Annual Report for Assessment of Outcomes

Submitted June 10, 2012
SAC: WLD: Welding Technology
Outcomes assessed for Welding AAS Degree:

1. **Describe changes to teaching practices implemented as a result of learning outcome assessment that were carried out in the previous academic year.**

   While it is true that we created an assessment plan that was positively reviewed by our peers, it is also true that the welding SAC failed to follow through on this plan. It is because of this that there have been no changes in our teaching practices.

   We have, however, made changes in the way we are approaching this assessment as a SAC to ensure this doesn't happen again. We have found that the (nearly) democratic division of labor gets everyone interested, informed, and invested in SAC related activities. This report is the work of many hands. We expect that changes will be implemented as a result of the learning outcomes assessed this year.

2. **Identify the outcomes assessed this year and describe methods used. What were the results of the assessment (i.e. what did you learn about how well students are meeting the outcomes)**

   Welding AAS outcomes assessed:

- Function Safely in a work environment
- Interpret blueprints to accurately fabricate a product
- Think critically and creatively to trouble-shoot and solve welding problems
- Cut, prepare and assemble projects to specified tolerances
- Demonstrate professional work ethics
- Participate in earth friendly environmental activities such as recycling metal, plastics, paint, and other items associated with the welding profession
- Weld and successfully pass the following welding certification tests evaluated by a third party agency: SMAW, GMAW, FCAW and a pipe weld test.

Welding Technology Assessment Report

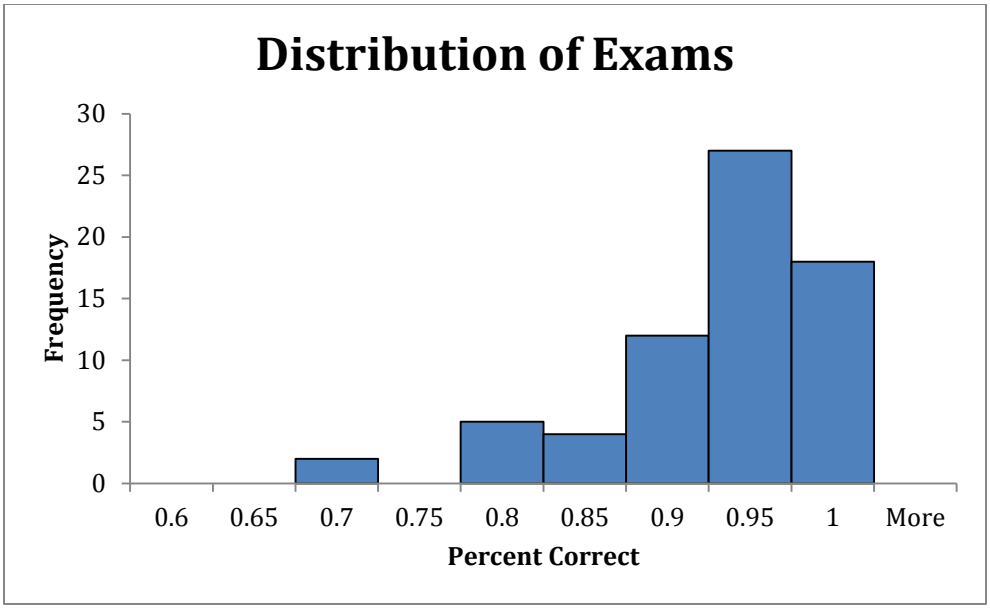
Outcome: Function safely in a welding environment
Design:
The following safety test data was gathered during the 2012 Winter Term.
Every student must go through a thorough safety training module where s/he views videos, completes work sheets, takes an instructor lead shop tour and then completes a 35 question safety test prior to working in the weld shop. After each of the prerequisite steps are completed, the student completes the safety test and then it is graded and reviewed with the student to determine if the student has the knowledge to work safely in the shop
.
It should be noted that all students have to complete the safety module at the "point of entry." This ensures that every student has the same safety training base prior to working in the shop.
The Welding Department has selected the safety test/students results as the measure to determine if we are meeting the above stated outcome. The analysis technique we have selected for this

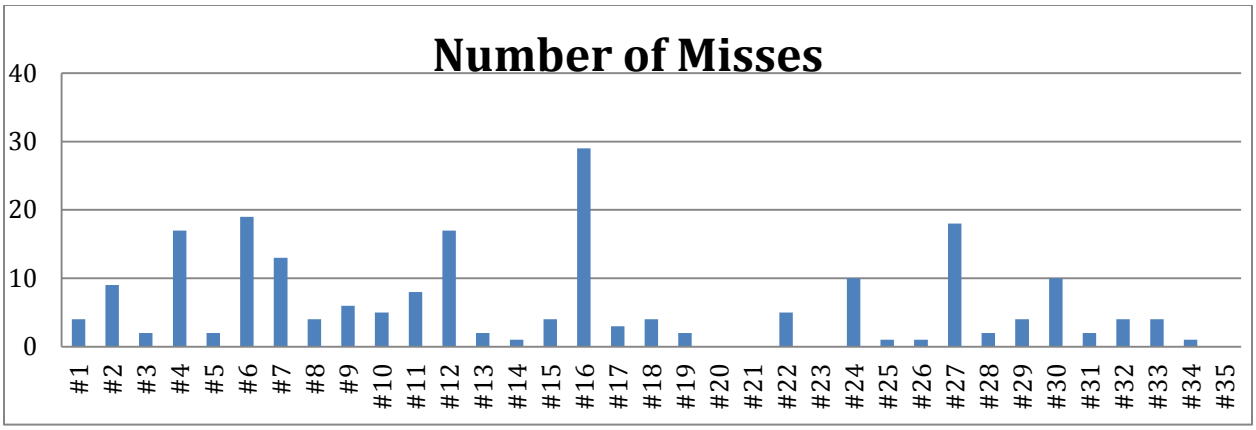
outcome is a two prong approach. First, the raw scores were reviewed and converted to percentage to determine if the students passed or not. The Welding Department requires an 80% pass rate to work in the shop. Secondly, the tests were reviewed question by question to determine if there were questions that were missed at a higher level. This data can be viewed below.

Completion of this multiple choice and True/False safety test is an objective measure to determine if the student has a general knowledge of working in an industrial setting. This is an essential tool at the point of entry.

Data collection and Results:

Sample Size	68
Mean (average)	0.9105042
Median (counting middle)	0.9142857
Range (difference between max. and min. scores)	0.3428571
Minimum	0.6571429
Maximum	1





Results:
Sixty eight new students took the safety test after a 5 hour training period. As indicated above by the tests scores graph, there are a few areas in our safety training the need to be addressed because of the results of this data (these are the areas which represent 10 or more students missing the questions).
The areas are:

1. Oxyacetylene safety – oil use and flashback arrestors
2. Electric Arc safety – arc eyes and thermal cut offs
3. Pedestal Grinding

Instructional Changes:
At this juncture the Welding Department reviewed the test questions missed and found that questions 16 and 27 were awkwardly written so those will be "cleaned up."
The remaining areas represented the six questions missed will be addressed by an instructional shift emphasizing those areas in lecture/discussion periods, pre-test worksheet, and during our shop safety tour. This three pronged approach will allow the instructors to touch base with multiple learning styled students to ensure these areas are understood by all students.

Assessment Strategy Changes / Department Discussion Points:
The Welding Department will make the stated changes above and then reevaluate the "success" of these changes at the end of the fall 2012 term. The same data gathering method will be used for consistency and this will assist us in determining if we are providing instruction needed to our student basis.

In addition to bolstering our initial intake safety training process as stated above, the Welding Department needs to discuss how to objectively measure on going safety requirements for continuing students. Currently, instructors' safety assessment weighs in at 15% - 20% per their syllabus. However, there is no tool developed yet to measure this requirement objectively on an ongoing basis. Hence, the faculty needs to discuss the measurement techniques instead of using an anecdotal approach.

Welding AAS Outcome: Demonstrate professional work ethics.

Maps to College Core outcome: Professional competence.

Assessment method: Attendance records for all full time students for Winter Term 2012 were collected by instructors for morning, midday and evening shifts. A full time student is defined as a student registered for 12 credits of welding classes. Instructors were asked to show the full time students, the number of days they attended and the course grades.
Summary of data collected:
Student summary: 30 total full time students representing 105 total courses.

Welding Technology Assessment Winter Term 2012

1. Welding AAS Outcome: Demonstrate professional work ethics.
2. Maps to College Core outcome: Professional competence.

Assessment method: Attendance records for all full time students for Winter Term 2012 were collected by instructors for morning, midday and evening shifts. A full time student is defined as a student registered for 12 credits of welding classes. Instructors were asked to show the full time students, the number of days they attended and the course grades.
Summary of data collected:

Student summary: 30 total full time students representing 105 total courses.
Grade summary: A= 64, B= 15, C= 2, P= 2, D= 1, F= 13, NP= 1, I= 4, Audit= 1

18 students on AM representing 65 courses
A=33, B=12, C=1, P=0, D=1, F=7, NP=0, I=4, Audit=1
9 students on Midday representing 29 courses
A=25, B=0, C=0, P=0, D=0, F=4, NP=0, I=0, Audit=0
3 students on Nights representing 12 courses
A=5, B=0, C=1, P=2, D=0, F=3, NP=1, I=0, Audit=0

Attendance summary:
30 students attended a total of 881 days and absent 237 days.

18 students on AM attended 597 days and absent 96 days
9 students on midday attended 245 days and absent 70 days
3 students on nights attended 77 days and absent 86 days

GENERAL COMMENTS:

1. Results (what did you learn?)
   We learned that attendance directly relates to student success and absence to student failure.
   We learned that we do not have an accurate, consistent or efficient method or system to track student attendance.
   We agree that attendance is not the best way to assess Professional work ethics and professional competence.

2. Instructional Changes planned based on what was learned.
   We plan to purchase a new time clock. A new time clock would provide more accurate accounting of hours spent in a course and help us better assess our task verses time balance and impact of student attendance.

3. Assessment strategy changes planned based on what was learned

   Develop a better way to assess work ethic and professional competence.
   Industry and instructors agree that showing up is 90% of anything. Possibly developing a student exercise to assess and track man hours per project and resulting cost would help instill in the student a greater sense of the value for productive use of time and how attendance in class or on the job impact the cost of a product and success of the student. More discussion on how to fully assess work ethic and professional competence is needed.

	WINTI	Shift	Attendance/Grade Data														total		total	total
			Class	Days	Grade	Class	Days	Grad	Class	Days	Grad	Class	Days	Grad	inst	attendanc	shift	shift		
1		am	114	9 of 11	A	151	8 of 12	B	131	12 of 12	A	132	12 of 12	I	ms	40	-6			
2		am	224	11 of 12	A	225	12 of 12	A	261	20 of 20	A				ms	43	-1			
3		am	114	11 of 11	A	151	11 of 11	A	131	11 of 11	I	116a	11 of 11	A	ms	43	0			
4		am	114	10 of 11	A	151	9 of 11	A	131	10 of 11	A	132	11 of 11	I	ms	40	-3			
5		am	114	11 of 11	A	151	10 of 11	A	131	11 of 11	A	132	9 of 11	A	ms	41	-2			
6		am	114	3 of 11	F	151	10 of 11	B	131	0 of 11	F	132	0 of 11	F	ms	13	-31			
7		am	114	9 of 11	B	151	?	?	131	11 of 11	A	132	11 of 11	A	ms	31	-2			
8		am	151	?	F	114	?	F	131	?	F	116a	?	F	ms	0	0			
9		am	132	9 of 11	A	141	9 of 11	A	286a	11 of 11	A	186b	11 of 11	A	ms	40	-4			
10		am	114	10 of 11	B	151	11 of 11	B	131	10 of 11	A	132	9 of 11	A	ms	40	-3			
11		am	263	20 of 20	B	256	7 of 11	B	257	11 of 11	A				ms	38	-4			
12		am	132	11 of 11	B	151	11 of 11	B	151	11 of 11	B	131	11 of 11	A	ms	44	0			
13		am	111	16 of 16	A	112	16 of 16	A	113	12 of 12	A				lo	44	0			
14		am	141	19 of 19	A	142	12 of 13	A	221	11 of 12	A				lo	42	-1			
15		am	111	20 of 24	C	112	16 of 19	D	113	0 of 12	AU				lo	36	-19			
16		am	142	10 of 15	I	186a	8 of 12	B	186b	6 of 8	B	286a	6 of 9	B	lo	30	-14			
17		am	111	14 of 15	B	112	15 of 16	B	113	11 of 11	B				lo	31	-2			
18		am	111	16 of 16	A	112	16 of 16	A	113	12 of 12	A				lo	44	0	597	-96	
19		mid	151	10 of 11	A	152	18 of 20	A	221	10 of 11	A				ls	38	-4			
20		mid	114	11 of 11	A	151	10 of 11	A	131	10 of 11	A	132	9 of 11	A	ls	40	-4			
21		mid	111	14 of 16	A	112	15 of 16	A	113	14 of 16	A				ls	43	-3			
22		mid	131	9 of 11	A	132	8 of 11	A	152	16 of 20	A				ls	33	-8			
23		mid	112	1of 12	F	113	0 of 12	F	114	0 of 12	F	151	0 of 12	F	dm	1	-45			
24		mid	131	11 of 12	A	132	11 of 12	A	141	11 of 12	A	142	11 of 12	A	dm	44	-4			
25		mid	111	16 of 16	A	112	15 of 16	A	113	15 of 16	A				dm	46	-2			
26		mid	111	?	A	112	?	A	113	?	A				dm	0	0			
27		mid	263	?	A	262	?	A							dm	0	0	245	-70	
28		pm	111	4 of 16	F	112	0 of 16	F	113	0 of 16	F				cc	4	-44			
29		pm	114	7 of 12	A	131	7 of 12	A	132	7 of 12	A	141	7 of 12	A	kl	35	-20	142	7 of	A
30		pm	186a	11 of 12	P	186b	10 of 12	P	286a	10 of 12	C	286b	0 of 12	NP	kl	31	-17	77	-86	
	Total															881	-237			

Reading the chart:

A= Total students registered for 12 credits in welding and attending full time Monday through Friday

B= Blank student name

C= Time of day , AM 7-12, Mid 12-5, PM 5-10

D,G,J and M = identify the welding courses

F, I, L and O= lists the students grade in the course

E, H, K and N= shows the numer of days the student attended

P= Identifys the instructor, ms=Matt Scott, lo=Liberty Olson, ls=Link Sprinkle, dm=Danny Merrick, cc=Connie Christopher, kl=Kevin Longueil

Q= Total days student attended

R= Total days student was absent

S= Total days students attended per shift

T= Total days students were absent per shift

Outcome:
Participate in earth friendly environmental activities such as recycling metal, plastics, paint and other items associated with the welding profession.

Design – A simple survey was developed to assess the awareness and actions of students regarding recycling in the PCC Weld shop. The sample size is 30 surveys which represents roughly one full shift in the welding dept.

Name:

RECYCLING SURVEY
WELDING TECHNOLOGY

Are you aware that we are able to recycle these items in the PCC Weld Shop			**For each item identified below, circle the number to the right that best fits your actions in the PCC Weld Shop**	**1 = Never 2 = Sometimes 3 = Very often 4 = Always n/a= Not applicable**				
Steel (sheet, plate, etc.)	Yes	No	How often do you recycle your steel?	1	2	3	4	n/a
Stainless Steel (sheet)	Yes	No	How often do you recycle your stainless steel?	1	2	3	4	n/a
Aluminum (sheet, cans, etc.)	Yes	No	How often do you recycle your aluminum?	1	2	3	4	n/a
Copper alloys (gas cups, tips, diffusers, etc.)	Yes	No	How often do you recycle copper alloys?	1	2	3	4	n/a
Plastic (wire spools)	Yes	No	How often do you recycle plastic?	1	2	3	4	n/a
Cardboard and paper	Yes	No	How often do you recycle cardboard and paper?	1	2	3	4	n/a
Batteries	Yes	No	How often do you recycle batteries?	1	2	3	4	n/a
Bottles and cans	Yes	No	How often do you recycle bottles and cans?	1	2	3	4	n/a
Paint cans	Yes	No	How often do you recycle paint cans?	1	2	3	4	n/a
				1	2	3	4	n/a
				1	2	3	4	n/a

Results of Recycle survey

Are you aware that we are able to recycle these items in the PCC Weld shop?

Steel (sheet, plate, etc.)	Yes	30	No	0
Stainless Steel (sheet)	Yes	30	No	0
Aluminum (sheet, cans, etc.)	Yes	30	No	0
Copper alloys (gas cups, tips, diffusers, etc.)	Yes	28	No	2
Plastic (wire spools)	Yes	27	No	3
Cardboard and paper	Yes	27	No	3
Batteries	Yes	9	No	21
Bottles and cans	Yes	27	No	3
Paint cans	Yes	6	No	24

For each item identified below, circle the number to the right that best fits your actions in the PCC Weld Shop

How often do you recycle your steel?	1	1	2	2	3	3	4	23	n/a	1
How often do you recycle your stainless steel?	1	2	2	1	3	0	4	17	n/a	10
How often do you recycle your aluminum?	1	2	2	3	3	0	4	18	n/a	7
How often do you recycle copper alloys?	1	2	2	1	3	4	4	12	n/a	11
How often do you recycle plastic?	1	5	2	1	3	8	4	12	n/a	4
How often do you recycle cardboard and paper?	1	3	2	4	3	6	4	14	n/a	3
How often do you recycle batteries?	1	6	2	5	3	4	4	6	n/a	9
How often do you recycle bottles and cans?	1	4	2	2	3	5	4	17	n/a	2
How often do you recycle paint cans?	1	5	2	3	3	2	4	0	n/a	20

There is a clear correlation between the student awareness of the ability to recycle an item and the action of recycling. There may also be a correlation between how often a student uses an item and how they scored the survey. For instance only six people were aware that we recycle paint cans but there may only be six people that used a paint can that took the survey. All of the recycling which takes place on the shop floor score very well for awareness of recycling and the action of recycling. Items which are recycled only in the Weld shop tool room scored much lower for awareness and action.

Changes that could be made to improve student recycling in the lower scoring categories would be to increase student awareness in the shop of all that can be recycled, perhaps through signage.

The assessment tool could be improved by including language which asks whether a student has used the recyclable item or not. This was the point of the "n/a" column of the survey but I believe this was not obvious to all students

The assessment tool clearly shows a strong recycling culture in the PCC Weld shop and is a strong indicator that our students are meeting the intended outcome stated above.

OUTCOME

- **Weld and successfully pass the following welding certification tests evaluated by a third party agency: SMAW, GMAW, FCAW and a pipe weld test.**

General Comments - Weld 151, SMAW Certification preparation: Unlimited Thickness Mild Steel is a course intended for the student with advanced welding skills. This course utilizes a lecture/lab format, which includes classroom discussions and lab demonstrations. Discussion topics covered include safety, welding techniques, and qualification procedures in compliance with AWSD1.1 Structural Steel Welding Code.

This is an outcome based course that allows the student to work at his/her own pace. The goal at the end of this course is to build the skills needed to pass the 1" inch structural plate test. When the student has demonstrated this skill level through successful completion of two consecutive shop tests, s/he was given the option to take a qualification test that was sent to an independent test lab for certification. This option is not required for the successful completion of this course and it is at an additional cost to the student.

1. Changes resulting from last year's assessment?

None, no assessment was turned in last year.

2. DESIGN (What did you do, and how did you do it?)

Weld certification test were compiled and the results from each test was evaluated. There were a total of 27 tests taken from the year 2010 and a total of 17 tests taken so far in 2012. In 2010 there was a 97% pass rate overall, and so far in 2012 the pass rate is 98%. 2% of the tests were rejected in house (an "in-house" rejection is a test that was rejected in the PCC weld shop by a PCC welding instructor. The student purchased another test plate and continued the test.) and the student opted for a retake prior to turning the test in for inspection.

3. RESULTS (what did you learn?) Because of the high success rate we believe our students can clearly be shown to be meeting this AAS outcome. There was enough in house rejections on these test to warrant another look at when the students taking the test are actually ready for testing. The fact that the test are rejected in the welding shop means that the test were visually rejected. This means that the test did not pass due to the cover passes. In most cases this can be attributed to the student being overly nervous because they know this is a test.

4 . Instructional changes planned based on what was learned?
The 151 course packet would include a project that the student does that is only cover passes since cover passes seems to be a weakness in this packet.

5. Assessment strategy changes planned based on what was learned?
Add one or two extra projects to the Wld 151 course that would strengthen the students ability to put in the cover passes on their welds without visual defects. One possibility would be to add a bead plate project to sharpen the students skills in the cover pass just prior to testing.

Other Comments;

The Wld 151 course is the first step taken by most of our students towards becoming certified welders. It is important that this first testing experience be positive for the student. The addition of extra training on covers before testing may be the fix needed to get more tests to pass in the shop.

Examples of student welding certification tests

WELDING QUALIFICATION TEST
Project Number:

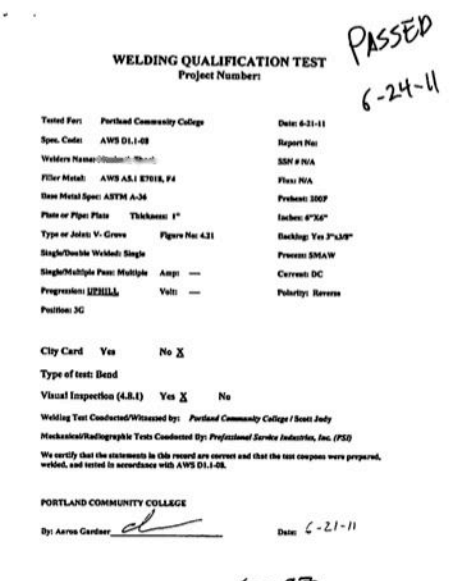
PASSED 7-5-11

Tested For: Portland Community College — Date: 7-5-11
Spec. Code: ASME SEC-9 — Report No:
Welders Name: [redacted] — SSN # N/A
Filler Metal: AWS A5.1 Class ER70S-1/E7018, F4 — Flux: N/A
Base Metal Spec: SA-53 P-1 — Preheat: 70 F
Plate or Pipe: PIPE 3" SCH 80 — Inches: Wall Thickness .318
Type or Joint: V- Grove — Figure No: — Backing: No
Single/Double Welded: Single — Process: GTAW/SMAW
Single/Multiple Pass: Multiple — Amp: — — Current: DC
Progression: UP-HILL — Volt: — — Polarity: Straight/Reverse
Position: 6G

Type of test: Bend
Visual Inspection (4.8.1) Yes X No
Welding Test Conducted/Witnessed by: *Portland Community College / Matt Scott*
Mechanical/Radiographic Tests Conducted By: *Professional Service Industries, Inc. (PSI)*
We certify that the statements in this record are correct and that the test coupons were prepared, welded, and tested in accordance with ASME SEC-9.

PORTLAND COMMUNITY COLLEGE
By: [signature] Date: 7,5,11

ON-TRAC RUN # 478



WELDING QUALIFICATION TEST
Project Number:

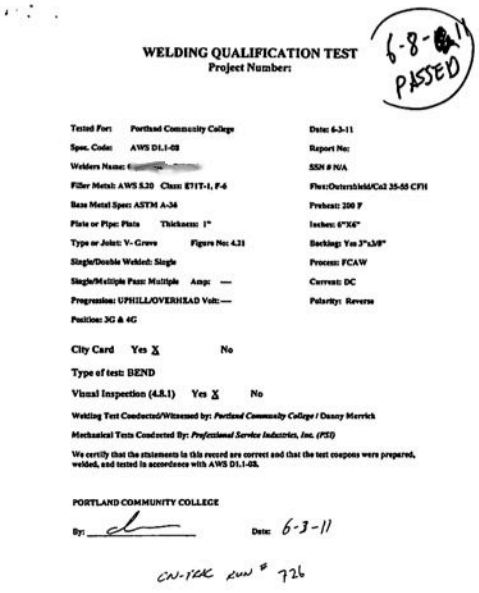
PASSED 6-24-11

Tested For: Portland Community College — Date: 6-21-11
Spec. Code: AWS D1.1-08 — Report No:
Welders Name: [redacted] — SSN # N/A
Filler Metal: AWS A5.1 E7018, F4 — Flux: N/A
Base Metal Spec: ASTM A-36 — Preheat: 200F
Plate or Pipe: Plate — Thickness: 1" — Inches: 6"X6"
Type or Joint: V- Grove — Figure No: 4.31 — Backing: Yes 3"x3/8"
Single/Double Welded: Single — Process: SMAW
Single/Multiple Pass: Multiple — Amp: — — Current: DC
Progression: UPHILL — Volt: — — Polarity: Reverse
Position: 3G

City Card Yes — No X
Type of test: Bend
Visual Inspection (4.8.1) Yes X No
Welding Test Conducted/Witnessed by: *Portland Community College / Scott Judy*
Mechanical/Radiographic Tests Conducted By: *Professional Service Industries, Inc. (PSI)*
We certify that the statements in this record are correct and that the test coupons were prepared, welded, and tested in accordance with AWS D1.1-08.

PORTLAND COMMUNITY COLLEGE
By: Aaron Gardner [signature] Date: 6-21-11

ON-TRAC RUN # 757



WELDING QUALIFICATION TEST
Project Number:

6-8-11 PASSED

Tested For: Portland Community College — Date: 6-3-11
Spec. Code: AWS D1.1-08 — Report No:
Welders Name: [redacted] — SSN # N/A
Filler Metal: AWS 5.20 Class: E71T-1, F-6 — Flux: Outershield/Co2 35-55 CFH
Base Metal Spec: ASTM A-36 — Preheat: 200 F
Plate or Pipe: Plate — Thickness: 1" — Inches: 6"X6"
Type or Joint: V- Grove — Figure No: 4.31 — Backing: Yes 3"x3/8"
Single/Double Welded: Single — Process: FCAW
Single/Multiple Pass: Multiple — Amp: — — Current: DC
Progression: UPHILL/OVERHEAD Volt: — — Polarity: Reverse
Position: 3G & 4G

City Card Yes X No
Type of test: BEND
Visual Inspection (4.8.1) Yes X No
Welding Test Conducted/Witnessed by: *Portland Community College / Danny Merrick*
Mechanical Tests Conducted By: *Professional Service Industries, Inc. (PSI)*
We certify that the statements in this record are correct and that the test coupons were prepared, welded, and tested in accordance with AWS D1.1-08.

PORTLAND COMMUNITY COLLEGE
By: [signature] Date: 6-3-11

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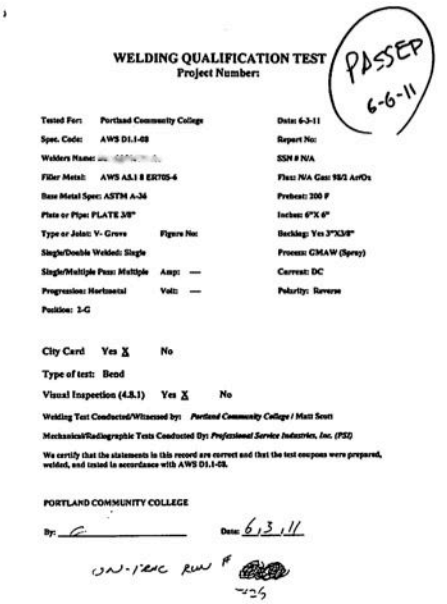

WELDING QUALIFICATION TEST
Project Number:

PASSED 6-6-11

Tested For: Portland Community College — Date: 6-3-11
Spec. Code: AWS D1.1-08 — Report No:
Welders Name: [redacted] — SSN # N/A
Filler Metal: AWS A5.1 E 7018 — Flux: N/A Gas: 98/2 Ar/Os
Base Metal Spec: ASTM A-36 — Preheat: 200 F
Plate or Pipe: PLATE 3/8" — Inches: 6"X 6"
Type or Joint: V- Grove — Figure No: — Backing: Yes 3"X3/8"
Single/Double Welded: Single — Process: GMAW (Spray)
Single/Multiple Pass: Multiple — Amp: — — Current: DC
Progression: Horizontal — Volt: — — Polarity: Reverse
Position: 3-G

City Card Yes X No
Type of test: Bend
Visual Inspection (4.8.1) Yes X No
Welding Test Conducted/Witnessed by: *Portland Community College / Matt Scott*
Mechanical/Radiographic Tests Conducted By: *Professional Service Industries, Inc. (PSI)*
We certify that the statements in this record are correct and that the test coupons were prepared, welded, and tested in accordance with AWS D1.1-08.

PORTLAND COMMUNITY COLLEGE
By: [signature] Date: 6,3,11

ON-TRAC RUN # [redacted]

Examples of student welding certification tests

Information To Build On
Engineering • Consulting • Testing

WELDING QUALIFICATION TEST
Project Number: 0689113

Tested For: Portland Community College
Spec. Code: AWS D1.1-10
Welders Name:
Filler Metal: AWS A5.1, Class E7018, F4
Base Metal Spec.: ASTM A-36
Plate or Pipe: Plate **Thickness:** 1"
Type of Joint: V-Groove **Fig. No.:** 4.21
Single/Double Welded: Single
Single/Multiple Pass: Multiple **Amp:** ---
Progression: Uphill/Overhead **Volt:** ---

Date: May 14, 2012
Report No: 0689113-80a
SSN: ---
Flux: N/A
Preheat: 200°F
Inches: 6" x 6"
Backing: Yes
Process: SMAW
Current: DC
Polarity: Reverse

GROOVE WELD TESTS

Position Tested	Radiographic Test	Bend Tests			Positions Qualified	Thickness Qualified	Diameter Qualified	Process Qualified
		Root	Face	Side				
3G				Passed	ALL	1/8"-Unlimited	24" & Up	SMAW
4G				Passed				

Visual Inspection (4.8.1) Acceptable: YES X NO ____ City of Portland# 7565
Welding Test Conducted/Witnessed By: Portland Community College/ Liberty Olson
Mechanical Tests Conducted By: **Professional Service Industries, Inc.**
Steve Moore, Lab Supervisor, Mechanical Testing Services Date: May 17, 2012

We certify that the statements in this record are correct and that the test coupons were prepared, welded, and tested in accordance with AWS D1.1-10.

Organization: Portland Community College
By:

City of Portland # 7565 WELDERS CERTIFICATION Expiration Date: 05/14/20
NAME:
SOCIAL SECURITY NO.: ---
SPECIFICATION CODE: AWS D1.1-10
DATE TESTED: 05/14/2012 PROCESS: SMAW
MATL. TYPE: ASTM A-36 FILLER METAL: E7018
POSITIONS QUALIFIED: ALL BACK UP: YES
THICKNESS QUALIFIED: 1/8"-ULTD. SPT. NO.: 0689113-80a
EXAMINER:

Services performed for this project have been conducted with that level of care and skill ordinarily exercised by members of the professions currently practicing in this area under similar budget and time restraints. No warranty, expressed or implied, is made. This limited test results apply only to the specific samples tested and may not represent the entire product. Reports may not be reproduced, except in full, without written approval of Professional Service Industries, Inc.
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Information To Build On
Engineering • Consulting • Testing

WELDING QUALIFICATION TEST
Project Number: 0689113

Tested For: Portland Community College
Spec. Code: AWS D1.1-10
Welders Name:
Filler Metal: AWS A5.20, Class E71T-1, F6
Base Metal Spec.: ASTM A-36
Plate or Pipe: Plate **Thickness:** 1"
Type of Joint: V-Groove **Fig. No.:** 4.21
Single/Double Welded: Single
Single/Multiple Pass: Multiple **Amp:** ---
Progression: Uphill/Overhead **Volt:** ---

Date: May 14, 2012
Report No: 0689113-80b
SSN: ---
Flux: Outershield/CO_2 35-55 CFH
Preheat: 200°F
Inches: 6" x 6"
Backing: Yes
Process: FCAW
Current: DC
Polarity: Reverse

GROOVE WELD TESTS

Position Tested	Radiographic Test	Bend Tests			Positions Qualified	Thickness Qualified	Diameter Qualified	Process Qualified
		Root	Face	Side				
3G				Passed	ALL	1/8"-Unlimited	24" & Up	FCAW
4G				Passed				

Visual Inspection (4.8.1) Acceptable: YES X NO ____ City of Portland# 7566
Welding Test Conducted/Witnessed By: Portland Community College/ Liberty Olson
Mechanical Tests Conducted By: **Professional Service Industries, Inc.**
Steve Moore, Lab Supervisor, Mechanical Testing Services Date: May 17, 2012

We certify that the statements in this record are correct and that the test coupons were prepared welded, and tested in accordance with AWS D1.1-10.

Organization: Portland Community College
By:

City of Portland # 7566 WELDERS CERTIFICATION Expiration Date: 05/14/2013
NAME:
SOCIAL SECURITY NO.:
SPECIFICATION CODE: AWS D1.1-10 PROCESS: FCAW
DATE TESTED: 05/14/2012 FILLER METAL: E71T-1
MATL. TYPE: ASTM A-36 BACK UP: YES
POSITIONS QUALIFIED: ALL
THICKNESS QUALIFIED: 1/8"-ULTD. SPT. NO.: 0689113-80b
EXAMINER:

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Information To Build On
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WELDING QUALIFICATION TEST
Project Number: 0689113

Tested For: Portland Community College
Spec. Code: AWS D1.1-10
Welders Name:
Filler Metal: AWS A5.20, Class E71T-1, F6
Base Metal Spec.: ASTM A-36
Plate or Pipe: Plate **Thickness:** 1"
Type of Joint: V-Groove **Fig. No.:** 4.21
Single/Double Welded: Single
Single/Multiple Pass: Multiple **Amp:** ---
Progression: Uphill/Overhead **Volt:** ---

Date: April 27, 2012
Report No: 0689113-79
SSN: ---
Flux: CO_2 100%
Preheat: 200°F
Inches: 6" x 6"
Backing: Yes
Process: FCAW
Current: DC
Polarity: Reverse

GROOVE WELD TESTS

Position Tested	Radiographic Test	Bend Tests			Positions Qualified	Thickness Qualified	Diameter Qualified	Process Qualified
		Root	Face	Side				
3G				Passed	ALL	1/8"-Unlimited	24" & Up	FCAW
4G				Passed				

Visual Inspection (4.8.1) Acceptable: YES X NO ____ City of Portland# 7533
Welding Test Conducted/Witnessed By: Portland Community College/ Mr. Matt Scott
Mechanical Tests Conducted By: **Professional Service Industries, Inc.**
Steve Moore, Lab Supervisor, Mechanical Testing Services Date: May 8, 2012

We certify that the statements in this record are correct a... welded, and tested in accordance with AWS D1.1-10.

Organization: Portland Community College
By:

City of Portland # 7533 WELDERS CERTIFICATION Expiration Dat 04/27/
NAME:
SOCIAL SECURITY NO.:
SPECIFICATION CODE: AWS D1.1-10
DATE TESTED: 04/27/2012 PROCESS: FCAW
MATL. TYPE: ASTM A-36

Information To Build On
Engineering • Consulting • Testing

WELDING QUALIFICATION TEST
Project Number: 0689113

Tested For: Portland Community College
Spec. Code: AWS D1.1-10
Welders Name:
Filler Metal: AWS A5.20, Class E71T-1, F6
Base Metal Spec.: ASTM A-36
Plate or Pipe: Plate **Thickness:** 1"
Type of Joint: V-Groove **Fig. No.:** 4.21
Single/Double Welded: Single
Single/Multiple Pass: Multiple **Amp:** ---
Progression: Uphill/Overhead **Volt:** ---

Date: April 13, 2012
Report No: 0689113-78b
SSN: ---
Flux: CO_2 100%
Preheat: 200°F
Inches: 6" x 6"
Backing: Yes
Process: FCAW
Current: DC
Polarity: Reverse

GROOVE WELD TESTS

Position Tested	Radiographic Test	Bend Tests			Positions Qualified	Thickness Qualified	Diameter Qualified	Process Qualified
		Root	Face	Side				
3G				Passed	ALL	1/8"-Unlimited	24" & Up	FCAW
4G				Passed				

Visual Inspection (4.8.1) Acceptable: YES X NO ____ City of Portland# 7483
Welding Test Conducted/Witnessed By: Portland Community College/ Mr. Kevin Longuel
Mechanical Tests Conducted By: **Professional Service Industries, Inc.**
Steve Moore, Lab Supervisor, Mechanical Testing Services Date: April 18, 2012

We certify that the statements in this record are correct and that the test coupons were prepared, welded, and tested in accordance with AWS D1.1-10.

Organization: Portland Community College
By: Date: April 13, 2012