Technical Specification 5.6.8

Palo Verde Nuclear Generating Station

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May 05, 2011

ATTN: Document Control Desk
U. S. Nuclear Regulatory Commission
Washington, DC 20555-0001

Subject: Palo Verde Nuclear Generating Station (PVNGS) Unit 3
Docket No. STN 50-530
License No. NPF-74
Steam Generator Tube Inspection Report

Attached please find the PVNGS Unit 3 Steam Generator Tube Inspection Report prepared and submitted by Arizona Public Service Company (APS) pursuant to Technical Specification (TS) Reporting Requirement 5.6.8. This report describes steam generator tube inspection and plugging results from the Unit 3 fifteenth refueling outage.

By copy of this letter, this submittal is being provided to the NRC Region IV Regional Administrator and the PVNGS Senior Resident Inspector. No commitments are being made to the NRC by this letter.

Should you have questions regarding this submittal, please contact Russell A. Stroud, Licensing Section Leader, at (623) 393-5111.

Sincerely,

TNW/RAS/CJS/gat

Attachment

cc: (with attachment)

E. E. Collins Jr.	NRC Region IV Regional Administrator
L. K. Gibson	NRC NRR Project Manager for PVNGS
J. R. Hall	NRC NRR Senior Project Manager
M. A. Brown	NRC Senior Resident Inspector for PVNGS

A001
NRR

Attachment

Unit 3 – 15th Refueling Outage
Steam Generator Tube Inspection Report

Palo Verde Nuclear Generating Station

UNIT 3

U3R15

ARIZONA PUBLIC SERVICE
P. O. BOX 52034
PHOENIX, AZ 85072

Prepared by: Douglas B Hansen Date: 11-1-10

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Reviewed by: Warren Leavitt 5/4/2011

Approved by: Mark Radspinner 5/4/2011

Commercial Service Date: 1-8-88

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UNIT 3

STEAM GENERATOR EDDY CURRENT

U3 R15 Refueling Outage

1.0 Summary

This report is intended to satisfy the requirements of PVNGS Technical Specifications 5.6.8 for the submittal of a Steam Generator Tube Inspection Report. The steam generator (SG) eddy current examination for the 15th refueling outage in Unit 3 (U3R15) was conducted during October 2010. Mode 4 entry of Unit 3 Cycle 16 was entered on November 6, 2010. The initial examination plan for both steam generators is listed in Table 1. This table summarizes the examinations performed for each of the various categories, examination types, extents, and the number of tubes or tube locations completed. This examination was a 100% full length tubing inspection.

The examinations resulted in a total of **0** tubes being plugged in SG 31, and **6** tubes being plugged in SG 32. A description of the previous plugging history is noted in Table 2, and Appendix E provides a map of all tubes plugged.

2.0 Scope of Examinations Performed

The original examination plan was developed based on the "PVNGS Steam Generator Degradation Assessment" developed per PVNGS Procedure 81DP-9RC01 as required by NEI 97-06. In addition, possible damage mechanisms were reviewed along with the specific requirements set forth in Procedure 73TI-9RC01 and the PVNGS Technical Specifications. The plan was finalized to include 100% bobbin examinations.

This original plan, along with the examinations performed as a result of bobbin indications noted, is summarized in Table 1 of this report.

3.0 Active Degradation Mechanisms

The only degradation noted during the examinations was determined to be wear. Section 8.0 contains further discussions relating to this mechanism. Table 2 summarizes the results into categories and sections B and C itemizes all indications reported.

4.0 NDE Techniques Utilized

The following table documents the site qualified techniques utilized during this outage:

BOBBIN Examination								
Damage Mechanism	Location	ETSS NO	QUAL STATUS	ORIENTATION	BC DET	BC SIZE	TECH	Comment
Wear	BWs, VSs, ECs,	96004.1 Rev. 13 4-2010	SITE QUALIFIED	NA	Y	Y	Volt DIFF	None
Wear	Loose Part	27091.2 Rev. 0 8-2007	SITE QUALIFIED	NA	Y	N	Volt DIFF	None

Rotating Coil Examinations								
Damage Mechanism	Location	ETSS NO	QUAL STATUS	ORIENTATION	RC DET	RC SIZE	TECH	Comment
Wear	BWs, ECs, VSs	96910.1 Rev. 10 8-2006	SITE QUALIFIED	NA	Y	Y	+POINT	None

The eddy current examinations were performed by Westinghouse Electric Company using the Core Star OMNI 200 eddy current instrument. Westinghouse Anser software was utilized to acquire the data along with the Pegasys robotic manipulator. This robot was configured with a dual guide tube in each of the hot and cold legs.

The tubing was examined with Zetec manufactured bobbin coil probes and Zetec rotating coil (RC) style probes. Probe diameters were 0.590" to 0.610". Plus Point RC probes were used for the characterization of non-quantifiable or distorted bobbin indications.

Fiber optic cable was used from containment to the data acquisition room located at the PVNGS North Annex. Primary and secondary analysis was all performed on site. The Primary and Secondary Resolution Analysts, Independent Review Analysts, and data management were also located at PVNGS in the North Annex. Westinghouse provided the data acquisition and primary data analysis. Anatec International, Inc. provided the secondary data analysis.

Each individual from Westinghouse and Anatec International, Inc. who performed data analysis was required to complete and pass a PVNGS site specific Eddy Current Data Analysis Course as well as an associated performance and written examination. All individuals performing data analysis were also required to have Qualified Data Analyst (QDA) certification. Per 73TI-9RC01, all certification records are maintained in the Nuclear Information Records Management System.

5.0 Indication Summary

A detailed listing of the location and measured sizes of all indications recorded is included in Appendix B and C. A summary of these indication results is located in Table 2. In addition, Appendix A contains a reference drawing of steam generator support locations and report legend.

There were no indications that were identified as linear during this outage.

6.0 Tubes Plugged

A summary of the tubes plugged is located in Table 2. Only 6 tubes were plugged this outage. The damage mechanism was noted as wear. All 6 of the tube locations were in the central cavity area.

Appendix E contains a map that details the plugged tube location along with the previously plugged tubes.

7.0 Plug History

A summary of the number and percentage of tubes plugged is also located in Table 2.

8.0 Condition Monitoring

Per the Steam Generator Program, as defined in PVNGS Procedure 81DP-9RC01, a condition monitoring evaluation was conducted by PVNGS Engineering. The results of the eddy current examinations are provided in Section 5.0. An engineering evaluation of the as-found condition of inservice tubes did not reveal any degradation exceeding the threshold values for structural and leakage integrity. As such, all steam generator performance criteria were satisfied for Unit 3 Cycle 15. No tube pulls or insitu pressure testing were required based on the results of the examinations.

Foreign Object Search and Retrieval (FOSAR)

Tubesheet Annulus and Blowdown Lane FOSAR was conducted using a power cart mounted with a remotely operated camera and retrieval tooling. The applicable requirements of Revision 3 of the EPRI Steam Generator Integrity Assessment Guidelines Section 10.5, Secondary Side Visual Inspections, were applied for the FOSAR inspections.

The only loose parts observed by FOSAR in SG31 during U3R15 were sludge rocks. 8 sludge rocks were observed on the top of the tubesheet annulus (cold leg side), 3 of which were retrieved. 5 sludge rocks were observed in the blowdown lane (cold leg side), none of these were retrieved. A sludge rock was also observed wedged between tubes R109C24 & R110C25 (SG31 cold leg). An unsuccessful attempt was made to retrieve the wedged sludge rock, but the sludge rock dislodged from between the tubes and dropped further into the bundle. None of the sludge rocks described above was observed during eddy current examinations. The sludge rock that was wedged between tubes R109C24 & R110C25 was ECT tested for possible wear indications (bobbin) and none were found. Furthermore, no wear was detected in the top of tubesheet annulus region (hot and cold leg side) or blowdown lane (hot and cold leg side).

The only loose parts observed by FOSAR in SG32 during U3R15 were sludge rocks. 7 sludge rocks were observed in the blowdown lane (cold leg side), none of these were retrieved. 2 sludge

rocks were observed in the blowdown lane (hot leg side), none of these were retrieved. None of the sludge rocks described above was observed during eddy current examinations. No wear was detected in the top of tubesheet annulus region (hot and cold leg side) or blowdown lane (hot and cold leg side).

Also included in the scope of the FOSAR effort was an inspection of the blowdown patch plate welds that were found to be cracked in Unit 2 during U2R15. The inspections confirmed that all 4 patch plates (2 per SG) were cracked, and that the cracks were similar to those found in the Unit 2 SGs (i.e., the patch plate to lug weld was completely compromised and the patch plate to divider plate welds were completely intact). A previous evaluation concluded that there is a high probability that these cracked welds existed in the Unit 3 SGs. The evaluation concluded that, with the presence of the cracked welds, the patch plates in the Unit 3 SGs will continue to perform their design function and that the probability of loose parts being formed is remote. Thus, there is a very low risk that the cracked welds will affect the structural or leakage integrity of tubes in these steam generators.

Potential Loose Parts (PLPs)

As noted in Appendix D, there were no PLP locations identified in Steam Generator 31. In Steam Generator 32, one tube (R156C65) was reported to contain a PLP bobbin signal in the vicinity of the Flow Distribution Plate (FDP). Plus point examinations were performed at this tube and the tubes surrounding it. As a result, PLP signals were reported for a total of three tubes (R153C64, R154C65, R156C65) all at the FDP. A review of the U3R14 (Spring, 2009) bobbin data was performed and it indicated similar bobbin signals with no change. PVNGS has historically taken the position that if a loose part is detected by ECT or FOSAR without the presence of wear, it is reasonable to conclude that the required conditions to promote wear do not exist. Per the PVNGS SG Program, trending of these locations will continue in future outages.

Finally, PVNGS Procedure 81DP-9RC01 requires, per the EPRI *PWR Steam Generator Examination Guidelines*, that a visual inspection of the previously installed steam generator plugs be performed to assess plug integrity. Additionally, the Examination Guidelines Section 6.9.1 states – "Verify the location and presence of existing in-service plugs." The conduct of the plug location and integrity verification was performed in U3R15 per procedure 81CP-9RC40. A review of the inspection results indicated that all plugs were accounted for and no evidence of potential plug leakage was identified.

TABLE 1

EXAMINATION SUMMARY

SCOPE DESCRIPTION		SG 31	SG 32
Exam Description	**Extents**	**Scope**	**Scope**
COLD LEG BOBBIN	TEC-VS3	12290	12288
COLD LEG BOBBIN	TEC-BW1	1230	1230
HOT LEG BOBBIN	TEH-VS3	12290	12288
HOT LEG BOBBIN	TEH-BW1	1230	1230
HOT STRAIGHT RC	VARIOUS	7	16
HOT U & SQUARE BEND RC	VARIOUS	155	167
COLD STRAIGHT RC	VARIOUS	25	8
COLD U & SQUARE BEND RC	VARIOUS	29	44

Notes:
1. none

TABLE 2

INDICATION SUMMARY

DAMAGE MECHANISM	STEAM GENERATOR 31	STEAM GENERATOR 32
WEAR		
0% - 19%	146	150
20% - 29%	6	5
30% - 39%	1	1
≥ 40%	0	1
PLUGGED	(0)	(6)
Possible Loose Parts (RC)		
PLI	0	0
PLP	0	3
PLUGGED	(0)	(0)
Volumetric Indications		
SVI/MVI	0	0
PLUGGED	(0)	(0)
PREVENTATIVE	(0)	(0)
PLUGGED	**(0)**	**(6)**
TOTAL PLUGGED / %	**(60 / 0.5%)**	**(68 / 0.5%)**

NOTES

1. Numbers in (X) are tubes numbers plugged in each category
2. The above represent the numbers of tubes; not indications

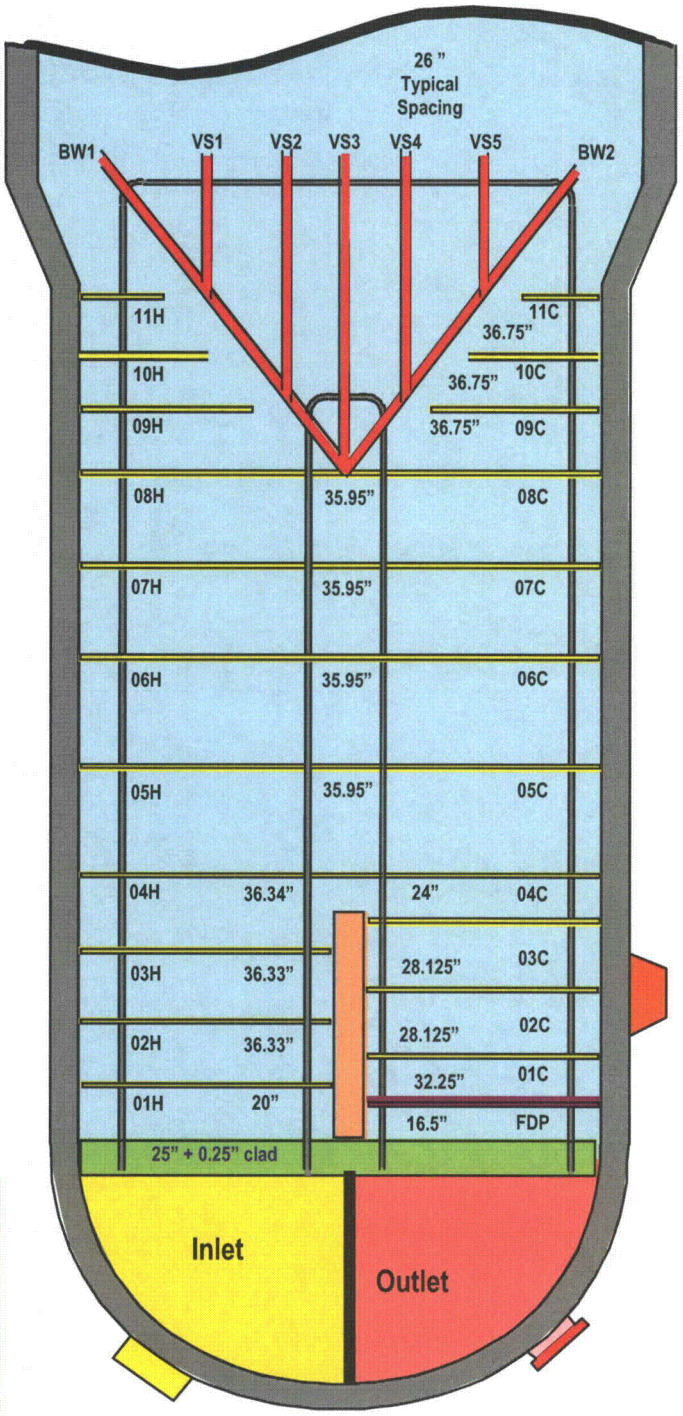
APPENDIX A

TUBE SUPPORT DIAGRAM,

LEGEND, and ANALYSIS CODES

PVNGS Steam Generator

REPLACEMENTS



Center of 08H to 08C

Row 1 - 17.415
Row 2 - 19.736
Row 3 - 22.056
Row 4 - 24.377
Row 5 - 26.698
Row 6 - 29.019

LEGEND

ROW:	Indicates the row number of a given tube.
COL:	Indicates the column number of a given tube.
VOLTS:	Indicates the peak-to-peak voltage of a given indication response.
DEG:	The measured phase angle of a given indication response.
IND:	Indicates the analysis code or PCT for percent
PER or PCT:	The percent through the tube wall of a given indication
CHN:	Indicates the channel used to make the call
LOCN:	Gives indication location at INCH1 to INCH2 relative to known landmarks such as supports, vertical straps, and batwings. Typical location codes are as follows:

#1 Vertical Strap VS1
#1 Batwing.....BW1
#1 Support Plate in Hot Leg 01H
#7 Support Plate in Cold Leg.....07C
Top Tube Sheet Cold Leg.....TSC
Tube End Hot Leg.....TEH
Tube End Cold Leg.....TEC

CRLEN:	Indicates the flaw length, used to identify the length of a wear indication
CRWID:	Indicates the flaw width, typically used for cracks only
CEG:	Indicates the flaw length, typically used for cracks only
BEGT and ENDT:	Indicates the beginning and of the test; together they document the examination extent
PDIA:	Documents the probe diameter
PTYPE:	Documents the probe type
CAL:	Indicates calibration number
L:	Indicates the leg the examination was conducted from
COM:	This comment field is utilized to document comments

Analysis CODES:

Absolute Drift	ADI
Bulge	BLG
Dented Buff Mark	DBM
Deposit	DEP
Dent	DNT
Data Quality Acceptance	DQA
Distorted Support Signal With Indication	DSI
Distorted Top of Tubesheet With Indication	DTI
Geometric Indication	GEO
ID Chatter	IDC
Indication Not Found	INF
Indication Not Reportable	INR
Multiple Axial Indication	MAI
Manufacturer Burnishing Mark	MBM
Mixed Mode Indication	MMI
Multiple Circumferential Indication	MCI
Multiple Volumetric Indication	MVI
No Detectable Defect	NDD
No Discontinuity Found	NDF
Non-Quantifiable Indication	NQI
No Tube Sheet Expansion	NTE
Obstructed	OBS
Over Expanded	OXP
Previous Bobbin Call	PBC
Possible Deposit	PDP
Positive Identification	PID
Positive Identification Verified	PIV
Possible Loose Part with Indication	PLI
Possible Loose Part	PLP
Previous RC Call	PRC
Possible Support Anomaly	PSA
Possible Support Indication	PSI
Permeability Variation Noise	PVN
Retest Bad Data	RBD
Retest Identification Check	RIC
Retest with Magnetic Bias RC Probe	RMB
Single Axial Indication	SAI
Single Circumferential Indication	SCI
Single Volumetric Indication	SVI
Senior (Lead) Analysis Review	SR
Sludge	SLG
To Be Plugged	TBP
Volumetric Indication	VOL

APPENDIX B

STEAM GENERATOR 31

SUMMARY DATA SHEETS

ROW	COL	VOLTS	DEG	IND	PER	CHN	LOCN	INCH1	INCH2	CRLEN	BEGT	ENDT	PDIA	PTYPE	CAL	L	UTIL1	UTIL2
62	9	.18	18	PCT	9	P2	VS3	-.71			VS3	TEC	.610	NBAZ2	14	C		
87	24	.26	54	PCT	9	P2	VS2	-1.05			VS3	TEH	.610	NBAZ2	47	H		
89	24	.52	82	PCT	15	P2	VS2	-.96			VS3	TEH	.610	NBAZ2	47	H		
89	24	1.06	93	PCT	18	P3	VS2	-.99		.23	VS2	VS2	.580	NPUFZ	65	H		
109	24	.35	121	PCT	12	P2	VS3	-.66			VS3	TEC	.610	NBAZ2	13	C		
109	24	.81	99	PCT	15	P3	VS3	-1.03		.22	VS3	VS3	.580	NPUFZ	61	H		
81	26	.30	108	PCT	10	P2	VS4	-.87			VS3	TEC	.610	NBAZ2	14	C		
81	26	.90	87	PCT	16	P3	VS4	-1.14		.24	VS4	VS4	.580	NPUFZ	70	C		DQA
82	27	.19	120	PCT	9	P2	VS2	.63			VS3	TEH	.610	NBAZ2	48	H		
82	27	.99	93	PCT	17	P3	VS2	.67		.17	VS2	VS2	.580	NPUFZ	65	H		
89	28	.26	41	PCT	10	P2	VS4	.90			VS3	TEC	.610	NBAZ2	13	C		
89	28	1.13	86	PCT	19	P3	VS4	.90		.54	VS4	VS4	.580	NPUFZ	70	C		DQA
85	30	.51	122	PCT	18	P2	VS2	-.94			VS3	TEH	.610	NBAZ2	46	H		
85	30	1.49	96	PCT	24	P3	VS2	-1.07		.31	VS2	VS2	.580	NPUFZ	65	H		
87	30	.24	91	PCT	8	P2	VS4	.89			VS3	TEC	.610	NBAZ2	14	C		
120	33	.64	81	PCT	18	P2	VS4	.90			VS3	TEC	.610	NBAZ2	18	C		
120	33	1.06	100	PCT	19	P3	VS4	1.03		.36	VS4	VS4	.580	NPUFZ	70	C		DQA
132	39	.20	135	PCT	7	P2	11C	-.44			VS3	TEC	.610	NBAZ2	22	C		
124	43	.39	63	PCT	12	P2	VS4	-.75			VS3	TEC	.610	NBAZ2	24	C		
124	43	1.36	93	PCT	18	P3	VS4	-.75		.58	VS4	VS4	.580	NPUFZ	69	C		DQA
127	44	.14	74	PCT	6	P2	VS4	-.32			VS3	TEC	.610	NBAZ2	23	C		
127	44	.52	280	PCT	11	P3	VS4	-.32		.28	VS4	VS4	.580	NPUFZ	69	C		DQA
90	45	.27	142	PCT	11	P2	VS3	.91			VS3	TEC	.610	NBAZ2	17	C		
90	45	.81	88	PCT	15	P3	VS3	1.20		.14	VS3	VS3	.580	NPUFZ	65	H		
116	45	.23	77	PCT	9	P2	VS3	.70			VS3	TEC	.610	NBAZ2	23	C		
ROW	COL	VOLTS	DEG	IND	PER	CHN	LOCN	INCH1	INCH2	CRLEN	BEGT	ENDT	PDIA	PTYPE	CAL	L	UTIL1	UTIL2

ROW	COL	VOLTS	DEG	IND	PER	CHN	LOCN	INCH1	INCH2	CRLEN	BEGT	ENDT	PDIA	PTYPE	CAL	L	UTIL1	UTIL2
115	48	.17	66	PCT	7	P2	VS3	-.52			VS3	TEC	.610	NBAZ2	23	C		
132	49	.45	95	PCT	15	P2	VS4	.57			VS3	TEC	.610	NBAZ2	23	C		
132	49	.38	151	PCT	15	P2	VS2	-.71			VS3	TEH	.610	NBAZ2	38	H		
132	49	1.17	102	PCT	19	P3	VS2	-.70		.51	VS2	VS2	.580	NPUFZ	61	H		
132	49	1.32	92	PCT	22	P3	VS4	.83		.64	VS4	VS4	.580	NPUFZ	70	C		DQA
126	51	.29	82	PCT	9	P2	VS3	-.56			VS3	TEC	.610	NBAZ2	24	C		
126	51	1.46	103	PCT	29	P2	VS3	.71			VS3	TEC	.610	NBAZ2	24	C		
126	51	.67	101	PCT	12	P3	VS3	-.90		.29	VS3	VS3	.580	NPUFZ	61	H		
126	51	1.20	93	PCT	20	P3	VS3	1.07		.42	VS3	VS3	.580	NPUFZ	61	H		DQA
126	53	.40	103	PCT	14	P2	VS3	-.27			VS3	TEC	.610	NBAZ2	23	C		
126	53	.77	105	PCT	21	P2	VS3	1.01			VS3	TEC	.610	NBAZ2	23	C		
126	53	.88	100	PCT	16	P3	VS3	-.67		.31	VS3	VS3	.580	NPUFZ	61	H		
126	53	1.34	99	PCT	22	P3	VS3	.86		.26	VS3	VS3	.580	NPUFZ	61	H		
125	54	.28	89	PCT	9	P2	VS3	-.70			VS3	TEC	.610	NBAZ2	24	C		
126	55	.40	118	PCT	12	P2	VS3	.85			VS3	TEC	.610	NBAZ2	24	C		
126	55	.35	118	PCT	11	P2	VS4	-1.00			VS3	TEC	.610	NBAZ2	24	C		
126	55	.57	83	PCT	11	P3	VS3	1.21		.16	VS3	VS3	.580	NPUFZ	61	H		
126	55	1.02	100	PCT	14	P3	VS4	-.94		.13	VS4	VS4	.580	NPUFZ	69	C		DQA
56	61	.23	137	PCT	11	P2	BW1	-1.63			VS3	TEH	.610	NBAZ2	38	H		
56	61	.71	98	PCT	13	P3	BW1	-1.69		.13	08H	VS3	.580	NPUFZ	64	H		DQA
122	61	.24	85	PCT	8	P2	VS3	.85			VS3	TEC	.610	NBAZ2	24	C		
126	61	.19	86	PCT	9	P2	VS1	.61			VS3	TEH	.610	NBAZ2	34	H		
121	62	.46	91	PCT	13	P2	VS3	.77			VS3	TEC	.610	NBAZ2	24	C		
121	62	.38	118	PCT	13	P2	VS2	.85			VS3	TEH	.610	NBAZ2	33	H		
121	62	1.07	95	PCT	18	P3	VS2	.87		.61	VS2	VS2	.580	NPUFZ	61	H		
121	62	1.27	100	PCT	21	P3	VS3	1.00		.50	VS3	VS3	.580	NPUFZ	61	H		
138	63	.22	101	PCT	8	P2	VS1	.99			VS3	TEH	.610	NBAZ2	33	H		
ROW	COL	VOLTS	DEG	IND	PER	CHN	LOCN	INCH1	INCH2	CRLEN	BEGT	ENDT	PDIA	PTYPE	CAL	L	UTIL1	UTIL2

ROW	COL	VOLTS	DEG	IND	PER	CHN	LOCN	INCH1	INCH2	CRLEN	BEGT	ENDT	PDIA	PTYPE	CAL	L	UTIL1	UTIL2
109	64	.22	99	PCT	10	P2	VS2	-.91			VS3	TEH	.610	NBAZ2	36	H		
109	64	1.09	99	PCT	19	P3	VS2	-.83		.34	VS2	VS2	.580	NPUFZ	65	H		DQA
126	65	.40	107	PCT	14	P2	VS4	-.86			VS3	TEC	.610	NBAZ2	23	C		
126	65	.16	99	PCT	8	P2	VS1	.35			VS3	TEH	.610	NBAZ2	34	H		
126	65	.93	89	PCT	17	P3	VS4	-.80		1.98	VS4	VS4	.580	NPUFZ	70	C		DQA
46	67	.18	114	PCT	9	P2	VS3	.81			VS3	TEH	.610	NBAZ2	8	H		
46	67	.67	84	PCT	12	P3	VS3	1.00		.26	VS3	VS3	.580	NPUFZ	64	H		
118	67	.27	66	PCT	9	P2	VS3	-.34			VS3	TEC	.610	NBAZ2	24	C		
118	67	.19	148	PCT	7	P2	VS2	1.13			VS3	TEH	.610	NBAZ2	33	H		
118	67	.69	99	PCT	13	P3	VS2	1.10		.23	VS2	VS2	.580	NPUFZ	64	H		
118	67	.73	92	PCT	13	P3	VS3	-.30		.23	VS3	VS3	.580	NPUFZ	64	H		
126	67	.22	77	PCT	8	P2	VS3	-.59			VS3	TEC	.610	NBAZ2	24	C		
126	67	.30	126	PCT	10	P2	VS4	-1.00			VS3	TEC	.610	NBAZ2	24	C		
126	67	.15	100	PCT	6	P2	VS1	.28			VS3	TEH	.610	NBAZ2	33	H		
126	67	.75	91	PCT	14	P3	VS3	-.96		.24	VS3	VS3	.580	NPUFZ	64	H		
126	67	.72	87	PCT	14	P3	VS4	-.74		.15	VS4	VS4	.580	NPUFZ	70	C		DQA
128	67	.26	98	PCT	9	P2	VS3	-.48			VS3	TEC	.610	NBAZ2	24	C		
128	67	.24	112	PCT	9	P2	VS2	-.90			VS3	TEH	.610	NBAZ2	33	H		
128	67	.78	92	PCT	14	P3	VS2	.73		.36	VS2	VS2	.580	NPUFZ	61	H		
128	67	.74	90	PCT	13	P3	VS3	-.90		.18	VS3	VS3	.580	NPUFZ	61	H		
130	67	.39	117	PCT	12	P2	VS4	-.83			VS3	TEC	.610	NBAZ2	24	C		
130	67	1.05	84	PCT	18	P3	VS4	-.43		.30	VS4	VS4	.580	NPUFZ	70	C		DQA
54	71	.19	137	PCT	9	P2	09H	-.78			VS3	TEH	.610	NBAZ2	8	H		
121	72	.27	122	PCT	12	P2	VS2	-1.09			VS3	TEH	.610	NBAZ2	32	H		
121	72	.69	85	PCT	13	P3	VS2	-1.03		.26	VS2	VS2	.580	NPUFZ	64	H		
35	76	.21	136	PCT	10	P2	04H	.93			VS3	TEH	.610	NBAZ2	6	H		
165	76	.19	52	PCT	8	P2	BW2	-.74			VS3	TEC	.610	NBAZ1	55	C		
108	77	.22	109	PCT	9	P2	VS3	.13			VS3	TEC	.610	NBAZ2	21	C		
ROW	COL	VOLTS	DEG	IND	PER	CHN	LOCN	INCH1	INCH2	CRLEN	BEGT	ENDT	PDIA	PTYPE	CAL	L	UTIL1	UTIL2

ROW	COL	VOLTS	DEG	IND	PER	CHN	LOCN	INCH1	INCH2	CRLEN	BEGT	ENDT	PDIA	PTYPE	CAL	L	UTIL1	UTIL2
128	77	.30	80	PCT	11	P2	VS3	-.33			VS3	TEC	.610	NBAZ1	25	C		
128	77	.93	104	PCT	16	P3	VS3	-.66		.22	VS3	VS3	.580	NPUFZ	64	H		DQA
89	78	.23	123	PCT	9	P2	09H	.83			VS3	TEH	.610	NBAZ2	35	H		
103	80	.26	76	PCT	10	P2	VS3	-.44			VS3	TEC	.610	NBAZ2	21	C		
103	80	.57	104	PCT	11	P3	VS3	-.94		.25	VS3	VS3	.580	NPUFZ	64	H		
44	81	.29	41	PCT	11	P2	VS3	.80			VS3	TEC	.610	NBAZ2	3	C		
44	81	.66	98	PCT	12	P3	VS3	.48		.17	VS3	VS3	.580	NPUFZ	64	H		
50	83	.42	111	PCT	16	P2	09H	-.10			VS3	TEH	.610	NBAZ2	6	H		
50	83	1.36	109	PCT	22	P3	09H	-.10		.28	08H	VS3	.580	NPUFZ	64	H		DQA
118	83	.39	108	PCT	12	P2	VS3	-.24			VS3	TEC	.610	NBAZ2	26	C		
118	83	.96	98	PCT	17	P3	VS3	-.22		.16	VS3	VS3	.580	NPUFZ	64	H		
41	84	.19	55	PCT	9	P2	08H	-.81			VS3	TEH	.610	NBAZ2	6	H		
41	84	.77	103	PCT	14	P3	08H	-1.00		.19	07H	VS3	.580	NPUFZ	64	H		DQA
40	85	.20	255	PCT	8	P2	08H	-.10			VS3	TEH	.610	ZBAZC	5	H		
40	85	.83	99	PCT	15	P3	08H	.76		.20	07H	VS3	.580	NPUFZ	64	H		DQA
48	85	.38	78	PCT	13	P2	VS3	-.96			VS3	TEH	.610	ZBAZC	5	H		
48	85	1.21	96	PCT	20	P3	VS3	-.71		.17	VS3	VS3	.580	NPUFZ	64	H		
122	85	.23	51	PCT	10	P2	VS2	.91			VS3	TEH	.610	NBAZ2	32	H		
122	85	.59	84	PCT	11	P3	VS2	.95		.14	VS2	VS2	.580	NPUFZ	64	H		
65	86	.22	136	PCT	8	P2	09H	.72			VS3	TEH	.610	NBAZ2	35	H		
115	86	.23	144	PCT	8	P2	VS4	-.72			VS3	TEC	.610	NBAZ2	26	C		
115	86	1.12	92	PCT	16	P3	VS4	-.62		.22	VS4	VS4	.580	NPUFZ	69	C		DQA
118	87	.68	116	PCT	18	P2	VS3	.85			VS3	TEC	.610	NBAZ2	26	C		
118	87	1.38	101	PCT	22	P3	VS3	1.09		.33	VS3	VS3	.580	NPUFZ	64	H		
103	88	.20	137	PCT	9	P2	VS2	-.71			VS3	TEH	.610	NBAZ2	34	H		
ROW	COL	VOLTS	DEG	IND	PER	CHN	LOCN	INCH1	INCH2	CRLEN	BEGT	ENDT	PDIA	PTYPE	CAL	L	UTIL1	UTIL2

ROW	COL	VOLTS	DEG	IND	PER	CHN	LOCN	INCH1	INCH2	CRLEN	BEGT	ENDT	PDIA	PTYPE	CAL	L	UTIL1	UTIL2
103	88	.94	105	PCT	17	P3	VS2	-.78		.24	VS2	VS2	.580	NPUFZ	64	H		
44	89	.27	89	PCT	10	P2	BW2	-.97			VS3	TEC	.610	NBAZ2	3	C		
44	89	1.17	101	PCT	27	P2	VS3	-.82			VS3	TEH	.610	ZBAZC	5	H		
44	89	1.59	113	PCT	25	P3	VS3	-.60		.38	07C	VS3	.580	NPUFZ	70	C		
44	89	.58	96	PCT	12	P3	BW2	-.82		.17	07C	VS3	.580	NPUFZ	70	C		DQA
48	89	.17	115	PCT	7	P2	09H	-1.32			VS3	TEH	.610	ZBAZC	5	H		
64	89	.20	129	PCT	9	P2	09H	.57			VS3	TEH	.610	NBAZ2	34	H		
130	89	.17	136	PCT	8	P2	VS1	.77			VS3	TEH	.610	NBAZ2	32	H		
130	89	.68	92	PCT	13	P3	VS1	.38		.19	VS1	VS1	.580	NPUFZ	64	H		
51	90	.29	58	PCT	11	P2	VS3	.46			VS3	TEC	.610	NBAZ2	3	C		
75	90	.18	104	PCT	7	P2	09H	1.04			VS3	TEH	.610	NBAZ2	33	H		
89	90	.37	92	PCT	12	P2	VS2	-.68			VS3	TEH	.610	NBAZ2	33	H		
89	90	1.15	108	PCT	19	P3	VS2	-1.09		.16	VS2	VS2	.580	NPUFZ	64	H		
111	90	.15	137	PCT	5	P2	VS3	-.32			VS3	TEC	.610	NBAZ2	26	C		
44	91	.35	92	PCT	13	P2	VS3	-.49			VS3	TEC	.610	NBAZ2	3	C		
44	91	.35	98	PCT	13	P2	BW2	-.91			VS3	TEC	.610	NBAZ2	3	C		
44	91	.96	97	PCT	17	P3	VS3	-.58		.31	07C	VS3	.580	NPUFZ	70	C		
44	91	.77	102	PCT	15	P3	BW2	-.62		.25	07C	VS3	.580	NPUFZ	70	C		
45	92	.23	95	PCT	8	P2	08H	-.88			VS3	TEH	.610	ZBAZC	5	H		
45	92	.30	139	PCT	11	P2	BW1	-1.12			VS3	TEH	.610	ZBAZC	5	H		
45	92	.60	109	PCT	11	P3	08H	-.83		.15	07H	VS3	.580	NPUFZ	64	H		DQA
45	92	.65	120	PCT	12	P3	BW1	-1.25		.18	07H	VS3	.580	NPUFZ	64	H		
53	92	.26	75	PCT	10	P2	VS3	.42			VS3	TEH	.610	ZBAZC	5	H		
53	92	.93	88	PCT	16	P3	VS3	1.07		.29	VS3	VS3	.580	NPUFZ	63	H		
48	93	.53	106	PCT	17	P2	BW2	.86			VS3	TEC	.610	NBAZ2	3	C		
48	93	.88	129	PCT	13	P3	BW2	.85		.09	08C	VS3	.580	NPUFZ	69	C		DQA

ROW	COL	VOLTS	DEG	IND	PER	CHN	LOCN	INCH1	INCH2	CRLEN	BEGT	ENDT	PDIA	PTYPE	CAL	L	UTIL1	UTIL2
90	93	.26	92	PCT	12	P2	10H	-1.15			VS3	TEH	.610	NBAZ2	34	H		
90	93	.63	97	PCT	12	P3	10H	-1.15		.12	09H	VS2	.580	NPUFZ	64	H		DQA
111	94	.24	131	PCT	8	P2	VS3	.75			VS3	TEC	.610	NBAZ2	26	C		
111	94	.88	95	PCT	16	P3	VS3	.72		1.22	VS3	VS3	.580	NPUFZ	64	H		
48	95	.35	55	PCT	13	P2	BW2	.86			VS3	TEC	.610	NBAZ2	3	C		
48	95	.31	102	PCT	11	P2	VS3	.68			VS3	TEH	.610	ZBAZC	5	H		
48	95	.85	109	PCT	12	P3	VS3	.79		.15	08C	VS3	.580	NPUFZ	69	C		
48	95	.86	119	PCT	12	P3	BW2	.81		.19	08C	VS3	.580	NPUFZ	69	C		DQA
70	95	.25	104	PCT	9	P2	08H	-.15			VS3	TEH	.610	NBAZ2	33	H		
70	95	.71	287	PCT	13	P3	08H	-.05		.53	08H	08H	.600	NPAHZ	60	H		
99	96	.23	149	PCT	8	P2	VS3	-.90			VS3	TEC	.610	NBAZ2	28	C		
99	96	.61	92	PCT	11	P3	VS3	-1.08		.11	VS3	VS3	.580	NPUFZ	64	H		
48	97	.25	74	PCT	11	P2	VS3	.62			VS3	TEH	.610	NBAZ2	6	H		
48	97	1.22	98	PCT	20	P3	VS3	.96		.47	VS3	VS3	.580	NPUFZ	63	H		
90	97	.24	94	PCT	11	P2	10H	-1.00			VS3	TEH	.610	NBAZ2	34	H		
90	97	.63	105	PCT	12	P3	10H	-1.13		.14	09H	VS2	.580	NPUFZ	64	H		DQA
89	98	.42	70	PCT	14	P2	VS4	.98			VS3	TEC	.610	NBAZ1	27	C		
89	98	1.24	92	PCT	17	P3	VS4	.79		.15	VS4	VS4	.580	NPUFZ	69	C		DQA
50	99	.29	109	PCT	11	P2	BW2	-1.04			VS3	TEC	.610	NBAZ2	1	C		
126	99	.27	141	PCT	9	P2	VS3	-.60			VS3	TEC	.610	NBAZ2	28	C		
126	99	.62	271	PCT	12	P3	VS3	-.75		.13	VS3	VS3	.580	NPUFZ	66	H		
74	101	.17	129	PCT	8	P2	09H	-.25			VS3	TEH	.610	NBAZ2	24	H		
74	101	.21	142	PCT	10	P2	09H	.84			VS3	TEH	.610	NBAZ2	24	H		
76	101	.44	118	PCT	17	P2	09H	.77			VS3	TEH	.610	NBAZ2	24	H		
76	101	.70	115	PCT	13	P3	09H	1.12		.19	08H	VS2	.580	NPUFZ	64	H		
84	101	.19	150	PCT	9	P2	09H	.74			VS3	TEH	.610	NBAZ2	24	H		
84	101	.57	92	PCT	11	P3	09H	.64		.17	08H	VS2	.580	NPUFZ	64	H		DQA
ROW	COL	VOLTS	DEG	IND	PER	CHN	LOCN	INCH1	INCH2	CRLEN	BEGT	ENDT	PDIA	PTYPE	CAL	L	UTIL1	UTIL2

ROW	COL	VOLTS	DEG	IND	PER	CHN	LOCN	INCH1	INCH2	CRLEN	BEGT	ENDT	PDIA	PTYPE	CAL	L	UTIL1	UTIL2
92	101	.18	90	PCT	9	P2	10H	-.18				VS3	TEH	.610	NBAZ2	24	H	
111	102	.15	115	PCT	6	P2	VS2	-.99				VS3	TEH	.610	NBAZ2	25	H	
165	102	.17	61	PCT	7	P2	11H	.25				VS3	TEH	.610	NBAZ2	25	H	
48	103	.35	112	PCT	13	P2	BW2	.89				VS3	TEC	.610	NBAZ2	3	C	
48	103	.71	114	PCT	20	P2	VS3	.77				VS3	TEH	.610	ZBAZC	5	H	
48	103	1.92	102	PCT	24	P3	VS3	.80		.20	08C	VS3	.580	NPUFZ	69	C		
72	103	.18	123	PCT	8	P2	09H	-.37				VS3	TEH	.610	ZBAZC	23	H	
54	105	.45	137	PCT	17	P2	VS3	.61				VS3	TEH	.610	NBAZ2	6	H	
54	105	1.06	115	PCT	18	P3	VS3	.98		.29	VS3	VS3	.580	NPUFZ	63	H		
76	105	.23	146	PCT	11	P2	09H	.85				VS3	TEH	.610	NBAZ2	24	H	
116	105	.22	103	PCT	10	P2	VS2	.99				VS3	TEH	.610	NBAZ2	28	H	
95	106	.24	121	PCT	9	P2	BW1	-1.14				VS3	TEH	.610	ZBAZC	23	H	
92	107	.17	49	PCT	7	P2	BW1	-1.00				VS3	TEH	.610	ZBAZC	23	H	
94	107	.18	110	PCT	7	P2	BW1	-1.09				VS3	TEH	.610	ZBAZC	23	H	
98	107	.16	94	PCT	6	P2	BW1	.83				VS3	TEH	.610	ZBAZC	23	H	
105	108	.33	138	PCT	14	P2	VS2	.74				VS3	TEH	.610	NBAZ2	24	H	
105	108	.32	133	PCT	13	P2	VS3	-.65				VS3	TEH	.610	NBAZ2	24	H	
105	108	.33	110	PCT	14	P2	VS3	.73				VS3	TEH	.610	NBAZ2	24	H	
105	108	1.12	117	PCT	19	P3	VS2	.82		.66	VS2	VS2	.580	NPUFZ	63	H		
105	108	.94	108	PCT	17	P3	VS3	-.90		.54	VS3	VS3	.580	NPUFZ	63	H		
105	108	1.10	82	PCT	19	P3	VS3	.94		.24	VS3	VS3	.580	NPUFZ	63	H		
107	108	.29	139	PCT	10	P2	VS4	-.61				VS3	TEC	.610	NBAZ2	30	C	
107	108	1.25	98	PCT	17	P3	VS4	-.67		.39	VS4	VS4	.580	NPUFZ	69	C		DQA
48	109	1.39	110	PCT	32	P2	VS3	.73				VS3	TEH	.610	NBAZ2	6	H	
ROW	COL	VOLTS	DEG	IND	PER	CHN	LOCN	INCH1	INCH2	CRLEN	BEGT	ENDT	PDIA	PTYPE	CAL	L	UTIL1	UTIL2

ROW	COL	VOLTS	DEG	IND	PER	CHN	LOCN	INCH1	INCH2	CRLEN	BEGT	ENDT	PDIA	PTYPE	CAL	L	UTIL1	UTIL2
48	109	1.57	118	PCT	24	P3	VS3	1.04		.18	VS3	VS3	.580	NPUFZ	61	H		
58	109	.26	59	PCT	9	P2	VS3	.76			VS3	TEC	.610	NBAZ2	30	C		
82	109	.23	159	PCT	11	P2	09H	.84			VS3	TEH	.610	NBAZ2	24	H		
92	109	.25	113	PCT	8	P2	VS3	-.63			VS3	TEC	.610	NBAZ2	30	C		
118	109	.15	113	PCT	6	P2	VS4	.58			VS3	TEC	.610	NBAZ1	53	C		
132	109	.20	57	PCT	8	P2	VS3	.87			VS3	TEC	.610	NBAZ1	53	C		
83	110	.20	143	PCT	8	P2	08H	.57			VS3	TEH	.610	ZBAZC	23	H		
87	110	.27	144	PCT	10	P2	09H	.85			VS3	TEH	.610	ZBAZC	23	H		
95	110	.18	119	PCT	8	P2	10H	.83			VS3	TEH	.610	ZBAZC	23	H		
103	110	.22	139	PCT	9	P2	VS2	-1.11			VS3	TEH	.610	ZBAZC	23	H		
103	110	.82	101	PCT	15	P3	VS2	-.92		.33	VS2	VS2	.580	NPUFZ	63	H		
109	110	.16	104	PCT	7	P2	VS3	.03			VS3	TEH	.610	ZBAZC	23	H		
98	111	.17	63	PCT	7	P2	BW1	.93			VS3	TEH	.610	ZBAZC	23	H		
102	111	.17	137	PCT	7	P2	VS2	.78			VS3	TEH	.610	ZBAZC	23	H		
95	112	.16	118	PCT	8	P2	10H	-.19			VS3	TEH	.610	NBAZ2	24	H		
103	112	.17	82	PCT	8	P2	BW1	-.71			VS3	TEH	.610	NBAZ1	22	H		
93	114	.19	56	PCT	8	P2	BW1	-1.16			VS3	TEH	.610	ZBAZC	23	H		
117	114	.22	63	PCT	8	P2	VS2	-1.67			VS3	TEH	.610	NBAZ2	27	H		
42	115	.54	99	PCT	17	P2	VS3	.45			VS3	TEH	.610	ZBAZC	5	H		
42	115	1.10	110	PCT	19	P3	VS3	.82		.42	VS3	VS3	.580	NPUFZ	63	H		
42	117	.20	140	PCT	7	P2	08C	-.18			VS3	TEC	.610	NBAZ2	6	C		
ROW	COL	VOLTS	DEG	IND	PER	CHN	LOCN	INCH1	INCH2	CRLEN	BEGT	ENDT	PDIA	PTYPE	CAL	L	UTIL1	UTIL2

ROW	COL	VOLTS	DEG	IND	PER	CHN	LOCN	INCH1	INCH2	CRLEN	BEGT	ENDT	PDIA	PTYPE	CAL	L	UTIL1	UTIL2
42	117	.73	104	PCT	11	P3	08C	.29		.14	07C	VS3	.580	NPUFZ	69	C		DQA
44	117	.25	114	PCT	11	P2	BW1	-1.27				VS3	TEH	.610	NBAZ2	6	H	
44	117	.87	110	PCT	16	P3	BW1	-.82		.30	07H	VS3	.580	NPUFZ	63	H		DQA
41	118	.17	124	PCT	7	P2	08H	.77				VS3	TEH	.610	ZBAZC	3	H	
38	119	.19	71	PCT	8	P2	VS3	1.00				VS3	TEC	.610	NBAZ2	5	C	
44	119	.17	50	PCT	7	P2	BW1	-1.12				VS3	TEH	.610	ZBAZC	3	H	
44	119	.14	118	PCT	6	P2	VS3	-.93				VS3	TEC	.610	NBAZ2	5	C	
44	119	.69	114	PCT	13	P3	BW1	-1.13		.21	07H	VS3	.580	NPUFZ	63	H		
44	119	.60	107	PCT	11	P3	VS3	-1.05		.30	07H	VS3	.580	NPUFZ	63	H		
98	119	.15	122	PCT	6	P2	10H	.50				VS3	TEH	.610	ZBAZC	21	H	
91	120	.18	131	PCT	9	P2	BW1	-.67				VS3	TEH	.610	NBAZ1	22	H	
91	120	.68	108	PCT	12	P3	BW1	-.57		.35	09H	VS2	.580	NPUFZ	62	H		
64	121	.17	148	PCT	8	P2	09H	.58				VS3	TEH	.610	NBAZ1	22	H	
39	122	.36	141	PCT	12	P2	08H	.70				VS3	TEH	.610	ZBAZC	3	H	
39	122	.81	107	PCT	15	P3	08H	.33		.18	07H	VS3	.580	NPUFZ	63	H		DQA
71	122	.26	120	PCT	10	P2	VS2	-.60				VS3	TEH	.610	ZBAZC	21	H	
71	122	.76	91	PCT	14	P3	VS2	-.62		.32	VS2	VS2	.580	NPUFZ	63	H		
52	123	.17	56	PCT	7	P2	VS3	-.79				VS3	TEC	.610	NBAZ2	5	C	
126	123	.37	123	PCT	12	P2	VS3	-.54				VS3	TEH	.610	NBAZ2	27	H	
126	123	.83	91	PCT	15	P3	VS3	-.60		.61	VS3	VS3	.580	NPUFZ	61	H		
31	124	.26	138	PCT	10	P2	BW2	-.93				VS3	TEC	.610	NBAZ2	5	C	
31	124	.92	81	PCT	13	P3	BW2	-.68		.35	07C	VS3	.580	NPUFZ	69	C		DQA
126	129	.22	142	PCT	10	P2	VS3	-.50				VS3	TEH	.610	NBAZ2	26	H	
126	129	.83	107	PCT	15	P3	VS3	-.67		.29	VS3	VS3	.580	NPUFZ	61	H		
133	130	.27	122	PCT	10	P2	VS1	-.71				VS3	TEH	.610	NBAZ2	25	H	
ROW	COL	VOLTS	DEG	IND	PER	CHN	LOCN	INCH1	INCH2	CRLEN	BEGT	ENDT	PDIA	PTYPE	CAL	L	UTIL1	UTIL2

ROW	COL	VOLTS	DEG	IND	PER	CHN	LOCN	INCH1	INCH2	CRLEN	BEGT	ENDT	PDIA	PTYPE	CAL	L	UTIL1	UTIL2
133	130	.66	92	PCT	12	P3	VS1	-.69		.21	VS1	VS1	.580	NPUFZ	61	H		
74	131	.15	107	PCT	6	P2	08H	.61			VS3	TEH	.610	ZBAZC	19	H		
43	132	.26	142	PCT	11	P2	08H	.79			VS3	TEH	.610	NBAZ2	4	H		
65	134	.16	132	PCT	6	P2	09H	1.04			VS3	TEH	.610	ZBAZC	19	H		
89	134	.22	100	PCT	8	P2	VS2	-1.29			VS3	TEH	.610	ZBAZC	19	H		
89	134	.66	88	PCT	12	P3	VS2	-.67		.25	VS2	VS2	.580	NPUFZ	61	H		
97	134	.21	130	PCT	8	P2	10H	.84			VS3	TEH	.610	ZBAZC	19	H		
107	138	.17	134	PCT	7	P2	09H	.90			VS3	TEH	.610	ZBAZC	19	H		
120	143	.29	125	PCT	10	P2	VS2	-1.56			VS3	TEH	.610	ZBAZC	17	H		
120	143	.85	99	PCT	15	P3	VS2	-.73		.45	VS2	VS2	.580	NPUFZ	61	H		
94	145	.43	143	PCT	17	P2	VS2	.60			VS3	TEH	.610	NBAZ1	12	H		
94	145	1.26	103	PCT	21	P3	VS2	.73		.73	VS2	VS2	.580	NPUFZ	61	H		
105	146	.29	94	PCT	10	P2	VS2	1.13			VS3	TEH	.610	ZBAZC	17	H		
105	146	.85	93	PCT	15	P3	VS2	.80		.62	VS2	VS2	.580	NPUFZ	61	H		
105	148	.51	114	PCT	19	P2	VS3	-.64			VS3	TEH	.610	NBAZ1	18	H		
105	148	1.58	86	PCT	24	P3	VS3	-.90		.63	VS3	VS3	.580	NPUFZ	61	H		
114	149	.48	109	PCT	15	P2	VS2	1.04			VS3	TEH	.610	ZBAZC	17	H		
114	149	1.31	103	PCT	21	P3	VS2	.83		.50	VS2	VS2	.580	NPUFZ	61	H		
107	154	.24	139	PCT	9	P2	10H	.35			VS3	TEH	.610	ZBAZC	15	H		
107	154	.62	93	PCT	12	P3	10H	.13		.15	09H	VS2	.580	NPUFZ	61	H		DQA
56	157	.22	146	PCT	10	P2	VS3	.46			VS3	TEH	.610	NBAZ1	14	H		
56	157	.80	91	PCT	14	P3	VS3	.80		.38	VS3	VS3	.580	NPUFZ	62	H		
91	158	.22	75	PCT	8	P2	VS2	.40			VS3	TEH	.610	ZBAZC	13	H		
82	159	.39	115	PCT	13	P2	VS2	1.00			VS3	TEH	.610	ZBAZC	13	H		
ROW	COL	VOLTS	DEG	IND	PER	CHN	LOCN	INCH1	INCH2	CRLEN	BEGT	ENDT	PDIA	PTYPE	CAL	L	UTIL1	UTIL2

ROW	COL	VOLTS	DEG	IND	PER	CHN	LOCN	INCH1	INCH2	CRLEN	BEGT	ENDT	PDIA	PTYPE	CAL	L	UTIL1	UTIL2
82	159	1.29	103	PCT	21	P3	VS2	1.15		.36	VS2	VS2	.580	NPUFZ	62	H		
100	159	.28	104	PCT	13	P2	VS3	-.35			VS3	TEH	.610	NBAZ1	16	H		
100	159	.66	105	PCT	12	P3	VS3	-.34		.25	VS3	VS3	.580	NPUFZ	62	H		
112	159	.38	97	PCT	16	P2	VS3	-.73			VS3	TEH	.610	NBAZ1	16	H		
112	159	1.31	97	PCT	21	P3	VS3	-.97		.32	VS3	VS3	.580	NPUFZ	62	H		
116	159	.64	96	PCT	22	P2	VS3	-.75			VS3	TEH	.610	NBAZ1	16	H		
116	159	2.01	95	PCT	29	P3	VS3	-.97		.37	VS3	VS3	.580	NPUFZ	62	H		
128	159	.15	145	PCT	8	P2	VS1	.80			VS3	TEH	.610	NBAZ1	16	H		
99	160	.33	98	PCT	14	P2	VS3	-.84			VS3	TEH	.610	NBAZ1	16	H		
99	160	.82	88	PCT	15	P3	VS3	-1.05		.25	VS3	VS3	.580	NPUFZ	62	H		
124	161	.27	106	PCT	10	P2	VS3	-.68			VS3	TEH	.610	ZBAZC	15	H		
124	161	.83	91	PCT	15	P3	VS3	-1.11		.27	VS3	VS3	.580	NPUFZ	62	H		DQA
69	162	.15	136	PCT	6	P2	VS2	-.54			VS3	TEH	.610	ZBAZC	13	H		
98	163	.27	130	PCT	13	P2	VS3	-.58			VS3	TEH	.610	NBAZ1	16	H		
98	163	1.13	104	PCT	19	P3	VS3	-.71		.61	VS3	VS3	.580	NPUFZ	62	H		
130	165	.19	133	PCT	7	P2	BW1	-.26			VS3	TEH	.610	ZBAZC	15	H		
23	168	.16	135	PCT	8	P2	08H	-.32			VS3	TEH	.610	NBAZ1	12	H		
66	169	.22	107	PCT	10	P2	VS2	-1.00			VS3	TEH	.610	NBAZ1	14	H		
128	169	.28	130	PCT	11	P2	VS3	-.79			VS3	TEC	.610	NBAZ1	49	C		
128	169	.57	91	PCT	11	P3	VS3	-.99		.25	VS3	VS3	.580	NPUFZ	62	H		
93	172	.17	143	PCT	8	P2	10H	.77			VS3	TEH	.610	NBAZ1	14	H		
99	172	.46	127	PCT	17	P2	VS2	-.99			VS3	TEH	.610	NBAZ1	14	H		
99	172	1.04	115	PCT	28	P2	VS3	-.91			VS3	TEH	.610	NBAZ1	14	H		
99	172	1.24	97	PCT	20	P3	VS2	-1.02		.30	09H	VS2	.580	NPUFZ	62	H		
99	172	2.08	99	PCT	30	P3	VS3	-1.16		.36	VS3	VS3	.580	NPUFZ	62	H		
ROW	COL	VOLTS	DEG	IND	PER	CHN	LOCN	INCH1	INCH2	CRLEN	BEGT	ENDT	PDIA	PTYPE	CAL	L	UTIL1	UTIL2

ROW	COL	VOLTS	DEG	IND	PER	CHN	LOCN	INCH1	INCH2	CRLEN	BEGT	ENDT	PDIA	PTYPE	CAL	L	UTIL1	UTIL2
96	173	.32	114	PCT	13	P2	VS3	.34			VS3	TEH	.610	NBAZ1	14	H		
63	174	.23	92	PCT	7	P2	VS3	.83			VS3	TEC	.610	NBAZ1	34	C		
99	174	.22	122	PCT	7	P2	VS3	-1.63			VS3	TEC	.610	NBAZ1	36	C		
115	174	.22	122	PCT	8	P2	VS1	.67			VS3	TEH	.610	ZBAZC	13	H		
82	175	.34	123	PCT	12	P2	VS2	.68			VS3	TEH	.610	ZBAZC	13	H		
82	175	1.06	98	PCT	18	P3	VS2	.61		.23	VS2	VS2	.580	NPUFZ	62	H		
103	180	.18	119	PCT	9	P2	VS3	-.94			VS3	TEH	.610	NBAZ1	18	H		
103	180	.59	111	PCT	11	P3	VS3	-.91		.28	VS3	VS3	.580	NPUFZ	62	H		
105	180	.21	129	PCT	10	P2	VS3	-.82			VS3	TEH	.610	NBAZ1	18	H		
105	180	.80	120	PCT	14	P3	VS3	-.96		.19	VS3	VS3	.580	NPUFZ	62	H		
107	180	.27	111	PCT	12	P2	VS3	-.84			VS3	TEH	.610	NBAZ1	18	H		
107	180	.85	86	PCT	15	P3	VS3	-.97		.33	VS3	VS3	.580	NPUFZ	62	H		
98	181	.26	133	PCT	11	P2	VS3	-.60			VS3	TEH	.610	NBAZ1	20	H		
100	181	.21	115	PCT	10	P2	VS3	-.79			VS3	TEH	.610	NBAZ1	20	H		
100	181	.59	81	PCT	11	P3	VS3	-1.03		.14	VS3	VS3	.580	NPUFZ	62	H		
106	181	.27	138	PCT	10	P2	VS3	-1.00			VS3	TEC	.610	NBAZ1	35	C		
106	181	.63	94	PCT	12	P3	VS3	-.89		.25	VS3	VS3	.580	NPUFZ	62	H		
49	184	.17	55	PCT	7	P2	BW2	-.93			VS3	TEC	.610	NBAZ1	43	C		
81	186	.32	44	PCT	12	P2	VS4	-.64			VS3	TEC	.610	NBAZ1	33	C		
81	186	1.00	91	PCT	14	P3	VS4	-.51		.31	VS4	VS4	.580	NPUFZ	69	C		DQA
79	188	.25	77	PCT	11	P2	VS3	-.76			VS3	TEH	.610	NBAZ1	20	H		
79	188	.87	101	PCT	15	P3	VS3	-.92		.19	VS3	VS3	.580	NPUFZ	61	H		
81	188	.21	102	PCT	10	P2	VS2	-1.34			VS3	TEH	.610	NBAZ1	20	H		

ROW	COL	VOLTS	DEG	IND	PER	CHN	LOCN	INCH1	INCH2	CRLEN	BEGT	ENDT	PDIA	PTYPE	CAL	L	UTIL1	UTIL2
58	189	.22	71	PCT	9	P2	VS3	-.58			VS3	TEC	.610	NBAZ1	33	C		
58	189	.70	100	PCT	13	P3	VS3	-.92		.38	VS3	VS3	.580	NPUFZ	61	H		
ROW	COL	VOLTS	DEG	IND	PER	CHN	LOCN	INCH1	INCH2	CRLEN	BEGT	ENDT	PDIA	PTYPE	CAL	L	UTIL1	UTIL2

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ROW	COL	VOLTS	DEG	IND	PER	CHN	LOCN	INCH1	INCH2	CRLEN	BEGT	ENDT	PDIA	PTYPE	CAL	L	UTIL1	UTIL2
62	15	.18	74	PCT	7	P2	09H	.00			VS3	TEH	.610	NBAZ1	42	H		
82	15	.21	141	PCT	8	P2	VS3	.59			VS3	TEH	.610	NBAZ1	49	H		
86	15	.18	124	PCT	7	P2	09H	.63			VS3	TEH	.610	NBAZ1	49	H		
69	18	.21	108	PCT	8	P2	VS3	-.63			VS3	TEC	.610	NBAZ2	12	C		
69	18	.61	90	PCT	11	P3	VS3	-1.00		.27	VS3	VS3	.580	NPUFZ	65	H		
100	21	.28	131	PCT	10	P2	VS3	-.40			VS3	TEH	.610	NBAZ1	41	H		
102	21	.52	136	PCT	13	P2	VS3	-.78			VS3	TEC	.610	NBAZ2	15	C		
102	21	.80	96	PCT	14	P3	VS3	-.78		.32	VS3	VS3	.580	NPUFZ	65	H		
72	25	.18	103	PCT	7	P2	07C	.22			VS3	TEC	.610	NBAZ2	12	C		
113	26	.21	134	PCT	8	P2	VS3	.27			VS3	TEH	.610	NBAZ1	37	H		
111	32	.30	104	PCT	9	P2	VS3	.42			VS3	TEC	.610	NBAZ2	15	C		
111	32	.85	100	PCT	14	P3	VS3	.52		.26	VS3	VS3	.580	NPUFZ	65	H		
123	32	.31	124	PCT	9	P2	VS3	.32			VS3	TEC	.610	NBAZ2	15	C		
114	33	.20	125	PCT	8	P2	10H	-.35			VS3	TEH	.610	NBAZ1	37	H		
99	34	.20	120	PCT	8	P2	VS3	-.87			VS3	TEC	.610	NBAZ2	16	C		
99	34	.59	95	PCT	11	P3	VS3	-1.21		.26	VS3	VS3	.580	NPUFZ	65	H		
113	38	.25	106	PCT	9	P2	VS3	-.72			VS3	TEC	.610	NBAZ2	16	C		
99	44	.41	133	PCT	11	P2	VS3	-.89			VS3	TEC	.610	NBAZ1	17	C		
99	44	.84	108	PCT	15	P3	VS3	-1.09		.25	VS3	VS3	.580	NPUFZ	64	H		
63	46	.18	74	PCT	7	P2	BW1	-.81			VS3	TEH	.610	NBAZ1	39	H		
121	46	.40	109	PCT	13	P2	VS2	-.97			VS3	TEH	.610	NBAZ1	37	H		
121	46	1.15	103	PCT	20	P3	VS2	-.90		.37	VS2	VS2	.580	NPUFZ	64	H		
132	49	.39	126	PCT	13	P2	VS3	.69			VS3	TEC	.610	NBAZ2	16	C		
ROW	COL	VOLTS	DEG	IND	PER	CHN	LOCN	INCH1	INCH2	CRLEN	BEGT	ENDT	PDIA	PTYPE	CAL	L	UTIL1	UTIL2

ROW	COL	VOLTS	DEG	IND	PER	CHN	LOCN	INCH1	INCH2	CRLEN	BEGT	ENDT	PDIA	PTYPE	CAL	L	UTIL1	UTIL2
132	49	1.01	104	PCT	18	P3	VS3	.84		.46	VS3	VS3	.580	NPUFZ	64	H		
140	49	.20	117	PCT	7	P2	11H	-.27			VS3	TEH	.610	NBAZ1	28	H		
68	53	.19	112	PCT	7	P2	09H	.61			VS3	TEH	.610	NBAZ1	37	H		
118	53	.29	135	PCT	10	P2	VS2	-.40			VS3	TEH	.610	NBAZ1	36	H		
118	53	.74	87	PCT	14	P3	VS2	-.75		.31	VS2	VS2	.580	NPUFZ	64	H		
120	53	.39	147	PCT	13	P2	VS2	-.96			VS3	TEH	.610	NBAZ1	36	H		
120	53	.81	111	PCT	15	P3	VS2	-.59		.37	VS2	VS2	.580	NPUFZ	64	H		
125	54	.49	30	PCT	15	P2	VS1	-.79			VS3	TEH	.610	NBAZ1	35	H		
125	54	1.16	108	PCT	20	P3	VS1	-.72		.34	VS1	VS1	.580	NPUFZ	64	H		
118	55	.19	25	PCT	7	P2	VS2	-.71			VS3	TEH	.610	NBAZ1	35	H		
118	55	.67	87	PCT	13	P3	VS2	-.74		.26	VS2	VS2	.580	NPUFZ	64	H		DQA
128	55	.71	114	PCT	20	P2	VS3	.82			VS3	TEC	.610	NBAZ2	20	C		
128	55	.37	95	PCT	12	P2	VS2	.77			VS3	TEH	.610	NBAZ1	35	H		
128	55	.82	84	PCT	15	P3	VS2	.81		.54	VS2	VS2	.580	NPUFZ	64	H		
128	55	1.15	91	PCT	20	P3	VS3	1.05		.30	VS3	VS3	.580	NPUFZ	64	H		DQA
138	55	.31	110	PCT	10	P2	VS1	.48			VS3	TEH	.610	NBAZ1	38	H		
138	55	.83	97	PCT	15	P3	VS1	1.10		.20	VS1	VS1	.580	NPUFZ	64	H		
140	55	.33	149	PCT	11	P2	VS1	.41			VS3	TEH	.610	NBAZ1	38	H		
140	55	.98	99	PCT	17	P3	VS1	1.22		.23	VS1	VS1	.580	NPUFZ	64	H		
103	56	.27	127	PCT	8	P2	VS3	.81			VS3	TEC	.610	NBAZ1	19	C		
103	56	.92	110	PCT	17	P3	VS3	.74		.43	VS3	VS3	.580	NPUFZ	64	H		DQA
106	61	.27	96	PCT	10	P2	VS3	.65			VS3	TEH	.610	NBAZ1	33	H		
106	61	.69	95	PCT	13	P3	VS3	.82		.32	VS3	VS3	.580	NPUFZ	64	H		DQA
129	64	.51	119	PCT	13	P2	VS3	.77			VS3	TEC	.610	NBAZ1	19	C		
129	64	1.17	115	PCT	23	P2	VS4	-.73			VS3	TEC	.610	NBAZ1	19	C		
129	64	.38	126	PCT	12	P2	VS1	-.99			VS3	TEH	.610	NBAZ1	36	H		
129	64	.49	131	PCT	15	P2	VS2	-1.00			VS3	TEH	.610	NBAZ1	36	H		
ROW	COL	VOLTS	DEG	IND	PER	CHN	LOCN	INCH1	INCH2	CRLEN	BEGT	ENDT	PDIA	PTYPE	CAL	L	UTIL1	UTIL2

ROW	COL	VOLTS	DEG	IND	PER	CHN	LOCN	INCH1	INCH2	CRLEN	BEGT	ENDT	PDIA	PTYPE	CAL	L	UTIL1	UTIL2
129	64	.72	108	PCT	14	P3	VS1	-.91		.20	VS1	VS1	.580	NPUFZ	64	H		DQA
129	64	.85	97	PCT	16	P3	VS2	-.67		.36	VS2	VS2	.580	NPUFZ	64	H		
129	64	1.41	89	PCT	23	P3	VS3	.77		.36	VS3	VS3	.580	NPUFZ	64	H		
129	64	2.64	106	PCT	31	P3	VS4	-.67		.43	VS4	VS4	.580	NPUFZ	69	C		DQA
156	65	.17	134	PCT	6	P2	11H	-.33			VS3	TEH	.610	NBAZ1	28	H		
117	68	.36	130	PCT	12	P2	VS2	-1.00			VS3	TEH	.610	NBAZ1	36	H		
117	68	.74	109	PCT	14	P3	VS2	-.98		.30	VS2	VS2	.580	NPUFZ	64	H		
138	69	.29	79	PCT	10	P2	VS1	-.21			VS3	TEH	.610	NBAZ1	38	H		
118	71	.64	118	PCT	18	P2	VS4	.48			VS3	TEC	.610	NBAZ2	20	C		
118	71	2.13	112	PCT	26	P3	VS4	.49		.42	VS4	VS4	.580	NPUFZ	69	C		DQA
120	71	.22	156	PCT	8	P2	VS3	.69			VS3	TEH	.610	NBAZ1	35	H		
120	71	.53	104	PCT	11	P3	VS3	.85		.38	VS3	VS3	.580	NPUFZ	64	H		
45	72	.56	125	PCT	17	P2	08H	.70			VS3	TEH	.610	NBAZ2	1	H		
45	72	.95	99	PCT	17	P3	08H	.28		.20	07H	VS3	.580	NPUFZ	64	H		DQA
124	73	.27	59	PCT	8	P2	VS3	.73			VS3	TEC	.610	NBAZ1	19	C		
124	73	.61	119	PCT	12	P3	VS3	.93		.16	VS3	VS3	.580	NPUFZ	64	H		DQA
164	73	.18	123	PCT	7	P2	10H	.72			VS3	TEH	.610	NBAZ1	25	H		
147	74	.20	45	PCT	8	P2	VS3	.58			VS3	TEH	.610	NBAZ1	27	H		
147	74	.70	106	PCT	13	P3	VS3	.70		.24	VS3	VS3	.580	NPUFZ	64	H		
157	74	.27	157	PCT	9	P2	VS1	.79			VS3	TEH	.610	NBAZ1	26	H		
157	74	.43	84	PCT	13	P2	VS3	.45			VS3	TEH	.610	NBAZ1	26	H		
157	74	.77	100	PCT	14	P3	VS1	.39		.14	VS1	VS1	.580	NPUFZ	64	H		
157	74	.73	97	PCT	14	P3	VS3	.74		.27	VS3	VS3	.580	NPUFZ	64	H		
120	75	.59	60	PCT	17	P2	VS2	-.92			VS3	TEH	.610	NBAZ1	35	H		
120	75	1.43	106	PCT	23	P3	VS2	-.87		.24	VS2	VS2	.580	NPUFZ	64	H		
117	76	.22	138	PCT	8	P2	VS3	-.83			VS3	TEC	.610	NBAZ1	28	C		
117	76	.66	97	PCT	13	P3	VS3	-1.11		.24	VS3	VS3	.580	NPUFZ	64	H		DQA
ROW	COL	VOLTS	DEG	IND	PER	CHN	LOCN	INCH1	INCH2	CRLEN	BEGT	ENDT	PDIA	PTYPE	CAL	L	UTIL1	UTIL2

ROW	COL	VOLTS	DEG	IND	PER	CHN	LOCN	INCH1	INCH2	CRLEN	BEGT	ENDT	PDIA	PTYPE	CAL	L	UTIL1	UTIL2
165	76	.26	137	PCT	10	P2	10H	.71			VS3	TEH	.610	NBAZ1	25	H		
88	77	.20	146	PCT	7	P2	VS3	.60			VS3	TEC	.610	NBAZ2	14	C		
112	77	.22	86	PCT	7	P2	VS3	.96			VS3	TEC	.610	NBAZ1	28	C		
118	77	.19	116	PCT	6	P2	VS3	-.34			VS3	TEC	.610	NBAZ1	28	C		
118	77	.65	124	PCT	18	P2	VS3	.73			VS3	TEC	.610	NBAZ1	28	C		
118	77	.60	104	PCT	12	P3	VS3	-.26		.27	VS3	VS3	.580	NPUFZ	64	H		
118	77	1.50	99	PCT	24	P3	VS3	.93		.68	VS3	VS3	.580	NPUFZ	64	H		
51	78	.21	144	PCT	8	P2	08H	.51			VS3	TEH	.610	NBAZ2	4	H		
149	78	.47	101	PCT	15	P2	VS3	.31			VS3	TEH	.610	NBAZ1	25	H		
149	78	1.05	102	PCT	18	P3	VS3	.66		.64	VS3	VS3	.580	NPUFZ	63	H		DQA
158	79	.19	54	PCT	7	P2	VS1	1.66			VS3	TEH	.610	NBAZ1	25	H		
167	80	.22	116	PCT	8	P2	VS3	.70			VS3	TEH	.610	NBAZ1	25	H		
50	81	.18	97	PCT	7	P2	08H	-.33			VS3	TEH	.610	NBAZ2	3	H		
114	81	.55	134	PCT	16	P2	VS3	-.54			VS3	TEC	.610	NBAZ1	28	C		
114	81	1.52	105	PCT	24	P3	VS3	-.43		.32	VS3	VS3	.580	NPUFZ	63	H		DQA
118	85	.39	97	PCT	13	P2	VS2	-.62			VS3	TEH	.610	NBAZ1	36	H		
118	85	1.02	106	PCT	18	P3	VS2	-.30		.39	VS2	VS2	.580	NPUFZ	63	H		
126	85	.14	96	PCT	5	P2	VS1	-.87			VS3	TEH	.610	NBAZ1	36	H		
158	85	.29	149	PCT	10	P2	VS1	.84			VS3	TEH	.610	NBAZ1	26	H		
158	85	.89	96	PCT	16	P3	VS1	.57		.23	VS1	VS1	.580	NPUFZ	63	H		DQA
41	86	.36	150	PCT	12	P2	VS3	.58			VS3	TEH	.610	NBAZ2	4	H		
41	86	1.08	102	PCT	19	P3	VS3	.84		.43	VS3	VS3	.580	NPUFZ	64	H		
46	87	.84	119	PCT	21	P2	VS3	-.65			VS3	TEC	.610	NBAZ2	4	C		
46	87	1.24	103	PCT	21	P3	VS3	-.87		.19	VS3	VS3	.580	NPUFZ	64	H		
ROW	COL	VOLTS	DEG	IND	PER	CHN	LOCN	INCH1	INCH2	CRLEN	BEGT	ENDT	PDIA	PTYPE	CAL	L	UTIL1	UTIL2

ROW	COL	VOLTS	DEG	IND	PER	CHN	LOCN	INCH1	INCH2	CRLEN	BEGT	ENDT	PDIA	PTYPE	CAL	L	UTIL1	UTIL2
52	87	.33	133	PCT	11	P2	08H	-.30			VS3	TEH	.610	NBAZ2	4	H		
118	87	.51	115	PCT	13	P2	VS3	1.21			VS3	TEC	.610	NBAZ1	27	C		
118	87	.75	112	PCT	17	P2	VS4	.96			VS3	TEC	.610	NBAZ1	27	C		
118	87	1.30	95	PCT	21	P3	VS3	.83		.55	VS3	VS3	.580	NPUFZ	63	H		
118	87	1.80	105	PCT	23	P3	VS4	.74		.35	VS4	VS4	.580	NPUFZ	69	C		DQA
120	87	.31	111	PCT	8	P2	VS3	1.21			VS3	TEC	.610	NBAZ1	27	C		
120	87	.56	106	PCT	11	P3	VS3	.76		.18	VS3	VS3	.580	NPUFZ	63	H		
124	87	.17	69	PCT	6	P2	VS3	.73			VS3	TEH	.610	NBAZ1	35	H		
42	89	.34	152	PCT	11	P2	BW1	.81			VS3	TEH	.610	NBAZ2	3	H		
42	89	.72	122	PCT	14	P3	BW1	.72		.20	07H	VS3	.580	NPUFZ	64	H		DQA
88	89	.32	127	PCT	11	P2	09H	.78			VS3	TEH	.610	NBAZ1	30	H		
120	89	.27	85	PCT	10	P2	VS3	.80			VS3	TEC	.610	NBAZ1	28	C		
120	89	.60	94	PCT	12	P3	VS3	.93		.31	VS3	VS3	.580	NPUFZ	63	H		
157	90	.26	121	PCT	10	P2	VS1	.43			VS3	TEH	.610	NBAZ1	25	H		
157	90	.86	89	PCT	16	P3	VS1	.73		.24	VS1	VS1	.580	NPUFZ	63	H		
48	91	.30	151	PCT	10	P2	VS3	.60			VS3	TEC	.610	NBAZ2	4	C		
48	91	.86	100	PCT	16	P3	VS3	.90		.17	VS3	VS3	.580	NPUFZ	64	H		
102	91	.21	114	PCT	6	P2	VS3	1.24			VS3	TEC	.610	NBAZ1	27	C		
102	91	.61	88	PCT	12	P3	VS3	.87		.24	VS3	VS3	.580	NPUFZ	63	H		
110	91	.26	54	PCT	9	P2	VS3	.64			VS3	TEH	.610	NBAZ1	29	H		
110	91	.73	107	PCT	14	P3	VS3	.94		.23	VS3	VS3	.580	NPUFZ	63	H		
134	91	.45	111	PCT	15	P2	11H	1.14			VS3	TEH	.610	NBAZ1	25	H		
45	92	.64	132	PCT	18	P2	BW1	-.86			VS3	TEH	.610	NBAZ2	3	H		
45	92	1.06	93	PCT	19	P3	BW1	-.61		.26	07H	VS3	.580	NPUFZ	64	H		DQA
49	92	.48	129	PCT	15	P2	BW1	-.93			VS3	TEH	.610	NBAZ2	3	H		
ROW	COL	VOLTS	DEG	IND	PER	CHN	LOCN	INCH1	INCH2	CRLEN	BEGT	ENDT	PDIA	PTYPE	CAL	L	UTIL1	UTIL2

ROW	COL	VOLTS	DEG	IND	PER	CHN	LOCN	INCH1	INCH2	CRLEN	BEGT	ENDT	PDIA	PTYPE	CAL	L	UTIL1	UTIL2
49	92	.81	123	PCT	15	P3	BW1	-.82		.32	08H	VS3	.580	NPUFZ	64	H		DQA
103	92	.29	133	PCT	10	P2	VS3	.58			VS3	TEH	.610	NBAZ1	30	H		
103	92	.92	102	PCT	16	P3	VS3	.61		.25	VS3	VS3	.580	NPUFZ	63	H		
48	93	.22	138	PCT	8	P2	VS3	-.57			VS3	TEC	.610	NBAZ2	4	C		
48	93	.96	85	PCT	17	P3	VS3	-.63		.46	VS3	VS3	.580	NPUFZ	64	H		
102	93	.23	96	PCT	8	P2	VS3	.83			VS3	TEC	.610	NBAZ1	28	C		
102	93	.69	104	PCT	13	P3	VS3	.83		.28	VS3	VS3	.580	NPUFZ	63	H		
91	94	.14	26	PCT	6	P2	BW1	.85			VS3	TEH	.610	NBAZ1	29	H		
118	95	.27	127	PCT	10	P2	VS4	-.64			VS3	TEC	.610	NBAZ1	28	C		
118	95	.91	101	PCT	13	P3	VS4	-.59		.27	VS4	VS4	.580	NPUFZ	69	C		DQA
120	95	.38	121	PCT	12	P2	VS3	-.58			VS3	TEC	.610	NBAZ1	28	C		
120	95	.56	120	PCT	16	P2	VS3	.75			VS3	TEC	.610	NBAZ1	28	C		
120	95	1.36	103	PCT	22	P3	VS3	-.91		.48	VS3	VS3	.580	NPUFZ	63	H		
120	95	1.26	96	PCT	21	P3	VS3	.77		.30	VS3	VS3	.580	NPUFZ	63	H		
134	95	.29	134	PCT	10	P2	11H	1.00			VS3	TEH	.610	NBAZ1	23	H		
48	97	.24	112	PCT	9	P2	VS3	-.69			VS3	TEC	.610	NBAZ2	4	C		
48	97	.89	102	PCT	16	P3	VS3	-.50		.37	VS3	VS3	.580	NPUFZ	64	H		DQA
92	97	.26	145	PCT	9	P2	10H	.98			VS3	TEH	.610	NBAZ1	30	H		
49	98	.44	126	PCT	13	P2	VS3	.63			VS3	TEH	.610	NBAZ2	4	H		
49	98	.80	118	PCT	15	P3	VS3	.91		.28	VS3	VS3	.580	NPUFZ	64	H		
89	98	.26	93	PCT	7	P2	VS4	.98			VS3	TEC	.610	NBAZ1	23	C		
103	98	.36	128	PCT	10	P2	VS3	.89			VS3	TEC	.610	NBAZ1	27	C		
103	98	.96	97	PCT	17	P3	VS3	.52		.26	VS3	VS3	.580	NPUFZ	63	H		
127	98	.22	87	PCT	8	P2	06H	.73			VS3	TEH	.610	NBAZ1	33	H		
94	99	.29	147	PCT	10	P2	VS2	-.73			VS3	TEH	.610	NBAZ1	29	H		
ROW	COL	VOLTS	DEG	IND	PER	CHN	LOCN	INCH1	INCH2	CRLEN	BEGT	ENDT	PDIA	PTYPE	CAL	L	UTIL1	UTIL2

ROW	COL	VOLTS	DEG	IND	PER	CHN	LOCN	INCH1	INCH2	CRLEN	BEGT	ENDT	PDIA	PTYPE	CAL	L	UTIL1	UTIL2
94	99	.60	108	PCT	12	P3	VS2	-.75		.48	VS2	VS2	.580	NPUFZ	63	H		
98	99	.32	126	PCT	11	P2	VS2	-.93			VS3	TEH	.610	NBAZ1	29	H		
98	99	.70	103	PCT	13	P3	VS2	-.71		.50	VS2	VS2	.580	NPUFZ	63	H		
49	100	1.64	95	PCT	31	P2	BW1	.97			VS3	TEH	.610	NBAZ2	3	H		
49	100	.40	98	PCT	13	P2	BW2	.87			VS3	TEC	.610	NBAZ2	4	C		
49	100	2.31	110	PCT	32	P3	BW1	1.13		.20	08H	VS3	.580	NPUFZ	64	H		
49	100	.96	117	PCT	14	P3	BW2	.79		.13	08C	VS3	.580	NPUFZ	69	C		
103	100	.25	127	PCT	8	P2	BW1	-.94			VS3	TEH	.610	NBAZ1	30	H		
48	101	2.95	103	PCT	40	P2	BW1	-.71			VS3	TEH	.610	NBAZ2	4	H		
48	101	3.06	94	PCT	40	P2	VS3	-.60			VS3	TEH	.610	NBAZ2	4	H		
48	101	2.51	94	PCT	33	P3	BW1	-.90		.23	08H	VS3	.580	NPUFZ	64	H		DQA
48	101	4.60	85	PCT	47	P3	VS3	-.84		.40	08H	VS3	.580	NPUFZ	64	H		
52	101	.30	128	PCT	10	P2	VS3	-.54			VS3	TEC	.610	NBAZ2	4	C		
52	101	1.06	104	PCT	18	P3	VS3	-.55		.56	VS3	VS3	.580	NPUFZ	64	H		
144	101	.31	131	PCT	10	P2	VS1	-.93			VS3	TEH	.610	NBAZ1	24	H		
144	101	.87	98	PCT	16	P3	VS1	-.99		.43	VS1	VS1	.580	NPUFZ	62	H		
49	102	.47	103	PCT	14	P2	BW1	-.94			VS3	TEH	.610	NBAZ2	4	H		
49	102	1.03	113	PCT	18	P3	BW1	-.80		.17	08H	VS3	.580	NPUFZ	64	H		DQA
69	102	.39	101	PCT	10	P2	VS3	-.61			VS3	TEC	.610	NBAZ1	23	C		
69	102	1.15	106	PCT	20	P3	VS3	-.91		.63	VS3	VS3	.580	NPUFZ	62	H		
79	102	.42	140	PCT	14	P2	09H	.55			VS3	TEH	.610	NBAZ1	29	H		
79	102	.59	108	PCT	12	P3	09H	.55		.29	08H	VS2	.580	NPUFZ	62	H		
93	102	.56	121	PCT	17	P2	VS2	.58			VS3	TEH	.610	NBAZ1	29	H		
93	102	.90	94	PCT	16	P3	VS2	.69		.35	VS2	VS2	.580	NPUFZ	62	H		
113	102	.17	122	PCT	7	P2	10H	.15			VS3	TEH	.610	NBAZ1	33	H		
48	103	.75	101	PCT	17	P2	VS3	-.75			VS3	TEC	.610	NBAZ2	1	C		
48	103	1.73	100	PCT	26	P3	VS3	-.82		.42	VS3	VS3	.580	NPUFZ	64	H		
ROW	COL	VOLTS	DEG	IND	PER	CHN	LOCN	INCH1	INCH2	CRLEN	BEGT	ENDT	PDIA	PTYPE	CAL	L	UTIL1	UTIL2

ROW	COL	VOLTS	DEG	IND	PER	CHN	LOCN	INCH1	INCH2	CRLEN	BEGT	ENDT	PDIA	PTYPE	CAL	L	UTIL1	UTIL2
102	103	.25	100	PCT	10	P2	VS3	.79			VS3	TEC	.610	NBAZ1	26	C		
102	103	.96	77	PCT	17	P3	VS3	.90		.35	VS3	VS3	.580	NPUFZ	62	H		
47	104	.23	90	PCT	9	P2	BW2	.79			VS3	TEC	.610	NBAZ2	2	C		
47	104	.75	102	PCT	11	P3	BW2	.66		.14	07C	VS3	.580	NPUFZ	69	C		DQA
49	104	.46	108	PCT	14	P2	BW1	-.79			VS3	TEH	.610	NBAZ2	3	H		
49	104	1.11	115	PCT	19	P3	BW1	-.89		.37	08H	VS3	.580	NPUFZ	64	H		DQA
55	104	.29	113	PCT	10	P2	BW1	1.56			VS3	TEH	.610	NBAZ2	3	H		
48	105	.63	125	PCT	18	P2	VS3	.80			VS3	TEC	.610	NBAZ2	2	C		
48	105	.73	87	PCT	20	P2	BW2	.73			VS3	TEC	.610	NBAZ2	2	C		
48	105	1.39	94	PCT	19	P3	VS3	.56		.13	08C	VS3	.580	NPUFZ	69	C		
48	105	1.47	109	PCT	20	P3	BW2	.68		.16	08C	VS3	.580	NPUFZ	69	C		DQA
47	106	1.27	114	PCT	24	P2	VS3	.42			VS3	TEC	.610	NBAZ2	1	C		
47	106	1.40	113	PCT	28	P2	BW1	-.79			VS3	TEH	.610	NBAZ2	3	H		
47	106	.19	116	PCT	7	P2	VS3	-.77			VS3	TEH	.610	NBAZ2	3	H		
47	106	2.18	102	PCT	30	P3	BW1	-.70		.23	07H	VS3	.580	NPUFZ	63	H		DQA
47	106	2.82	98	PCT	36	P3	VS3	.67		.61	07H	VS3	.580	NPUFZ	63	H		
89	106	.26	141	PCT	8	P2	VS3	-.60			VS3	TEC	.610	NBAZ1	23	C		
89	106	.81	74	PCT	15	P3	VS3	-.89		.35	VS3	VS3	.580	NPUFZ	62	H		
103	106	.23	135	PCT	7	P2	VS3	.89			VS3	TEC	.610	NBAZ1	25	C		
103	106	.85	95	PCT	16	P3	VS3	.67		.49	VS3	VS3	.580	NPUFZ	62	H		
47	108	.54	124	PCT	15	P2	BW1	-.52			VS3	TEH	.610	NBAZ2	4	H		
47	108	1.34	122	PCT	22	P3	BW1	-.79		.19	07H	VS3	.580	NPUFZ	63	H		
47	108	.78	93	PCT	14	P3	VS3	.00		.21	07H	VS3	.580	NPUFZ	63	H		
51	108	.57	129	PCT	16	P2	BW1	-.84			VS3	TEH	.610	NBAZ2	4	H		
51	108	1.03	107	PCT	18	P3	BW1	-.66		.24	08H	VS3	.580	NPUFZ	63	H		
81	108	.40	149	PCT	12	P2	09H	.88			VS3	TEH	.610	NBAZ1	30	H		
48	109	.92	72	PCT	22	P2	BW1	1.00			VS3	TEH	.610	NBAZ2	3	H		
ROW	COL	VOLTS	DEG	IND	PER	CHN	LOCN	INCH1	INCH2	CRLEN	BEGT	ENDT	PDIA	PTYPE	CAL	L	UTIL1	UTIL2

ROW	COL	VOLTS	DEG	IND	PER	CHN	LOCN	INCH1	INCH2	CRLEN	BEGT	ENDT	PDIA	PTYPE	CAL	L	UTIL1	UTIL2
48	109	1.20	95	PCT	20	P3	BW1	.85		.21	08H	VS3	.580	NPUFZ	63	H		
47	110	.60	104	PCT	15	P2	VS3	.45			VS3	TEC	.610	NBAZ2	1	C		
47	110	1.53	109	PCT	24	P3	VS3	.75		.71	VS3	VS3	.580	NPUFZ	63	H		
49	110	.38	117	PCT	11	P2	BW2	.68			VS3	TEC	.610	NBAZ2	1	C		
49	110	.79	126	PCT	12	P3	BW2	.38		.11	08C	VS3	.580	NPUFZ	69	C		
95	110	.25	124	PCT	7	P2	VS3	-.47			VS3	TEC	.610	NBAZ1	25	C		
95	110	.72	102	PCT	14	P3	VS3	-.69		.29	VS3	VS3	.580	NPUFZ	62	H		
129	110	.42	130	PCT	14	P2	VS1	.70			VS3	TEH	.610	NBAZ1	21	H		
129	110	1.01	99	PCT	18	P3	VS1	.42		.67	VS1	VS1	.580	NPUFZ	62	H		
56	111	.24	71	PCT	9	P2	VS3	-.70			VS3	TEH	.610	NBAZ2	17	H		
56	111	.66	95	PCT	13	P3	VS3	-.71		.37	VS3	VS3	.580	NPUFZ	63	H		
90	111	.25	131	PCT	9	P2	09H	.75			VS3	TEH	.610	NBAZ1	21	H		
44	113	.34	137	PCT	11	P2	BW1	-.88			VS3	TEH	.610	NBAZ2	3	H		
44	113	.82	98	PCT	15	P3	08H	.17		.20	07H	VS3	.580	NPUFZ	63	H		DQA
44	113	1.11	104	PCT	19	P3	BW1	-.92		.39	07H	VS3	.580	NPUFZ	63	H		
43	114	.54	116	PCT	15	P2	BW1	-.57			VS3	TEH	.610	NBAZ2	4	H		
43	114	1.05	108	PCT	18	P3	BW1	-.85		.38	07H	VS3	.580	NPUFZ	63	H		
67	114	.24	30	PCT	9	P2	09H	.86			VS3	TEH	.610	NBAZ2	17	H		
113	114	.27	113	PCT	10	P2	VS2	.65			VS3	TEH	.610	NBAZ1	19	H		
41	116	.86	109	PCT	21	P2	BW1	-1.10			VS3	TEH	.610	NBAZ2	6	H		
41	116	.94	109	PCT	17	P3	BW1	-.80		.42	07H	VS3	.580	NPUFZ	63	H		DQA
47	116	.68	138	PCT	18	P2	BW1	-1.20			VS3	TEH	.610	NBAZ2	6	H		
47	116	.68	133	PCT	13	P3	BW1	-1.02		.23	07H	VS3	.580	NPUFZ	62	H		
155	116	.53	120	PCT	16	P2	VS1	-.83			VS3	TEH	.610	NBAZ1	23	H		
155	116	1.27	104	PCT	21	P3	VS1	-.77		.53	VS1	VS1	.580	NPUFZ	62	H		

ROW	COL	VOLTS	DEG	IND	PER	CHN	LOCN	INCH1	INCH2	CRLEN	BEGT	ENDT	PDIA	PTYPE	CAL	L	UTIL1	UTIL2
40	117	.30	86	PCT	10	P2	BW1	-1.12				VS3	TEH	.610	NBAZ2	6	H	
40	117	.59	124	PCT	12	P3	BW1	-.86		.38	07H	VS3	.580	NPUFZ	62	H		
44	117	.22	112	PCT	7	P2	BW1	-1.31				VS3	TEH	.610	NBAZ2	6	H	
96	117	.26	131	PCT	9	P2	09H	.77				VS3	TEH	.610	NBAZ1	20	H	
41	118	.33	124	PCT	11	P2	08H	.69				VS3	TEH	.610	NBAZ2	5	H	
41	118	.64	281	PCT	12	P3	08H	.88		.60	07H	VS3	.580	NPUFZ	62	H		
45	120	.64	131	PCT	18	P2	BW1	-1.08				VS3	TEH	.610	NBAZ2	6	H	
45	120	1.17	121	PCT	20	P3	BW1	-1.11		.32	07H	VS3	.580	NPUFZ	62	H		
51	120	.21	126	PCT	7	P2	09H	-.76				VS3	TEH	.610	NBAZ2	6	H	
135	120	.27	138	PCT	10	P2	VS1	.65				VS3	TEH	.610	NBAZ1	21	H	
153	120	.19	65	PCT	7	P2	VS1	-.89				VS3	TEH	.610	NBAZ1	21	H	
36	121	.36	72	PCT	12	P2	BW1	-1.10				VS3	TEH	.610	NBAZ2	6	H	
36	121	.83	125	PCT	15	P3	BW1	-.99		.54	07H	VS3	.580	NPUFZ	62	H		
66	121	.23	82	PCT	8	P2	09H	-.17				VS3	TEH	.610	NBAZ1	16	H	
100	121	.40	142	PCT	13	P2	VS2	.63				VS3	TEH	.610	NBAZ1	20	H	
100	121	1.04	92	PCT	18	P3	VS2	.85		.44	VS2	VS2	.580	NPUFZ	62	H		
127	122	.24	115	PCT	9	P2	VS1	.21				VS3	TEH	.610	NBAZ1	19	H	
127	122	.62	77	PCT	12	P3	VS1	.44		.23	VS1	VS1	.580	NPUFZ	62	H		
34	123	.23	127	PCT	9	P2	07H	-1.22				VS3	TEH	.610	NBAZ2	5	H	
34	123	.72	116	PCT	12	P3	07H	-1.13		.35	07H	07H	.600	NPAHZ	60	H		
140	123	.21	141	PCT	8	P2	06H	.72				VS3	TEH	.610	NBAZ1	22	H	
168	123	.29	140	PCT	10	P2	BW2	-.40				VS3	TEC	.610	NBAZ1	50	C	
168	123	1.02	102	PCT	15	P3	BW2	-.60		.14	10C	VS5	.580	NPUFZ	69	C		
136	125	.18	58	PCT	7	P2	11H	-.18				VS3	TEH	.610	NBAZ1	21	H	
ROW	COL	VOLTS	DEG	IND	PER	CHN	LOCN	INCH1	INCH2	CRLEN	BEGT	ENDT	PDIA	PTYPE	CAL	L	UTIL1	UTIL2

ROW	COL	VOLTS	DEG	IND	PER	CHN	LOCN	INCH1	INCH2	CRLEN	BEGT	ENDT	PDIA	PTYPE	CAL	L	UTIL1	UTIL2
69	126	.26	134	PCT	10	P2	VS3	-.43			VS3	TEH	.610	NBAZ2	15	H		
69	126	.78	106	PCT	15	P3	VS3	-.69		.21	VS3	VS3	.580	NPUFZ	62	H		
24	127	.56	115	PCT	17	P2	BW1	.96			VS3	TEH	.610	NBAZ2	5	H		
24	127	1.05	114	PCT	18	P3	BW1	.88		.32	07H	VS3	.580	NPUFZ	62	H		
165	128	.65	108	PCT	16	P2	BW2	.39			VS3	TEC	.610	NBAZ1	45	C		
165	128	1.41	120	PCT	19	P3	BW2	.53		.13	10C	VS5	.580	NPUFZ	69	C		
45	132	.35	136	PCT	11	P2	08H	.61			VS3	TEH	.610	NBAZ2	6	H		
45	132	.57	91	PCT	11	P3	08H	.85		.27	07H	VS3	.580	NPUFZ	62	H		
50	133	.57	126	PCT	16	P2	09H	1.27			VS3	TEH	.610	NBAZ2	6	H		
50	133	.67	94	PCT	13	P3	09H	1.24		.26	08H	VS3	.580	NPUFZ	62	H		
116	133	.27	136	PCT	9	P2	VS2	.50			VS3	TEH	.610	NBAZ1	20	H		
116	133	.74	91	PCT	14	P3	VS2	.91		.33	VS2	VS2	.580	NPUFZ	61	H		
50	135	.40	115	PCT	13	P2	09H	1.37			VS3	TEH	.610	NBAZ2	5	H		
50	135	.59	108	PCT	12	P3	09H	1.23		.31	08H	VS3	.580	NPUFZ	61	H		
128	137	.22	137	PCT	8	P2	VS2	1.34			VS3	TEH	.610	NBAZ1	20	H		
111	138	.23	99	PCT	9	P2	10H	.67			VS3	TEH	.610	NBAZ1	19	H		
68	145	.23	140	PCT	8	P2	09H	.48			VS3	TEH	.610	NBAZ1	16	H		
107	146	.24	85	PCT	9	P2	VS2	-.83			VS3	TEH	.610	NBAZ2	13	H		
107	146	.75	73	PCT	14	P3	VS2	-.93		.72	VS2	VS2	.580	NPUFZ	61	H		
152	147	.17	95	PCT	7	P2	03C	.00			VS3	TEC	.610	NBAZ1	45	C		
80	153	.20	127	PCT	7	P2	VS2	-.78			VS3	TEH	.610	NBAZ2	11	H		
80	153	.70	85	PCT	13	P3	VS2	-.61		.51	VS2	VS2	.580	NPUFZ	61	H		
100	153	.15	135	PCT	6	P2	09H	.76			VS3	TEH	.610	NBAZ2	13	H		
102	153	.18	131	PCT	7	P2	VS2	.77			VS3	TEH	.610	NBAZ2	13	H		
ROW	COL	VOLTS	DEG	IND	PER	CHN	LOCN	INCH1	INCH2	CRLEN	BEGT	ENDT	PDIA	PTYPE	CAL	L	UTIL1	UTIL2

ROW	COL	VOLTS	DEG	IND	PER	CHN	LOCN	INCH1	INCH2	CRLEN	BEGT	ENDT	PDIA	PTYPE	CAL	L	UTIL1	UTIL2
102	153	.73	87	PCT	14	P3	VS2	.79		.53	VS2	VS2	.580	NPUFZ	61	H		
89	154	.25	137	PCT	9	P2	VS3	-.77			VS3	TEH	.610	NBAZ2	12	H		
89	154	.82	89	PCT	15	P3	VS3	-.94		.26	VS3	VS3	.580	NPUFZ	61	H		DQA
78	155	.26	105	PCT	9	P2	VS2	1.00			VS3	TEH	.610	NBAZ2	12	H		
71	156	.19	137	PCT	7	P2	VS2	.91			VS3	TEH	.610	NBAZ2	11	H		
87	156	.20	99	PCT	7	P2	VS3	-.76			VS3	TEH	.610	NBAZ2	11	H		
87	156	.75	93	PCT	14	P3	VS3	-1.03		.18	VS3	VS3	.580	NPUFZ	61	H		
142	157	.18	148	PCT	7	P2	11H	.77			VS3	TEH	.610	NBAZ2	13	H		
117	160	.25	119	PCT	9	P2	VS3	-.88			VS3	TEH	.610	NBAZ2	14	H		
117	160	.53	105	PCT	11	P3	VS3	-1.03		.28	VS3	VS3	.580	NPUFZ	61	H		
118	161	.15	133	PCT	6	P2	10H	.86			VS3	TEH	.610	NBAZ2	13	H		
89	166	.53	119	PCT	15	P2	VS3	-.78			VS3	TEH	.610	NBAZ2	12	H		
89	166	.26	149	PCT	9	P2	VS3	.68			VS3	TEH	.610	NBAZ2	12	H		
89	166	1.14	110	PCT	20	P3	VS3	-.98		.30	VS3	VS3	.580	NPUFZ	61	H		
109	166	.21	69	PCT	7	P2	VS3	-.88			VS3	TEH	.610	NBAZ2	13	H		
109	166	.70	75	PCT	13	P3	VS3	-1.22		.29	VS3	VS3	.580	NPUFZ	61	H		
87	170	.24	89	PCT	9	P2	VS3	-.75			VS3	TEH	.610	NBAZ2	10	H		
87	170	.58	79	PCT	12	P3	VS3	-1.19		.21	VS3	VS3	.580	NPUFZ	61	H		
56	175	.37	139	PCT	12	P2	BW1	-1.00			VS3	TEH	.610	NBAZ2	10	H		
56	175	.95	119	PCT	17	P3	BW1	-1.10		.48	08H	VS3	.580	NPUFZ	61	H		DQA
58	175	.28	121	PCT	10	P2	BW1	.88			VS3	TEH	.610	NBAZ2	10	H		
67	176	.18	62	PCT	7	P2	VS3	-.68			VS3	TEH	.610	NBAZ2	9	H		
67	176	.55	106	PCT	11	P3	VS3	-.78		.18	VS3	VS3	.580	NPUFZ	61	H		
33	178	.19	98	PCT	7	P2	VS3	.30			VS3	TEH	.610	NBAZ2	8	H		
ROW	COL	VOLTS	DEG	IND	PER	CHN	LOCN	INCH1	INCH2	CRLEN	BEGT	ENDT	PDIA	PTYPE	CAL	L	UTIL1	UTIL2

ROW	COL	VOLTS	DEG	IND	PER	CHN	LOCN	INCH1	INCH2	CRLEN	BEGT	ENDT	PDIA	PTYPE	CAL	L	UTIL1	UTIL2
49	178	.23	153	PCT	7	P2	09H	-1.22			VS3	TEH	.610	NBAZ2	8	H		
113	178	.23	132	PCT	8	P2	VS3	-1.00			VS3	TEH	.610	NBAZ2	11	H		
113	178	.57	88	PCT	12	P3	VS3	-1.00		.16	VS3	VS3	.580	NPUFZ	61	H		
76	179	.15	95	PCT	6	P2	VS2	.86			VS3	TEH	.610	NBAZ2	9	H		
96	179	.29	125	PCT	10	P2	VS2	.92			VS3	TEH	.610	NBAZ2	12	H		
69	180	.58	103	PCT	17	P2	VS3	-.84			VS3	TEH	.610	NBAZ2	9	H		
69	180	1.22	100	PCT	21	P3	VS3	-.72		.38	VS3	VS3	.580	NPUFZ	61	H		
97	180	.23	95	PCT	8	P2	VS3	-.83			VS3	TEH	.610	NBAZ2	12	H		
97	180	.90	79	PCT	17	P3	VS3	-.99		.31	VS3	VS3	.580	NPUFZ	61	H		
72	181	.25	118	PCT	9	P2	VS3	.94			VS3	TEH	.610	NBAZ2	10	H		
72	181	.66	74	PCT	13	P3	VS3	.97		.36	VS3	VS3	.580	NPUFZ	61	H		
84	183	.22	115	PCT	8	P2	VS3	.37			VS3	TEH	.610	NBAZ2	9	H		
84	183	.60	118	PCT	12	P3	VS3	.49		.26	VS3	VS3	.580	NPUFZ	61	H		
102	183	.25	106	PCT	9	P2	VS3	-.91			VS3	TEH	.610	NBAZ2	11	H		
102	183	.85	102	PCT	16	P3	VS3	-.83		.19	VS3	VS3	.580	NPUFZ	61	H		
78	189	.17	119	PCT	7	P2	VS3	-.44			VS3	TEC	.610	NBAZ1	40	C		
ROW	COL	VOLTS	DEG	IND	PER	CHN	LOCN	INCH1	INCH2	CRLEN	BEGT	ENDT	PDIA	PTYPE	CAL	L	UTIL1	UTIL2

APPENDIX D

PLI & PLP

DATA SHEETS

ROW	COL	VOLTS	DEG	IND	PER	CHN	LOCN	INCH1	INCH2	CRLEN	BEGT	ENDT	PDIA	PTYPE	CAL	L	UTIL1	UTIL2
ROW	COL	VOLTS	DEG	IND	PER	CHN	LOCN	INCH1	INCH2	CRLEN	BEGT	ENDT	PDIA	PTYPE	CAL	L	UTIL1	UTIL2

SG - 32 ST Max

Palo Verde 3 U3R15 PVNGS3 20101001 11/01/2010 16:05:21

ROW	COL	VOLTS	DEG	IND	PER	CHN	LOCN	INCH1	INCH2	CRLEN	BEGT	ENDT	PDIA	PTYPE	CAL	L	UTIL1	UTIL2
153	64	1.24	86	PLP		8	FDP	.88			FDP	FDP	.600	NPAHZ	67	C		SR
154	65	1.31	88	PLP		8	FDP	.64			FDP	FDP	.600	NPAHZ	67	C		SR
156	65	1.02	79	PLP		8	FDP	.99			FDP	FDP	.600	NPAHZ	67	C		SR

| ROW | COL | VOLTS | DEG | IND | PER | CHN | LOCN | INCH1 | INCH2 | CRLEN | BEGT | ENDT | PDIA | PTYPE | CAL | L | UTIL1 | UTIL2 |

APPENDIX E

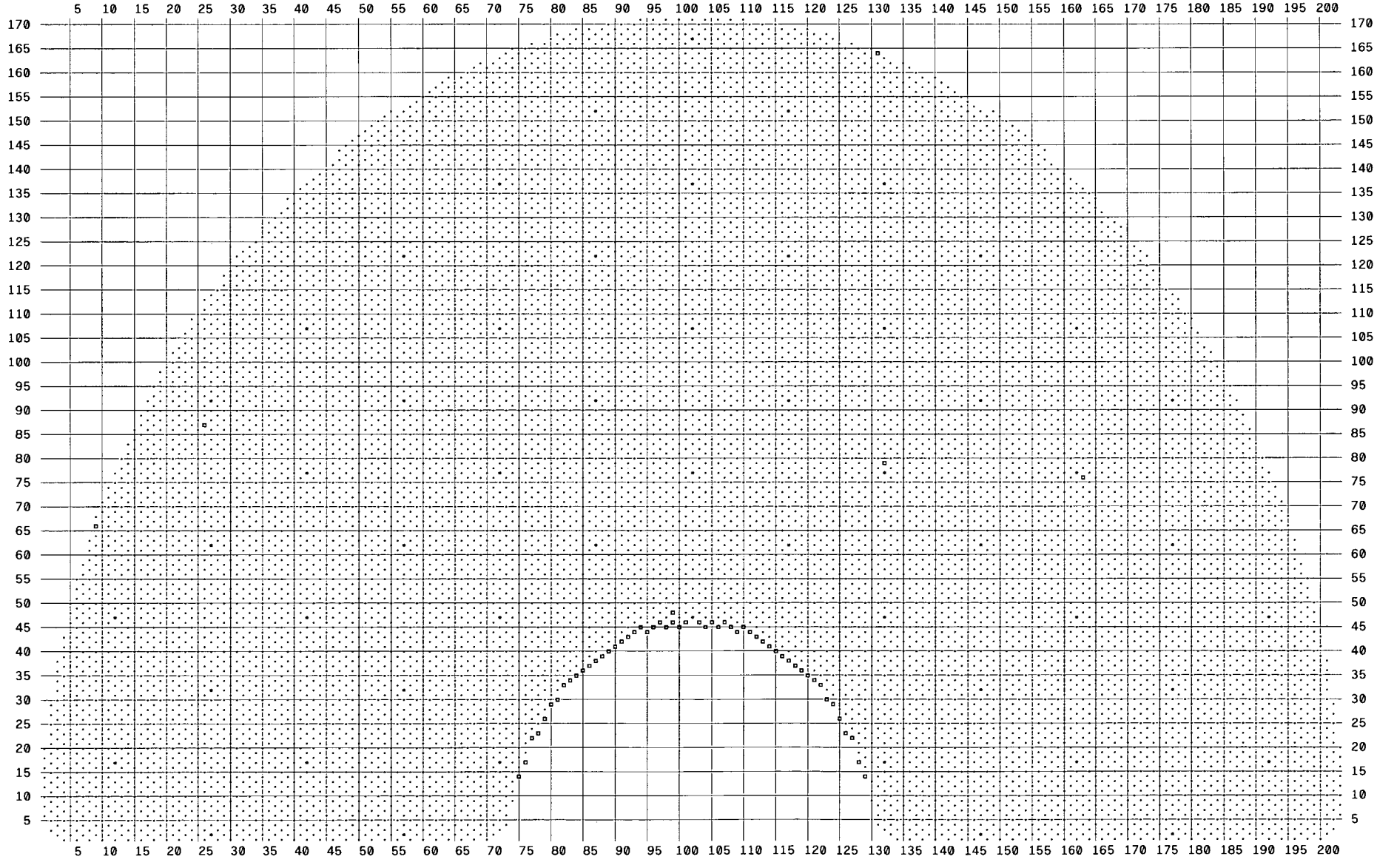
PLUG MAPS

SG - 31 No Tubes Plugged in this SG in U3R15

Palo Verde U3R15 PVNGS3 3RSG

□ 60 Plugged Tube

* 53 Stay Rod



Westinghouse Electric Company LLC - ST Max 10/21/2010 21:57:37

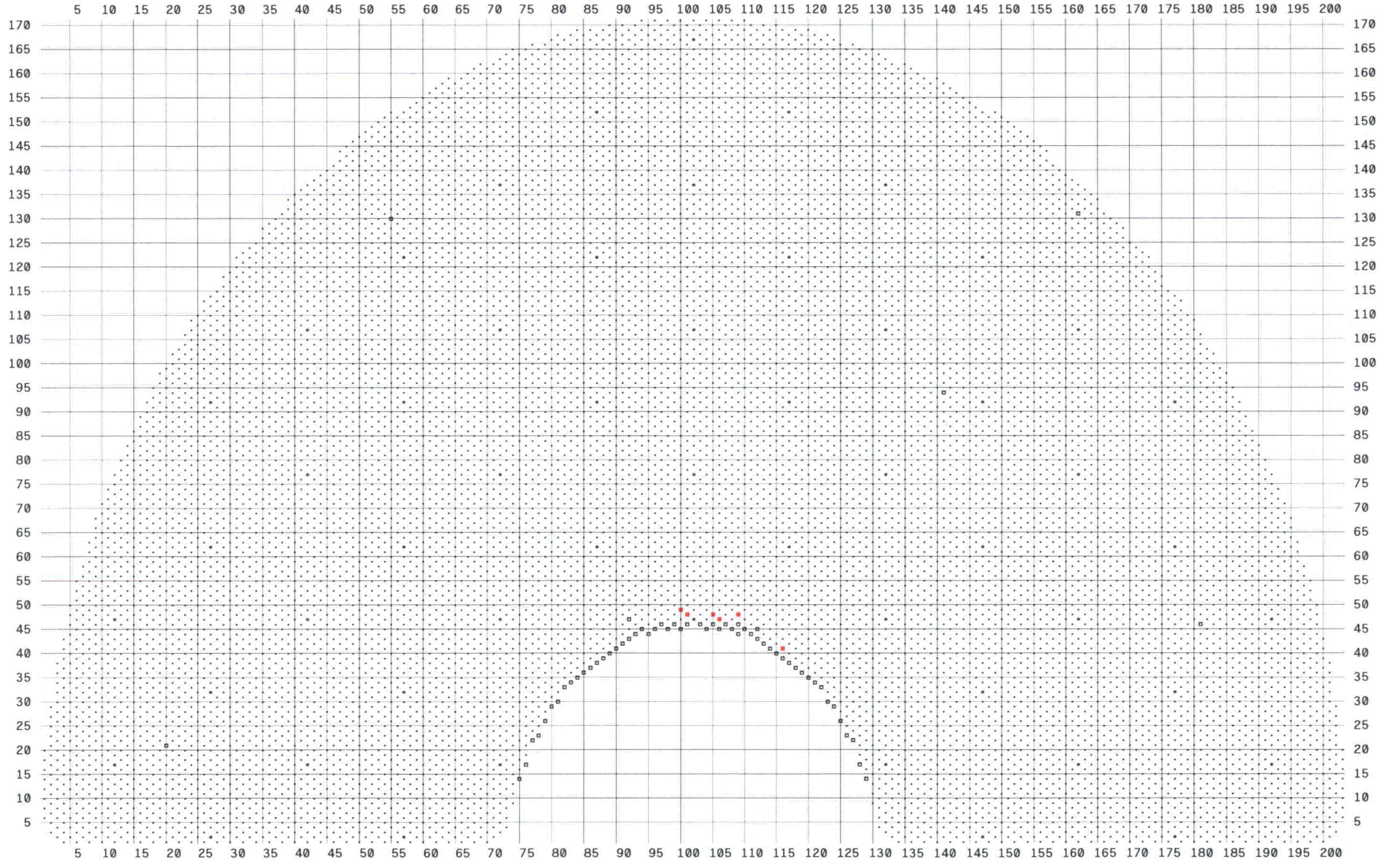
SG - 32 Tubes Plugged in U3R15

Palo Verde U3R15 PVNGS3 3RSG

62 Plugged Tube

53 Stay Rod

6 Tube Plugged in U3R15



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APPENDIX F

FORM NIS-1

APS	NIS – 1 FORM OWNERS' DATA REPORT FOR INSERVICE INSPECTIONS
1. OWNER	ARIZONA PUBLIC SERVICE COMPANY, et al
1a. ADDRESS	P. O. BOX 52034; PHOENIX, ARIZONA 85072
2. PLANT	PALO VERDE NUCLEAR GENERATING STATION
2a. ADDRESS	5801 SOUTH WINTERSBURG ROAD, TONOPAH, ARIZONA 85354
3. UNIT NUMBER	3
4. OWNERS CERTIFICATE OF AUTHORIZATION	NONE
5. COMMERCIAL SERVICE DATE	1-8-88
6. COMPONENTS INSPECTED:	

COMPONENT OR APPURTENANCE	MANUFACTURER OR INSTALLER	SERIAL NUMBER	STATE OR PROVINCE	NATIONAL BOARD NO
3MRCEE01A STEAM GENERATOR 31	Ansaldo	242	NA	191
3MRCEE01B STEAM GENERATOR 32	Ansaldo	243	NA	192

APS	NIS – 1 BACK OWNERS' DATA REPORT FOR INSERVICE INSPECTIONS

7. EXAM DATES	October 2010
8. INSPECTION INTERVAL	1-11-08 to 1-10-18

9. ABSTRACT OF EXAMINATIONS. INCLUDE A LIST OF EXAMINATIONS AND A STATEMENT CONCERNING STATUS OF WORK REQUIRED FOR CURRENT INTERVAL.

Table 1 in the report summary section documents the number and type of each examination performed.

A summary of the tubes with indications of degradation is listed in Appendix B and C of this report for SG 31 and 32 respectively. The tubes identified below were plugged as a result of this examination.

The number of tubes plugged are as follows: SG 31 = 0 tubes **(no tubes were plugged)**

SG 32 = 6 tubes

Row 49	**Line 100**
Row 48	**Line 101**
Row 48	**Line 105**
Row 47	**Line 106**
Row 48	**Line 109**
Row 41	**Line 116**

WE CERTIFY THAT THE STATEMENTS MADE IN THIS REPORT ARE CORRECT AND THE EXAMINATIONS AND CORRECTIVE MEASURES TAKEN CONFORM TO THE RULES OF THE ASME CODE, SECTION XI.

DATE_____ SIGNED: ARIZONA PUBLIC SERVICE COMPANY BY Hansen, Douglas B(Z41530)

Digitally signed by Hansen, Douglas B(Z41530)
DN: cn=Hansen, Douglas B(Z41530)
Reason: I am the author of this document
Date: 2011.04.29 16:02:11 -07'00'

CERTIFICATE OF INSERVICE INSPECTION

I, THE UNDERSIGNED, HOLDING A VALID COMMISSION ISSUED BY THE NATIONAL BOARD OF BOILER AND PRESSURE VESSEL INSPECTORS AND THE STATE OF PROVINCE OF ARIZONA EMPLOYED BY HSB CT OF HARTFORD, CONNECTICUT HAVE INSPECTED THE COMPONENTS DESCRIBED IN THIS OWNERS REPORT DURING THE PERIOD 10-1-10 TO 4-29-11, AND STATE THAT TO THE BEST OF MY KNOWLEDGE AND BELIEF, THE OWNER HAS PERFORMED EXAMINATIONS AND TAKEN CORRECTIVE MEASURES DESCRIBED IN THIS OWNERS REPORT IN ACCORDANCE WITH THE REQUIREMENTS OF THE ASME CODE, SECTION XI. BY SIGNING THIS CERTIFICATE NEITHER THE INSPECTOR NOR HIS EMPLOYER MAKES ANY WARRANTY, EXPRESSED OR IMPLIED, CONCERNING THE EXAMINATIONS AND CORRECTIVE MEASURES DESCRIBED IN THIS OWNERS REPORT. FURTHERMORE, NEITHER THE INSPECTOR NOR HIS EMPLOYER SHALL BE LIABLE IN ANY MANNER FOR ANY PERSONAL INJURY OR PROPERTY DAMAGE OR A LOSS OF ANY KIND ARISING FROM OR CONNECTED WITH THIS INSPECTION.

INSPECTOR RB Hansen COMMISSIONS NB 9685 "A,N,I,C" Az 264
NATL' BOARD, STATE, PROVINCE

DATE 4-29-11