-58	4338.60					
2565	75cm Iron Pin			676.72	676.7	6,055,706.54	621,332.30	
		101-05-43	315.03					
3309	D.H. 357			686.92	686.8	6,055,645.92	621,641.44	
		184-28-16	215.94					
3324	D.H. 344 - Nail & Tag			694.27	694.3	6,055,430.68	621,624.49	
		93-29-10	247.29					
3310	75cm Iron Pin			693.22	693.2	6,055,415.60	621,871.44	
		2-54-25	227.42					
3300	D.H. 361			684.48	684.5	6,055,642.72	621,882.97	B3NW
		94-17-13	282.90					
3312	20cm Spike			687.41	687.4	6,055,621.58	622,165.08	
		194-05-05	229.47					
3307	20cm Spike			691.28	691.3	6,055,399.00	622,109.24	
		221-05-20	332.31					
3314	75cm Iron Pin			704.89	704.9	6,055,148.55	621,890.84	
		80-05-25	296.36					
1629	75cm Iron Pin			698.26	698.3	6,055,199.49	622,182.90	
		159-10-47	3518.54					
1523	75cm Iron Pin			1216.59	1216.2	6,051,910.71	623,433.52	B3SE

TRAVERSE 21 - TAG NUMBERS

STATION	DESCRIPTION	BEARING	GRID DISTANCE	STATION ELEVATION	GROUND ELEVATION	NORTHING	EASTING	MAP SHEET
3309	Drill Hole 357			686.92	686.8	6,055,645.92	621,641.44	B3NW
3310	75cm Iron Pin	215-40-25	26.73	693.22	693.2	6,055,415.60	621,871.44	B3NW
	Drill Hole 359-Tag 3311			694.42	694.4	6,055,393.88	621,855.85	
3300	Drill Hole 361			684.48	684.5	6,055,642.72	621,882.97	B3NW
3312	20cm Spike	300-28-08	34.77	687.41	687.4	6,055,621.58	622,165.08	B3NW
	Drill Hole 366-Tag 3313			685.96	686.0	6,055,639.21	622,135.11	
3307	20cm Spike	267-53-01	20.52	691.28	691.3	6,055,399.00	622,109.24	B3NW
	Drill Hole 368-Tag 3308			690.00	690.0	6,055,398.25	622,088.73	
3314	75cm Iron Pin	201-00-10	12.23	704.89	704.9	6,055,148.55	621,890.84	B3NW
	Drill Hole 363-Tag 3315			703.99	704.0	6,055,137.13	621,886.45	



TRAVERSE 22
DETAIL 'C'
SEE DETAIL 'C'
SEE DETAIL 'J'
SEE DETAIL 'I'
SEE DETAIL 'K'
HV 2565
OIP
3309
DH 357
3300
DH 361
3294
DH 369
DH 366
3312
3310
DH 359
3324
DH 344
3144
3323
3320
DH 343
3307
DH 368
3314
DH 363
1629
3292
DH 354
3295
3317
315.07
101° 05' 43"
96-37-27
4° 28' 16"
215.94
89-00-54
93° 29' 10"
247.29
5° 32' 21"
252.15
182-37-56
94° 17' 13"
282.90
2° 54' 25"
227.42
63-09-06
14° 05' 05"
229.47
78° 03' 13"
300.80
41° 05' 20"
332.31
80° 05' 25"
296.36
100-54-38
47° 52' 06"
378.20
82-00-11
2° 54' 23"
511.48
172° 44' 47"
192-43-21
81-30-18

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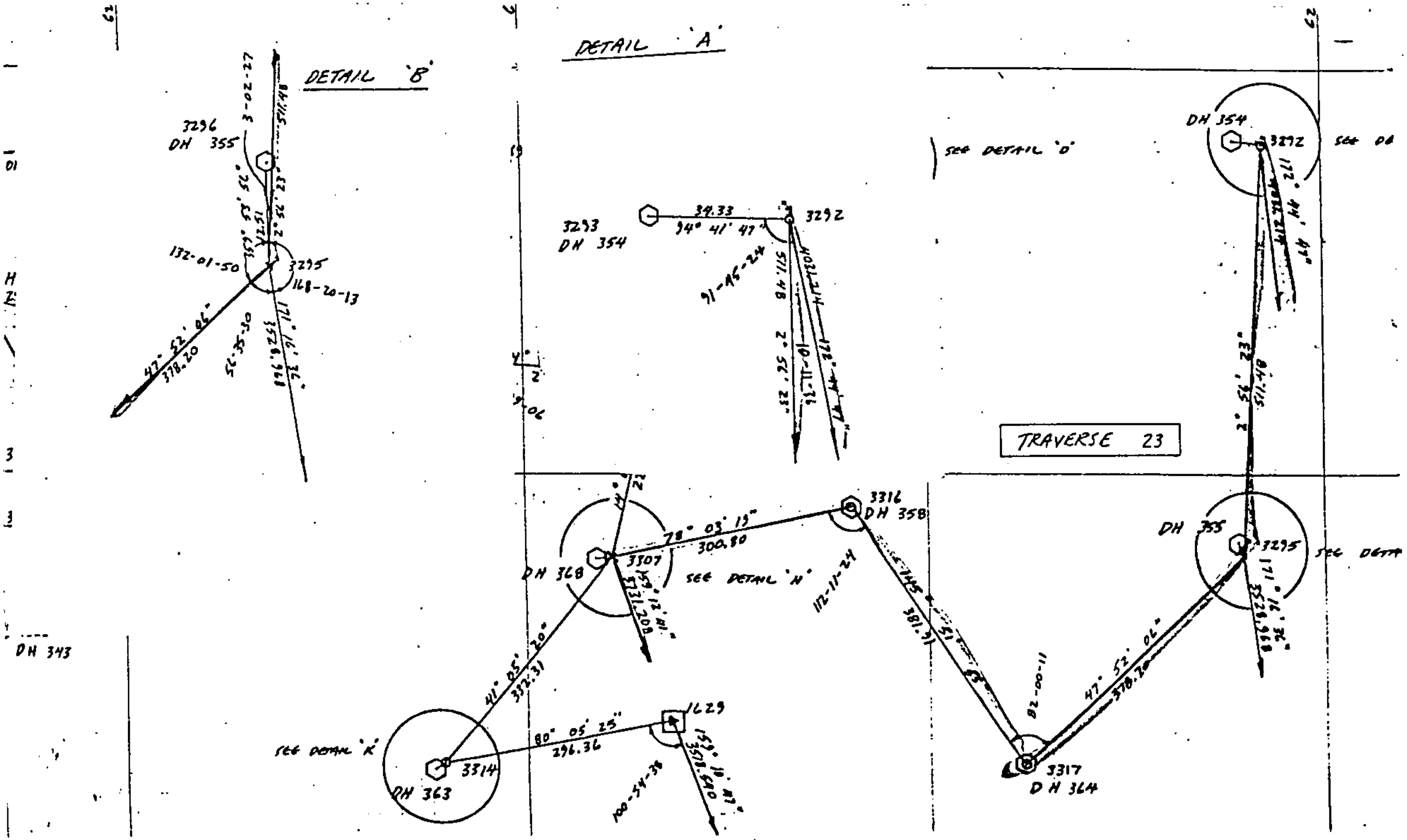
TRAVERSE 22 - SURVEY STATIONS

STATION	DESCRIPTION	BEARING	GRID DISTANCE	STATION ELEVATION	GROUND ELEVATION	NORTHING	EASTING	MAP SHEET
1523	75cm Iron Pin			1216.59	1216.2	6,051,910.71	623,433.52	83SE
		337-26-19	4041.30					
3300	D.H. 361			684.48	684.5	6,055,642.72	621,882.97	83NW
		5-32-21	252.15					
3294	75cm Iron Pin			675.25	675.2	6,055,893.70	621,907.31	83NW
		159-02-03	4265.38					
1523	75cm Iron Pin			1216.59	1216.2	6,051,910.71	623,433.52	83SE

TRAVERSE 22 - TAG NUMBERS

STATION	DESCRIPTION	BEARING	GRID DISTANCE	STATION ELEVATION	GROUND ELEVATION	NORTHING	EASTING	MAP SHEET
3294	75cm Iron Pin			675.25	675.2	6,055,893.70	621,907.31	83NW
		328-15-42	9.38					
	Drill Hole 369-Tag 3297			675.23	675.2	6,055,901.67	621,902.38	B3NW

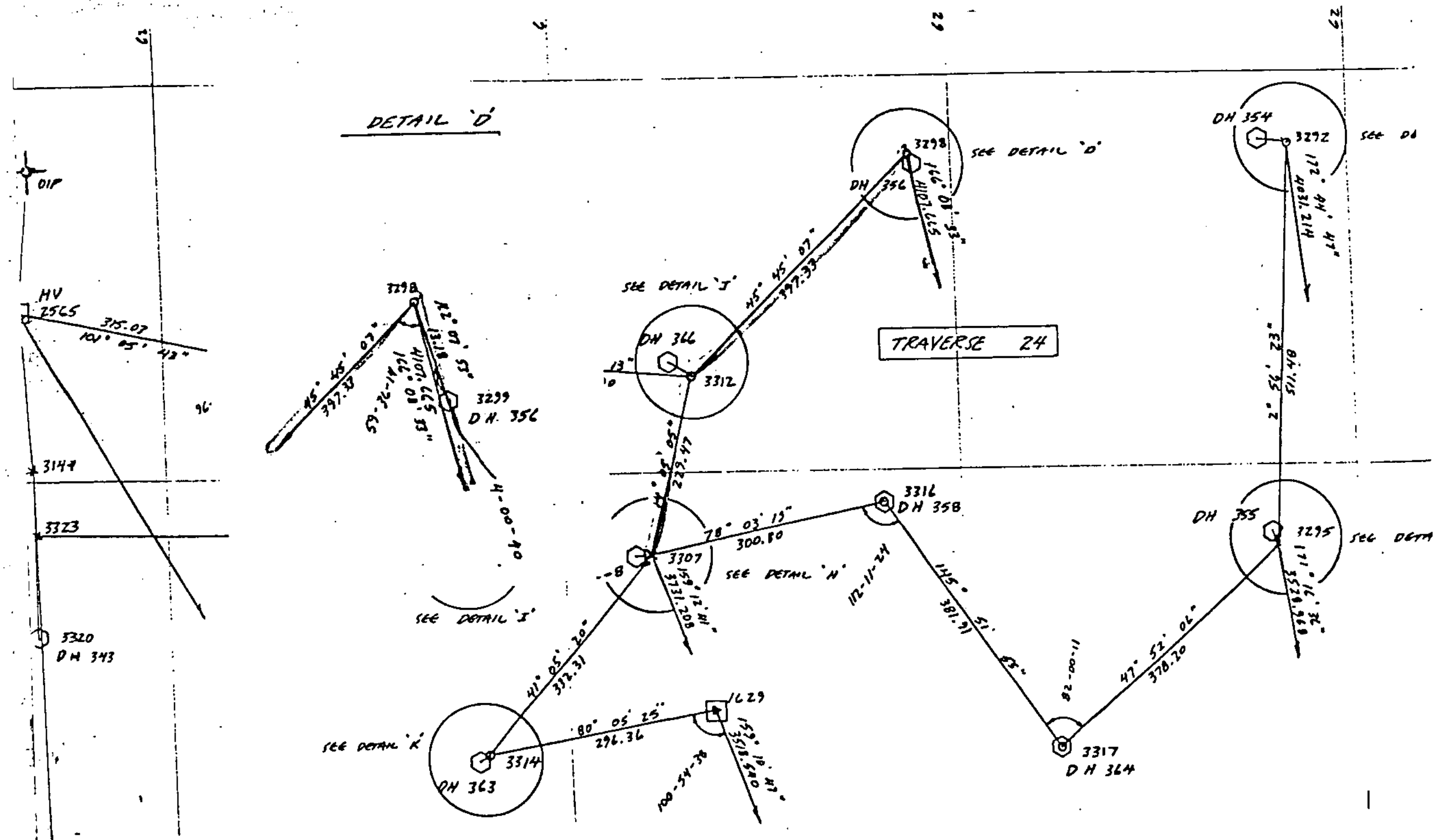

DETAIL 'B'
3296
DH 355
3-02-27
511.48
2° 56' 23"
359° 53' 52"
12.51
132-01-50
3295
168-20-13
47° 52' 06"
378.20
56-35-30
171° 16' 32"
898.352
DETAIL 'A'
3293
DH 354
34.33
94° 41' 47"
3292
91-45-24
511.48
2° 56' 23"
TRAVERSE 23
DH 354
3292
SEE DETAIL 'D'
DH 355
3295
3316
DH 358
78° 03' 13"
300.80
DH 368
3307
SEE DETAIL 'H'
112-11-24
41° 05' 20"
352.31
80° 05' 25"
296.36
1629
100-54-36
SEE DETAIL 'K'
3314
DH 363
82-00-11
47° 52' 06"
378.20
3317
DH 364
DH 343

TRAVERSE 23 - SURVEY STATIONS

STATION	DESCRIPTION	BEARING	GRID DISTANCE	STATION ELEVATION	GROUND ELEVATION	NORTHING	EASTING	MAP SHEET
1523	75cm Iron Pin			1216.59	1216.2	6,051,910.71	623,433.52	B3SE
		339-12-41	3731.21					
3307	20cm Spike			691.28	691.3	6,055,399.00	622,109.24	
		78-03-19	300.80					
3316	D.H. 358			684.79	684.8	6,055,461.26	622,403.53	
		145-51-55	381.91					
3317	D.H. 364			692.60	692.5	6,055,145.15	622,617.83	B3NW
		47-52-06	379.20					
3295	20cm Spike			686.64	686.6	6,055,398.86	622,898.31	
		2-56-23	511.48					
3292	75cm Iron Pin			661.34	661.3	6,055,909.66	622,924.54	
		172-44-47	4031.21					
1523	75cm Iron Pin			1216.59	1216.2	6,051,910.71	623,433.52	B3SE

TRAVERSE 23 - TAG NUMBERS

STATION	DESCRIPTION	BEARING	GRID DISTANCE	STATION ELEVATION	GROUND ELEVATION	NORTHING	EASTING	MAP SHEET
3316	Drill Hole 358			684.79	684.8	6,055,461.26	622,403.53	B3NW
3317	Drill Hole 364			692.60	692.5	6,055,145.15	622,617.83	B3NW
3295	20cm Spike	359-53-56	12.51	686.64	686.6	6,055,398.86	622,898.31	B3NW
	Drill Hole 355-Tag 3296			685.73	685.7	6,055,411.37	622,898.28	
3292	75cm Iron Pin	274-41-47	34.33	661,34	661.3	6,055,909.66	622,924.54	B3NW
	Drill Hole 354-Tag 3293			660.86	660.9	6,055,912.47	622,890.32	

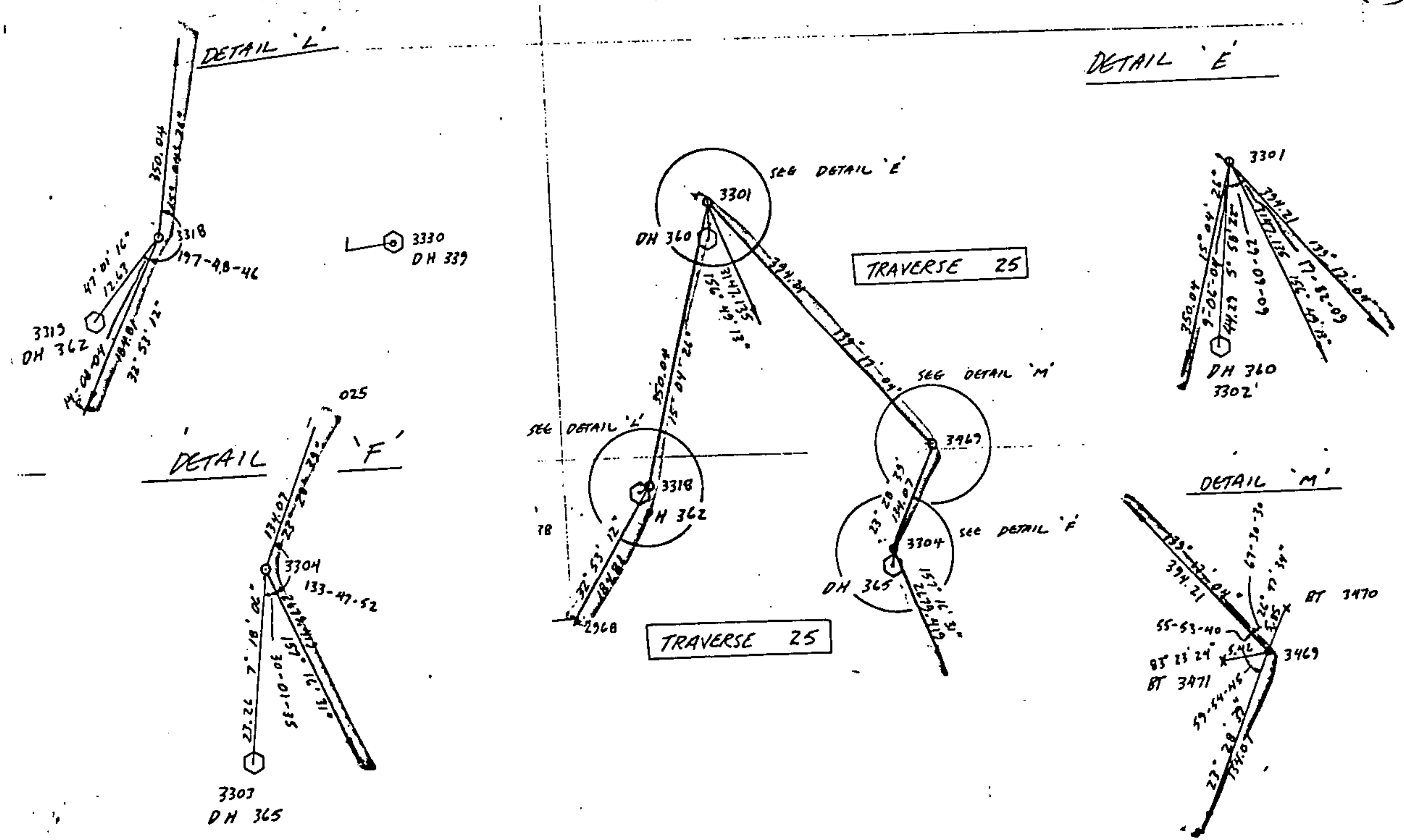

DETAIL 'D'
TRAVERSE 24
SEE DETAIL 'D'
SEE DETAIL 'J'
SEE DETAIL 'H'
SEE DETAIL 'I'
SEE DETAIL 'K'
DH 354
3292
DH 356
3298
DH 366
3312
DH 355
3295
3316
DH 358
3307
3317
DH 364
3314
DH 363
1629
3299
D.H. 356
HV
2565
3144
3323
3320
DH 343
OIP
45° 45' 07"
397.33
78° 03' 13"
300.80
145° 51'
381.91
47° 52' 06"
378.20
41° 05' 20"
332.31
80° 05' 25"
296.36
315.07
101° 05' 43"
2° 52' 23"
511.48
82-00-11
112-11-24
100-54-38
4-00-40

TRAVERSE 24 - SURVEY STATIONS

STATION	DESCRIPTION	BEARING	GRID DISTANCE	STATION ELEVATION	GROUND ELEVATION	NORTHING	EASTING	MAP SHEET
3307	20cm Spike			691.28	691.3	6,055,399.00	622,109.24	B3NW
		14-05-05	229.47					
3312	20cm Spike			687.41	687.4	6,055,621.58	622,165.08	B3NW
		45-45-07	397.33					
3298	75cm Iron Pin			670.72	670.7	6,055,898.82	622,449.70	B3NW
		166-08-33	4107.67					
1523	75cm Iron Pin			1216.59	1216.2	6,051,910.71	623,433.52	B3SE

TRAVERSE 24 - TAG NUMBERS

STATION	DESCRIPTION	BEARING	GRID DISTANCE	STATION ELEVATION	GROUND ELEVATION	NORTHING	EASTING	MAP SHEET
3298	75cm Iron Pin	162-07-53	13.18	670.72	670.7	6,055,898.82	622,449.70	B3NW
	Drill Hole 356-Tag 3299			670.44	670.4	6,055,886.27	622,453.74	B3NW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197-48-46
3330
DH 339
3319
DH 362
DETAIL 'F'
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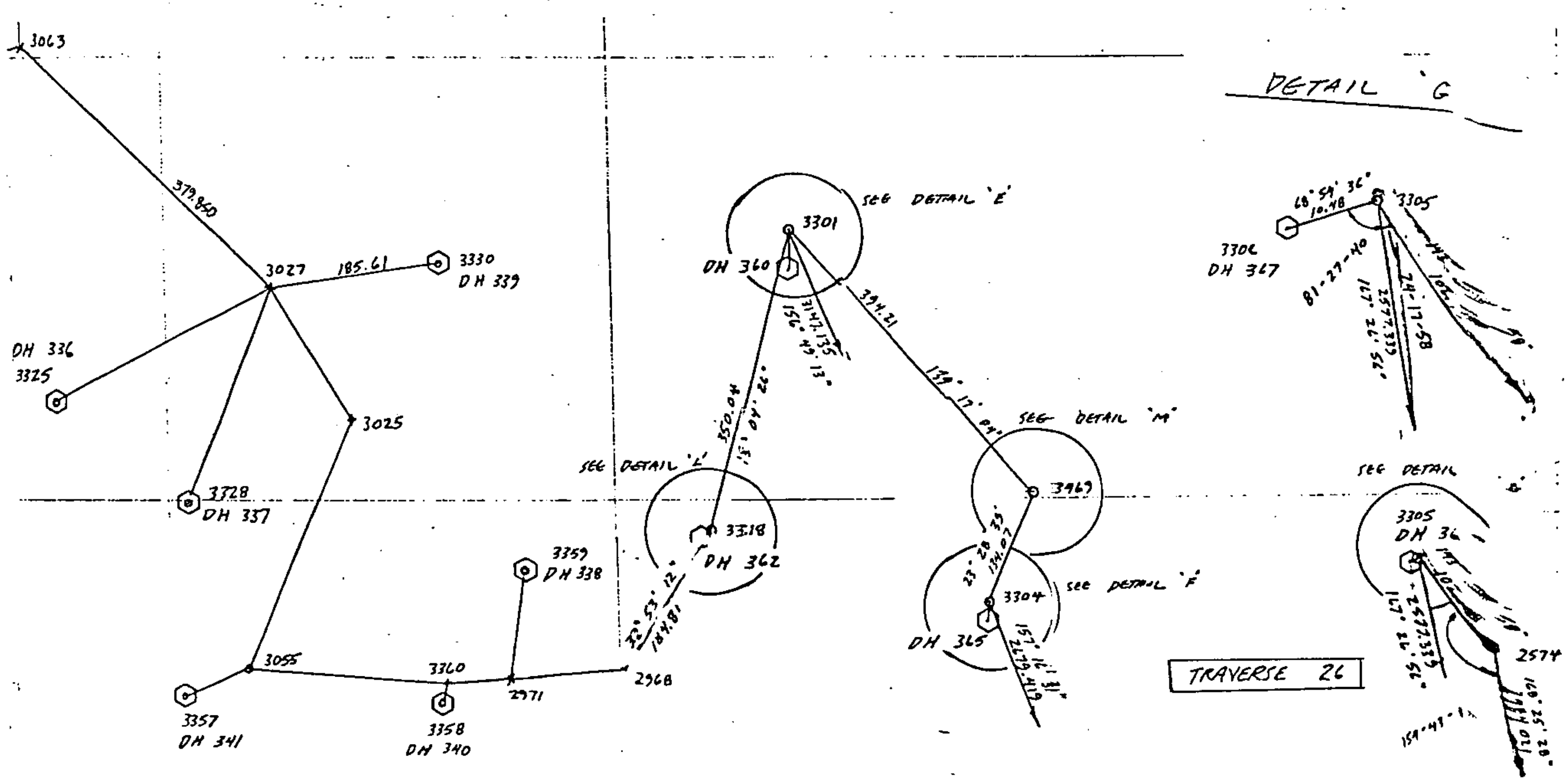
3304
133-47-52
3303
DH 365
TRAVERSE 25
SEE DETAIL 'E'
3301
DH 360
SEE DETAIL 'L'
3318
DH 362
2968
TRAVERSE 25
SEE DETAIL 'M'
3469
3304
SEE DETAIL 'F'
DH 365
DETAIL 'E'
3301
DH 360
3302
DETAIL 'M'
BT 3470
3469
55-53-40
BT 3471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DH 337
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3358
DH 340
2971
2968
3359
DH 338
SEE DETAIL 'E'
3301
DH 360
394.21
350.04
SEE DETAIL 'L'
3318
DH 362
SEE DETAIL 'M'
3969
3304
DH 365
SEE DETAIL 'F'
DETAIL 'G'
3305
3306
DH 367
SEE DETAIL
2574
TRAVERSE 26

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TRAVERSE 25 - TAG NUMBERS

STATION	DESCRIPTION	BEARING	GRID DISTANCE	STATION ELEVATION	GROUND ELEVATION	NORTHING	EASTING	MAP SHEET
3318	75cm Iron Pin Drill Hole 362-Tag 3319	227-01-16	12.63	740.40 740.93	740.4 740.9	6,054,465.99 6,054,457.38	622,103.77 622,094.53	B3NW
3301	75cm Iron Pin Drill Hole 360-Tag 3302	185-58-22	44.29	722.62 722.33	722.6 722.3	6,054,803.79 6,054,759.74	622,194.75 622.190.14	B3NW
3469	75cm Iron Pin Tag 3470 -BT 30cm Poplar Tag 3471 -BT 10cm Spruce	26-47-34 263-23-24	5.85 5.42	743.43 743.20 744.84	743.3 741.7 743.4	6,054,505.06 6,054,510.28 6,054,504.43	622,451.84 622,454.48 622,446.46	B3NW
3304	75cm Iron Pin Drill Hole 365-Tag 3303	187-18-06	23.26	747.33 749.44	747.3 749.4	6,054,382.13 6,054,359.06	622,398.45 622,395.49	B3NW

TRAVERSE 25 - SURVEY STATIONS

STATION	DESCRIPTION	BEARING	GRID DISTANCE	STATION ELEVATION	GROUND ELEVATION	NORTHING	EASTING	MAP SHEET
2968	20cm Spike	32-53-12	184.81	751.85	752.0	6,054,310.91	622,003.50	
3318	75cm Iron Pin	15-04-26	350.04	740.40	740.4	6,054,465.99	622,103.77	
3301	75cm Iron Pin	139-17-04	394.21	722.62	722.6	6,054,803.79	622,194.75	B3NW
3469	75cm Iron Pin	203-28-39	134.07	743.43	743.3	6,054,505.06	622,451.84	
3304	75cm Iron Pin	157-16-31	2679.42	747.33	747.3	6,054,382.13	622,398.45	
1523	75cm Iron Pin			1216.59	1216.2	6,051,910.71	623,433.52	B3SE

TRAVERSE 26 - SURVEY STATIONS

STATION	DESCRIPTION	BEARING	GRID DISTANCE	STATION ELEVATION	GROUND ELEVATION	NORTHING	EASTING	MAP SHEET
1523	75cm Iron Pin			1216.59	1216.2	6,051,910.71	623,433.52	B3SE
		347-26-56	2577.34					
3305	75cm Iron Pin			752.40	752.4	6,054,426.46	622,873.44	B3NW
		143-08-58	102.78					
2574	(HV-36) Nail & Tag			756.43	756.4	6,054,344.21	622,935.08	B3NW
		168-25-28	2484.02					
1523	75cm Iron Pin			1216.59	1216.2	6,051,910.71	623,433.52	B3SE

TRAVERSE 26 - TAG NUMBERS

STATION	DESCRIPTION	BEARING	GRID DISTANCE	STATION ELEVATION	GROUND ELEVATION	NORTHING	EASTING	MAP SHEET
3305	75cm Iron Pin			752.40	752.4	6,054,426.46	622,873.44	B3NW
		248-54-36	10.48					
	Drill Hole 367-Tag 3306			752.81	752.8	6,054,422.69	622,863.66	

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